

Appendix A13.1: Land Contamination Supporting Information

1.1 Introduction

- 1.1.1 This appendix supports Chapter 13: Geology, Soils, Groundwater and Land Contamination. It provides additional baseline information on land contamination within the study area to support the Environmental Impact Assessment Report (EIAR) conclusions.
- 1.1.2 Risk assessment for the management of land contamination is central to [Part IIA of the Environmental Protection Act 1990](#) (Department for Environment, Food and Rural Affairs, 2012), which was implemented through the [Contaminated Land \(Scotland\) Regulations 2000 \(as amended 2005\)](#) (Scottish Government, 2005). The main principle of this approach is that a risk only exists if a suitable pathway exposes identified receptors to the hazard (or source) in question. This is referred to as a pollutant linkage.
- 1.1.3 The Part IIA regime and supporting guidance has therefore resulted in the development of a formalised and explicit technical approach to assess risks to humans, the water environment, ecosystems and buildings (building materials), which is applicable to any land contamination and management project.
- 1.1.4 In order to establish the level of potential risk that may be present, the guidance set out within CIRIA C552 '[Contaminated Land Risk Assessment: A Guide to Good Practice](#)' (CIRIA, 2001) and '[Land Contamination: Risk Management](#)' (Environment Agency, 2023) has been followed. LCRM identifies three core components in the assessment and management of land contamination, comprising: Risk Assessment; Options Appraisal; and Remediation.
- 1.1.5 The first stage, risk assessment has 3 tiers:
- Tier 1: Preliminary Risk Assessment
 - Tier 2: Generic Quantitative Risk Assessment; and
 - Tier 3: Detailed Quantitative Risk Assessment.
- 1.1.6 The first tier, a Preliminary Risk Assessment, was undertaken within the EIAR at Stage 2 (URS Scott Wilson, 2011) and within the PSSRs at Stage 2 EIAR (Scott Wilson, 2011) (Jacobs, 2013a) (Jacobs, 2013b) and is presented within a preliminary conceptual site model (CSM). The preliminary CSM was developed in general accordance with the methodologies set out in '[Contaminated Land Report 11: Model Procedures for the Management of Land Contamination](#)' (CLR 11) (Environment Agency, 2004) which was the statutory guidance at that time. CLR 11 was subsequently withdrawn in October 2020 and replaced with LCRM (Environment Agency, 2023).

- 1.1.7 The draft Geo-Environmental Assessment Report (GeAR) (Jacobs, 2024a) which supports the draft Ground Investigation Report (GIR) (Jacobs, 2024b) for the proposed scheme, documents the revision of the preliminary CSM via the development of a generic quantitative risk assessment (GQRA), undertaking Tier 2 of the LCRM methodology. This appendix summarises the revision of the preliminary CSM and the development of the GQRA within the draft GeAR (Jacobs, 2024a) which are pertinent to human health and the Water Environment and therefore of relevance to the EIA assessment. The GQRA has been developed based on information gathered subsequent to the PSSR and during the EIA assessment process and includes data derived from various stages of Ground Investigation (GI) designed specifically to support the proposed scheme. The updated CSM and evaluation of risk is presented in full in Annex B and summarised in Table A13.1-6 and Table A13.1-7.
- 1.1.8 The draft GIR (Jacobs, 2024b) provides a geotechnical evaluation of the proposed scheme in accordance with the requirements of Section 6 of Eurocode 7: Geotechnical Design - Part 2 ([BS EN 1977-2:2007](#)) (BSI, 2010) and where applicable Technical Memorandum SH4/89 (Scottish Development Department Roads Directorate, 1990) and Design Manual for Roads and Bridges (DMRB), [CD 622](#) Managing geotechnical risk (Design Manual for Roads and Bridges, 2020). The draft GIR (Jacobs, 2024b) is supported by the draft GeAR (Jacobs, 2024a) which provides a full evaluation of the information pertaining to land contamination obtained from desk study sources as well as the GI.
- 1.1.9 All information sources are listed within Chapter 13: Geology, Soils, Groundwater and Land Contamination.

1.2 Preliminary CSM

- 1.2.1 The Preliminary CSM was developed as part of the (Scott Wilson, 2011) (Jacobs, 2013a) (Jacobs, 2013b). It is important to note that the preferred route alignment was not known at the time of the preparation of the PSSRs and hence the preliminary CSM was based on the assumption that the final alignment of the dualled A9 would be within the locality of the existing A9 carriageway. Noting the residual uncertainty regarding the route alignment, the PSSRs adopted a conservative approach and focussed on the identification of potential sources of contamination within a wider area (noted as within 500m of the existing A9 route corridor for the Jacobs PSSRs with no equivalent definition provided for the Scott Wilson PSSR) that may be significant or interact with the proposed A9 Dualling works and warrant targeted investigation.
- 1.2.2 A screening exercise was conducted to discount potential sources of land contamination considered to be of negligible risk to the overall scheme based on proximity and contamination potential. The screening assessment resulted in the identification of four potentially significant sources of soil, groundwater and ground gas contamination on-site (within the footprint area of the A9 alignment) with a further eight potential sources located off-site (as recorded within the immediate or wider vicinity of the A9 alignment or within 500m of the existing A9 corridor). Full details of the Preliminary CSM are included in Appendix B of the draft GeAR (Jacobs, 2024a).

- 1.2.3 The PSSRs identified a total of four potentially contaminative sources considered to be on-site, including the Highland Railway Line, General Wades Military Road (the former A9), a gravel pit and the existing A9 trunk road including connecting roads pavement/ embankment construction.
- 1.2.4 The PSSRs then identified a further eight potentially contaminative sources off-site that may have indirectly contributed to contaminants within the A9 corridor. These sources include a former hospital, gas works/gasometer, coach works/smithy, former quarries, former gravel pits, sewage treatment works, a landfill, a sawmill and petrol stations.
- 1.2.5 Viable pollutant pathways were identified for human health receptors (construction workers, adjacent residents/workforce, maintenance and landscape workers and future site users (Road Users)), water environment receptors (surface water, groundwater within superficial deposits and bedrock groundwater), property (livestock and buildings and services) and ecological receptors (environmentally sensitive areas).
- 1.2.6 The GI was undertaken to address the uncertainties identified within the preliminary CSM.

1.3 Ground Investigation Data

- 1.3.1 As noted in the Chapter 13 (Geology, Soils, Groundwater and Land Contamination), eight phases of GI were designed and overseen by both Jacobs and AECOM, on behalf of Transport Scotland. There is an overlap between the Pass of Birnam to Tay Crossing and the Tay Crossing to Ballinluig GI (as noted in the draft GIR (Jacobs, 2024b)). The exploratory positions north of the Tay Crossing were undertaken as part of the Project 3 (P03) Tay Crossing to Ballinluig GI Contracts. The GIs were conducted in accordance with the following:
- Eurocode 7, Geotechnical Design, Part 2, Ground Investigation and Testing - BS EN 199702:2007 (BSI, 2010);
 - CD 622 Managing Geotechnical Risk Revision 1 (Design Manual For Roads and Bridges, 2020)
 - Investigation of Potentially Contaminated Sites, BS 10175:2011 + A2:2017 (BSI, 2017)
- 1.3.2 Further details are provided in the factual reports as summarised in Table A13.1-1 below. The exploratory hole locations from the various stages of ground investigation are shown on Figures 13-1.1a-1k.

Table A13.1-1: Summary of Ground Investigations

GI Phase	Year *	Contractor	Contractors Project Code	Reference
P2 (Aecom GI)	2014-2015	Soil Engineering	TA7397	(Soil Engineering Geoservices Limited, 2015)
P2 Advanced	2015	Fugro	G151043UA	(Fugro Engineering Services, 2016-A)

GI Phase	Year *	Contractor	Contractors Project Code	Reference
P3 Advanced	2015	Fugro	G151043UB	(Fugro Engineering Services, 2016-B)
P3 Prelim GI-Phase 1	2016	Fugro	G161021UA	(Fugro Engineering Services, 2018)
P3 Detailed Phase 1	2018	Fugro	G181001U	(Fugro Engineering Services, 2016-A)
P2 Birnam Additional Holes	2019	Soil Engineering	TC8191A	(Soil Engineering Geoservices Limited, 2019)
P3 Supplementary GI	2019	Soil Engineering	TC8191	(Soil Engineering Geoservices Limited, 2021)
P2 Supplementary GI	2020	Soil Engineering	TE8258	(Soil Engineering Geoservices Limited, 2023)
* Date the GI works were undertaken				

1.4 Interpretation of Geo-chemical and Ground Gas Data

1.4.1 The full interpretation of the available geo-chemical and ground gas data is provided in the draft GeAR (Jacobs, 2024a). The interpretation involved the screening of geo-chemical and ground gas data against published generic assessment criteria (GAC) to ascertain the contamination potential for the identified potential land contamination sources with respect to human health and Water Environment receptors.

Human Health Generic Assessment Criteria Adopted

1.4.2 For human health, geo-chemical results for soil samples were screened against the following GAC hierarchy suitable for residential without plant uptake and public open space land use scenarios (based on a soil organic matter concentration of 1% to provide the most conservative approach):

- SoBRA Acute Generic Assessment Criteria ([SoBRA AGAC](#)) (Society of Brownfield Risk Assessment, 2020);
- Suitable for Use Limits (S4ULs) (LQM/CIEH, 2015);
- Category 4 Screening Levels (C4SL) (Department for Environment, Food and Rural Affairs, 2014); and
- EIC/AGS/CL:AIRE assessment criteria (EIC/AGS/CL:AIRE, 2010).

1.4.3 Geo-chemical results for soil leachate and groundwater samples were screened against Resource Protection Values (RPV), presented in SEPA's Position Statement ([WAT-PS-10-01](#)) Assigning Groundwater Assessment Criteria for Pollutant Inputs (SEPA, 2014).

- 1.4.4 As no buildings or subsurface structures are included within the current design, an assessment of the ground gas risks in accordance with CIRIA C665 (CIRIA, 2007) has not been undertaken. To assess potential risks posed to construction workers during below ground works the monitoring results were screened against the following criteria:
- Methane: methane has explosive potential in air, and concentrations have been compared to the Lower Explosive Limit (LEL) of methane concentrations in air which equates to 5 % volume per volume (v/v) and a typical safety threshold value which equates to 20 % of the LEL (1 % v/v) (CIRIA, 2007);
 - Carbon dioxide, carbon monoxide and hydrogen sulphide: Workplace Exposure Limits (WELs) for long-term and short-term exposure in accordance with Health and Safety Executive (HSE), presented in [EH40/2005 Workplace Exposure Limits](#) (Health and Safety Executive, 2020a) and;
 - Oxygen: concentrations of oxygen have been compared to the [Mines Regulations 2014](#) (Health and Safety Executive, 2020b) threshold value of 19 % v/v to define if a sufficiency in oxygen would be provided by the concentrations observed. The act states that where concentrations of oxygen fall below 19 % v/v then a sufficiency of oxygen would not be provided.

Water Environment and Ecological Generic Assessment Criteria Adopted

- 1.4.5 For groundwater receptors, assessment criteria are based on the RPVs presented in SEPA guidance document WAT-PS-10-01 (SEPA, 2014). The RPVs have been compared with groundwater and leachability data (BS EN 12457 2:1 L/S ratio leachability analysis results). It should be noted that the leachability preparation involves agitation of soil in solution that is considered more aggressive than leaching processes in the natural environment, and therefore the results gained are considered conservative.
- 1.4.6 To indicate potential risks to surface water receptors from soil leaching and impacted groundwater, groundwater and leachability data (BS EN 12457 2:1 L/S ratio leachability analysis results) have been compared with SEPA's published Environmental Quality Standards (EQS) [WAT-SG-53](#), for discharges to Surface Waters (SEPA, 2020). Given that EQS are primarily derived to be afford protection to the aquatic ecological systems within the surface waters, this screening is also applicable to the assessment of risks to the Environmentally Sensitive Areas included those to ecological receptors associated with the River Tay SAC.

Summary of Geo-chemical and Ground Gas Interpretation Findings

- 1.4.7 A summary of the findings from the initial screening of the geo-chemical and ground gas data is provided in Annex B with respect to identified potential sources of land contamination. The locations of the GI exploratory holes where exceedances of the respective GAC were recorded are shown on Figures 13-1.2a-2d, 13-1.3a-3d, 13-1.4a-4d, 13-1.5a-5d and 13-1.6a-6d. The full interpretation is provided in the draft GeAR (Jacobs, 2024a) with screening tables provided in Annex C.

1.5 Updated Conceptual Site Model

- 1.5.1 As previously noted in this Appendix and the draft GeAR (Jacobs, 2024a), the preliminary CSM developed during preparation of the PSSR was based on the provisional route corridor under consideration at the time of reporting. As the route was not confirmed, the PSSR focused on the potential sources of contamination within the locality of the existing A9 route corridor that may warrant consideration. The potential receptors and pathways for any contamination source were also identified however it was not considered appropriate to complete a full environmental risk assessment following the methodology set out in CIRIA C552 at the PSSR stage due to uncertainty regarding interaction with the scheme.
- 1.5.2 The findings from the Preliminary CSM have been reviewed and refined to reflect any changes to the Scheme design following the selection of the preferred scheme option and the findings from the GIs.

Study Area Definition

- 1.5.3 The study area for the Scheme design is aligned to that defined by Chapter 13 (Geology, Soils, Groundwater and Land Contamination). For the purposes of the updated conceptual site model, sources, pathways and receptors within the indicative footprint are defined as 'on-site' whereas those outside the indicative footprint but within the 250m study area are defined as 'off-site'. The indicative footprint includes land required for the proposed scheme and any additional areas that are likely/expected to be required for construction. The inclusion of a 250m buffer is based on the guidance for the Safe Development of Housing on Land Affected by Contamination (National House Building Council (NHBC) and Environment Agency and the Chartered Institute of Environmental Health (CIEH), 2008). This study area is a conservative, but a sensible approach in the context of the proposed scheme, taking into account the distance over which contamination can migrate.

Potential Sources of Contamination

- 1.5.4 The potential sources of land contamination have been identified and screened (following the methodology set out in Appendix C of the draft GeAR (Jacobs, 2024a)) to determine their relevance to the proposed scheme. The screening matrix presented in the draft GeAR is a comparison of the predicted contamination potential (based on historical land use type and industry established knowledge on contamination levels) against the likelihood of influence (disturbance due to the proposed scheme). Where the relevance of source impact has been determined 'low' or greater, the source has been considered as a potential source of contamination within this assessment. This screening exercise allows the land contamination assessment to focus on sources with potential for significant effects resulting from the proposed scheme.
- 1.5.5 A summary of the information on each of these potential sources of land contamination is provided in Annex A including the initial screening of available GI data against relevant published assessment criteria as detailed in the previous sections.

Potential Receptors and Pathways

- 1.5.6 Potential receptors identified within the PSSR are still relevant when considering the EIAR as they are influenced by the development proposal; a highway with associated infrastructure and drainage. Without prejudice to the ground investigation data, the identified potential receptors (R1-R10) and associated contaminant pathways to be considered further in the assessments are described below. A summary of each potential Pollutant Linkage (PL) identified based on the legal definitions used in [Part IIA of the Environmental Protection Act 1990](#), as provided in statutory guidance (Scottish Executive, 2006) is provided in Table A13.1-2.

Human Health Receptors

- R1. Construction Workers - On-site workers taking part in the construction activities including general earthworks and construction works. During construction, workers may be exposed to subsurface soils and shallow groundwater in the short term (3 years), therefore contaminants within exposed soils and groundwater may pose a risk through dermal contact, ingestion or inhalation of dust, vapours and ground gas. There is also potential for short term exposure of construction workers to potentially contaminated stockpiled arisings from depth.
- R2. Adjacent Residents/Workforce - Off-site receptors are those people living or working close to the site or using the area for recreational activities such as walking, cycling, fishing etc. Local residents and workers could be exposed to wind-blown dust/fibres and vapours and ground gas during construction works. Whilst the nearest commercial and residential properties are located approximately 100 m north of the proposed carriageway it is anticipated that measures taken to protect the construction workers e.g. management of dust generation will also manage the risks to the adjacent residents and workers.
- R3. Maintenance and Landscape Workers - On-site post construction, maintenance workers may be required to undertake below ground works, such as attending to services. Workers may be exposed to soils and groundwater may pose a risk through dermal contact, ingestion or inhalation of dust, vapours and ground gas.
- R4. Future Site Users (Road Users) and Adjacent Residents (post construction) - On-Site post construction, whilst future road users are unlikely to be affected due to the short residence time in the area and the presence of hardstanding/ carriageway across large proportions of the site area, people using parking/ leisure landscaped areas could theoretically be exposed to soil where unvegetated via ingestion, inhalation or dermal contact. Off-site post construction receptors (refer to R2) could also theoretically be exposed to wind-blown dust/fibres from unvegetated on-site soils. It is however anticipated that measures taken to manage risks to on-site receptors will also manage the risks off site receptors hence these receptors have been assessed together for on-site sources.

Water Environment Receptors

- R5. Surface Water - there are several watercourses along the route which may be affected via leaching of contaminants and transport via shallow groundwater. Surface watercourses within close proximity (50 m) of the preferred route corridor will be particularly sensitive to surface water and sediment run off from the road both during and post construction. Surface water courses could also be impacted via direct discharge from site drainage systems during construction and operation which is considered separately under Chapter 19 (Road Drainage and the Water Environment). The potential for shallow groundwater to intercept and ingress into utility services/ surface water drainage trenches leading to preferential/direct pathways for discharge to surface watercourses has been discounted on the basis that all drainage runs are to be carrier drains or lined.
- R6. Groundwater within Superficial Deposits - Any groundwater present within the Made Ground is likely to be laterally discontinuous and locally perched where the underlying natural superficial deposits are more cohesive. Groundwater within the Made Ground is not classified as an aquifer but may influence or form part of the aquifer within the permeable superficial deposits in certain areas. In accordance with the SEPA WAT-PS-10-01 guidance, groundwater within superficial deposits is considered to constitute a groundwater body and therefore a receptor if it has a groundwater resource potential, i.e. is capable of supporting an abstraction of 10m³/d or more. Based on the information reviewed it is considered likely that this abstraction may be achieved and so would be considered as a receptor. Groundwater may be impacted by the migration of waters impacted by contamination sources within the site boundary either via leaching or the dissolution of free phase hydrocarbons. The superficial aquifers may also act as a pathway for migration of contaminants to bedrock aquifers or to nearby surface water. Subject to the selected methodologies and construction techniques, there is the potential for any piling or deep excavations or unlined utility services/ surface water drainage trenches to create preferential pathways to, and/ or directly drive any contaminated surface soil into, the superficial aquifers and depth.
- R7. Bedrock Groundwater - The bedrock beneath the site could be affected by leaching of contaminants and vertical migration. In accordance with the SEPA WAT-PS-10-01 guidance, all bedrock groundwater is considered to have resource potential and hence is considered a receptor. Groundwater may be impacted by the migration of waters impacted by contamination sources within the site boundary either via leaching or the dissolution of free phase hydrocarbons to the bedrock groundwater at depth where the pathway is not impeded by the presence of cohesive strata acting as a hydraulic barrier or aquitard between the superficial deposits and bedrock. Subject to the selected methodologies and construction techniques, there is the potential for any piling or deep excavations to create preferential pathways to, and/ or directly drive any contaminated surface soil into, the bedrock aquifer at depth.

Property Receptors

- R8. Livestock - Surrounding agricultural areas could be exposed to windblown dusts and fibres generated by construction works. These could potentially expose livestock to risks associated with dermal contact, ingestion or inhalation of dust. Whilst the route alignment is subject to relatively active agricultural land usage, it is anticipated that measure taken to protect the Construction workers e.g. management of dust generation will also manage the risks to Livestock. The road construction and landscaping design is likely to break this pathway post construction.
- R9. Buildings and Services - Buried concrete (including piling) and water supply pipes could be affected by direct contact with aggressive ground conditions/chemical attack on susceptible materials. Buildings/structures and services could theoretically be at risk of explosion through ground gas accumulation in confined spaces. Any road drainage infrastructure installed will be susceptible to the infiltration of potentially contaminated groundwaters, carriageway surface water and associated sediments following construction. An assessment of risks from land contamination to structures, drainage systems and services will be required once the route alignment and design are sufficiently developed.

Ecological Receptors

- R10. Environmentally Sensitive Areas - The River Tay SAC and its associated ecological system is adjacent to the route. The ecological receptors within the SAC could be affected by changes to surface water quality impacted via the leaching and transportation of contaminants from soil via shallow groundwater flow which discharges into, or contributes to, baseflow within the River Tay and other watercourses. Ecological receptors within surface watercourses in close proximity (<50 m) of the preferred route corridor will be particularly sensitive to changes in surface water quality and sediment run off from the road both during and post construction. Surface water quality could also be impacted via direct discharge from site drainage systems during construction and operation which is considered separately under Chapter 19 (Road Drainage and the Water Environment). There is however, the potential for any unlined utility services/ surface water drainage trenches to intercept shallow groundwater and hence create preferential/direct pathways for discharge via the drainage network leading to potential impacts to surface water quality.

Table A13.1-2: Potential Pollutant linkages

Potential Pollutant Linkage (PL)	Receptor	Pathway
Construction		
PL1	Human Health – Construction Workers (R1)	Dermal contact, ingestion and inhalation (P1)
PL2		Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc.

Potential Pollutant Linkage (PL)	Receptor	Pathway
		and accumulation of explosive or asphyxiating concentrations (P7)
PL3		Dermal contact, ingestion and inhalation of groundwater migrating onto site (P9)
PL4		Dermal contact, ingestion and inhalation (P1)
PL5	Human Health – Adjacent Residents / Workforce (R2)	Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations (P7)
PL6	Water Environment – Surface Water (R5) & Ecological – Environmentally Sensitive Areas (R10) ^[1]	Leaching of contaminants and lateral migration with groundwater flow to surface waters (P3)
PL7		
PL8	Water Environment – Groundwater within Superficial Deposits (R6)	Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow (P2)
PL9	Water Environment – Bedrock Groundwater (R7)	Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow (P2)
PL10	Property – Livestock (R8) ^[2]	Dermal contact, ingestion and inhalation (P1)
PL11	Property – Buried concrete and services (R9)	Direct Contact (chemical attack) (P4)
PL12	Property – Buildings and Structures (R9)	Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations (P7)
PL13	Water Environment – Groundwater within Superficial Deposits (R6) & Bedrock Groundwater (R7)	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)
Operation		
PL14	Human Health – Maintenance and	Dermal contact, ingestion and inhalation (P1)

Potential Pollutant Linkage (PL)	Receptor	Pathway
PL15	Landscape Workers (R3)	Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations (P7)
PL16		Dermal contact, ingestion and inhalation of groundwater migrating onto site (P9)
PL17		Dermal contact, ingestion and inhalation (P1)
PL18	Human Health – Future Site Users (Road Users) and Adjacent Residents (R4)	Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations (P7)
PL19	Water Environment – Surface Water (R5) & Ecological – Environmentally Sensitive Areas (R10) ^[1]	Leaching of contaminants and lateral migration with groundwater flow to surface waters (P3)
PL20		
PL21	Water Environment – Groundwater within Superficial Deposits (R6)	Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow (P2)
PL22	Water Environment – Bedrock Groundwater (R7)	Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow (P2)
PL23	Property – Livestock (R8) ^[2]	Dermal contact, ingestion and inhalation (P1)
PL24	Property – Buried concrete and services (R9)	Direct Contact (chemical attack) (P4)
PL25	Property – Buildings and Structures (R9)	Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations (P7)
PL26	Water Environment – Groundwater within Superficial Deposits (R6) & Bedrock Groundwater (R7)	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)

Potential Pollutant Linkage (PL)	Receptor	Pathway
<p>[1] It is notable that the ecological receptor pathways and assessment method using EQS is therefore the same as those to the surface water receptor. These pathways have therefore been assessed together in the generic risk assessment for brevity.</p> <p>[2] Following review of current land use in the study area, it is unlikely livestock will be present within the study area and therefore livestock has not been assessed in the CSM given there is no pathway present.</p>		

1.6 Generic Qualitative Risk Assessment

- 1.6.1 The CSM for the proposed scheme has been updated based on the potential contamination sources identified in Annex A and the potential pollutant linkages outlined in Table A13.1-2. The updated CSM in this document therefore represents an outline of potential pollutant linkages that may be present between sources of contamination, pathways by which they may move and ultimately, affected receptors during construction or operation of the proposed scheme. If any element of a linkage (contaminant, pathway or receptor) is missing, the linkage cannot pose a risk and is not considered as a potential contamination risk for the proposed scheme.
- 1.6.2 In order to establish the level of potential risk that may be present, the guidance set out within CIRIA C552 'Contaminated Land Risk Assessment: A Guide to Good Practice' (CIRIA, 2001) and Land Contamination: Risk Management (LCRM) (Environment Agency, 2023) has been followed. These state that the designation of risk should be based on:
- The likelihood of the risk being present - cognisant of the presence of a source and receptor, and the integrity of the pathway, versus
 - The severity of the potential consequence should the risk be realised - taking into account the severity of the source, the sensitivity of the receptor and the duration of potential effects where appropriate.
- 1.6.3 The output of the assessment is therefore reported as the 'likelihood' of a complete pollutant linkage being present the 'consequence' of effect on likely receptors, followed by an evaluation of risk, taking into account of both likelihood and consequence, as defined in Table A13.1-3, Table A13.1-4 and Table A13.1-5 respectively. The updated CSM and evaluation of risk is presented in full in Annex B and summarised in Table A13.1-6 for during the construction works and in Table A13.7 for the operational phase.

Table A13.1-3: Likelihood Criteria for Assessment of Land Contamination

Likelihood	Definition
High Likelihood	There is a complete pollution linkage of an event that either appears very likely in the short term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is a complete pollution linkage, and all the elements are present and available, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over a long-term.
Low Likelihood	There is a complete pollution linkage, and the circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the shorter term.
Unlikely	There is a complete pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.

Table A13.1-4: Consequence Criteria for Assessment of Land Contamination

Consequence	Definition
Severe	Short-term (acute) damage to human health (significant harm). Pollution of sensitive water resources as a result of short-term exposure. Damage to a particular ecosystem as a result of acute exposure. Catastrophic damage to buildings/property.
Medium	Long-term (chronic) damage to human health (significant harm). Pollution of sensitive water resources as a result of chronic exposure. A significant change in a particular ecosystem, or organism forming part of such an ecosystem.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment.
Minor	Harm (not necessarily significant), which may result in financial loss or require expenditure to resolve. Non-permanent health affects to human health. Easily reparable damage to buildings, structures and services.

Table A13.1-5: Evaluation of Risk for Assessment of Land Contamination

Consequence	Likelihood			
	Unlikely	Low Likelihood	Likely	High Likelihood
Severe	Moderate/Low	Moderate	High	Very High
Medium	Low	Moderate/Low	Moderate	High
Mild	Very Low	Low	Moderate/Low	Moderate
Minor	Very Low	Very Low	Low	Moderate/Low

NB: where risk is between two impacts professional judgement has been used to assign the most appropriate determination and a justification provided.

Table A13.1-6: Summarised CSM and Generic Qualitative Risk Assessment (During Construction)

On-site Sources											
Source	Soil and associated groundwater contamination associated with made ground in embankments, road structure and general fill material (either in-situ or re-used)									Ground gas and vapours within made ground in embankments, road structure and general fill	
Receptor	R1	R2	R5 & R10	R6	R7	R8	R9	R6 & R7	R1	R2	R9
Pathway	P1	P1	P3	P2	P2	P1	P4	P10	P7	P7	P7
Pollutant Linkage Ref.	PL1	PL4	PL6 & PL7	PL8	PL9	PL10	PL110	PL13	PL2	PL5	PL12
PBTC-C1 – Existing A9	Moderate/Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
PBTC-C2 – Highland Main Line Railway	Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate/Low	Moderate/Low	No pathway
PBTC-C11 – Curling Pond	Moderate/Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
PBTC-C15 – Gravel Pit	Moderate/Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
PBTC-C29 – Underground Storage Tank	Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
PBTC-C49 – Depot and Storage Tank	Moderate/Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
PBTC-C52 – General Made Ground	Moderate/Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	Moderate/Low	No pathway
Off-site Sources											
Source	Soil and associated groundwater contamination associated with former land use						Ground gas and vapours associated with former land use				
Receptor	R1						R1				
Pathway	P9						P7				
Pollutant Linkage Ref.	PL3						PL2				
PBTC-C3 – Storage Tank	Low						Moderate/ Low				
PBTC-C8 – Ringwood Sawmill	Low						Moderate/ Low				
PBTC-C10 – Old Quarry	Low						Moderate/ Low				
PBTC-C12 – Dunkeld Wastewater Treatment Works	Low						Moderate/ Low				
PBTC-C13 – Gas Works	Low						Moderate/ Low				
PBTC-C14 – Youngs Garage/Fuel Station	Low						Moderate/ Low				
PBTC-C18 - Smithy	Low						Moderate				
PBTC-C22 – Ladywell Landfill	Low						Moderate				
PBTC-C53 - General Made Ground/ Engineering Fill	Low						Moderate				
PBTC-C58 – Washbay Interceptor	Low						Moderate/ Low				

Table A13.1-7: Summarised CSM and Generic Qualitative Risk Assessment (During Operation)

On-site Sources											
Source	Soil and associated groundwater contamination associated with made ground in embankments, road structure and general fill material (either in-situ or re-used)								Ground gas and vapours within made ground in embankments, road structure and general fill		
Receptor	R3	R4	R5 & R10	R6	R7	R8	R9	R6 & R7	R3	R4	R9
Pathway	P1	P1	P3	P2	P2	P1	P4	P10	P7	P7	P7
Pollutant Linkage Ref.	PL14	PL17	PL19	PL21	PL22	PL23	PL24	PL26	PL15	PL18	PL25
PBTC-C1 – Existing A9	Moderate/ Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
PBTC-C2 – Highland Main Line Railway	Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate/ Low	No pathway	No pathway
PBTC-C11 – Curling Pond	Moderate/ Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
PBTC-C15 – Gravel Pit	Moderate/ Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
PBTC-C29 – Underground Storage Tank	Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
PBTC-C49 – Depot and Storage Tank	Moderate/ Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
PBTC-C52 – General Made Ground	Moderate/ Low	Low	Low	Low	Low	No pathway	Very Low	Low	Moderate	No pathway	No pathway
Off-site Sources											
Source	Soil and associated groundwater contamination associated with former land use					Ground gas and vapours associated with former land use					
Receptor	R3					R3		R4		R9	
Pathway	P9					P7		P7		P7	
Pollutant Linkage Ref.	PL16					PL15		PL18		PL21	
PBTC-C3 – Storage Tank	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C8 – Ringwood Sawmill	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C10 – Old Quarry	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C12 – Dunkeld Wastewater Treatment Works	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C13 – Gas Works	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C14 – Youngs Garage/Fuel Station	Low					Moderate/ Low		No pathway		No pathway	
PBTC-C18 - Smithy	Low					Moderate		No pathway		No pathway	
PBTC-C22 – Ladywell Landfill	Low					Moderate		No pathway		No pathway	
PBTC-C53 - General Made Ground/ Engineering Fill	Low					Moderate		No pathway		No pathway	
PBTC-C58 – Washbay Interceptor	Low					Moderate/ Low		No pathway		No pathway	

1.7 Summary of Findings

- 1.7.1 The seven on-site and ten off-site sources identified have been assessed as having contamination potential. Potential land contamination sources within proximity to the route alignment were targeted as part of the ground investigation.
- 1.7.2 The ground investigation and monitoring undertaken to date has enabled the refinement of the Preliminary CSM and is presented in the Updated CSM (Annex B). A number of exceedances of public open space and residential soil GACs were recorded for total petroleum hydrocarbons (TPH) and Polycyclic aromatic hydrocarbons (PAH). A limited number of samples (15 no.) recorded PAH concentrations above the commercial GACs. Arsenic and lead concentrations were only recorded above their respective residential GACs on one and two instances respectively. A limited number of groundwater samples also exceeded the relevant groundwater GAC for human health, surface waters and ecological receptors were recorded for metals, inorganics, organics and PAH however the spatial distribution and correlation with soil leachability within the study area did not suggest a notable pattern or an association to a particular source.
- 1.7.3 Ground gas monitoring was undertaken from monitoring wells across the route with reported concentrations locally exceeding acute criteria for the protective of human health/ the workforce for carbon dioxide and carbon monoxide. Depleted oxygen levels were also recorded below relevant threshold criteria.
- 1.7.4 A full assessment of the geo-chemical laboratory testing and monitoring data is included within the draft GeAR (Jacobs, 2024a) and presented in Annex C.
- 1.7.5 The potential risks to each receptor type are summarised in turn below.

Human Health

Construction - On-site

- 1.7.6 Disturbance of sub-surface material will be required during construction of the scheme, which have the potential to expose construction workers to contaminants via dermal contact, ingestion and inhalation pathways. These risks have been assessed as moderate/ low.
- 1.7.7 Some elements of the scheme will also involve excavation below groundwater levels, in addition to which local minor perched groundwater bodies may be present, may present a potentially unacceptable risk to construction workers via dermal contact and ingestion. These risks have been assessed as moderate/ low to low.
- 1.7.8 Enclosed excavations below ground surface have the potential to create poorly ventilated confined spaces within which potentially asphyxiating concentrations of ground gas could accumulate and pose for a risk to construction workers. Given the acute risks of asphyxiation or explosion from ground gases, the associated risk has been assessed as moderate to moderate/ low.

Construction - Off-site

- 1.7.9 There is a risk of mobilising contaminants via release of windblown dust during construction works which could affect off-site receptors such as local residents, nearby workers and recreational open space users. Off-site risks have been assessed as low.
- 1.7.10 The proposed scheme is not expected to significantly change the existing ground gas regime and as such no pathway was identified.

Operation - On-site

- 1.7.11 Maintenance workers may still come into contact with the sub-surface soils or groundwater during maintenance operations resulting in potential exposure to any residual contamination via dermal contact, inhalation and ingestion. Although, the proposed scheme does not include buildings a risk remains regarding potential for ground gas accumulation in enclosed spaces such as service ducts or manholes/drainage runs which may pose a risk of explosion or asphyxiation. Risks to maintenance workers from soil and groundwater have been assessed moderate/ low, whilst risks from ground gas in service ducts/ excavations have been assessed as moderate to moderate/ low.
- 1.7.12 Post-development the proposed scheme will comprise the A9 dual carriageway, associated access roads/ merge and diverge roads and some areas of soft landscaping. The general public will be restricted to pavements and road lay-bys where contact with soils will be limited by the presence of hard standing, with little access to areas of soft landscaping adjacent to the road. These risks have been assessed as low.

Operation - Off-site

- 1.7.13 There is a small risk dust generation from on-site soils that are not adequately capped or bound. This risks to off-site receptors from dust has been assessed as low.
- 1.7.14 The proposed scheme is not expected to significantly change the existing ground gas regime and as such no pathway was identified.

Water Environment and associated Ecological Receptors

- 1.7.15 Construction and operation could impact on Water Environment and associated aquatic ecological receptors through the creation of new preferential pathways and/or may introduce new potential pollutant linkages such as the leaching/migration/runoff from stockpiled excavated contaminated pathways.

Surface Water and associated Ecological Receptors - Construction and Operation

- 1.7.16 The surface waters within the study area are sensitive and include the River Tay which is an SAC and also considered as an ecological receptor due to this designation. Surface water features are expected to have a groundwater baseflow component and groundwater may be a contributor to river flooding mechanisms. During construction, if direct disturbance to a potential contamination source occurs then there may be temporary contaminant loading to surface waters.. The potential for shallow groundwater to intercept and ingress into utility services/ surface water drainage trenches leading to preferential/direct pathways for discharge to surface watercourses has been discounted on the basis that all drainage runs are to be carrier drains or lined.

Superficial Groundwater - Construction and Operation

- 1.7.17 Some mobilisation of contaminants may occur during construction (due to potential source disturbance from excavation or piling) which may temporarily increase contaminant loading to the shallow groundwater. Little long-term effect on contaminant migration is expected over the majority of the scheme, however, piling has the potential to introduce long term preferential migration pathways for contaminants to shallow groundwater. Hard standing is likely to reduce rainfall and associated leaching from infiltration. The risk to superficial groundwater has been assessed as low.

Bedrock Groundwater - Construction and Operation

- 1.7.18 Depth to bedrock is variable across the proposed scheme. Works associated with the proposed scheme including excavations, piling and any additional contaminant loading from disturbance of potential land contamination sources have the potential to introduce preferential migration pathways for contaminants. There is the possibility of short term and/ or long term changes to bedrock groundwater quality/flow The risk to bedrock groundwater has been assessed as low.

Property

- 1.7.19 No buildings are part of the proposed scheme. The proposed scheme is not expected to significantly change the existing ground gas regime and as such no pathway was identified.
- 1.7.20 There is potential for chemical attack via direct contact for new on-site infrastructure from existing contaminants within the surrounding soil and groundwater. The risks to buried concrete and infrastructure from aggressive ground conditions have been assessed as low.

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Annex A: Potential Sources of Land Contamination

A summary of potential sources of land contamination assessed in the Updated CSM is provided in Table A13.1-8. A review and rationalisation of potential land contamination sources relevant to the proposed route is presented within the draft GeAR (Jacobs, 2024a). This assessment includes all potential sources of land contamination identified in the PSSRs and Stage 2 DMRB Scheme Assessment Report and details the screening exercise used to determine the potentially significant sources assessed in the Updated CSM. Additionally, a full summary of GI information relating to geo-chemical laboratory data and monitoring attributed to each source is provided in the GeAR (Jacobs, 2024a).

Table A13.1-8: Potential Land Contamination Sources

Source ID	Historical Land Use/ Source	Source of Information	Distance from Existing A9	Review of Desk Study and GI Data
On-site sources				
PBTC-C1	Existing A9	OS map	0 m, Full length	The existing A9 was constructed in 1973 and is still present in the study area. Potential contamination from the source is likely associated with areas of embankment constructed from materials of unknown composition. GI information is available for this source and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C2	Highland Main Line railway	OS map	Within 15 m for majority of full length	The Highland Main Line Railway was constructed in 1867 to present and there is potential for made ground to be present associated with areas of embankment as well as potential for contaminants associated with railway use. GI information is available for this source and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C11	Curling Pond	OS map	0 m, ch1950	The curling pond shown was present in the study area from 1867 to 1938 and then as a marsh/salting on the 1977 OS map. In the current mapping available, the pond is located beneath the existing A9 and in a marshy area adjacent to the road. The pond may have been infilled with made ground of unknown composition with associated sources of potential contamination prior to or as part of the existing A9 construction. GI information is available for this source and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C15	Gravel Pit	OS map	0 m, ch2690 to ch2780	The gravel pit was present in the study area from 1867 to 1938. In the current mapping available, the pond is located beneath the existing A9 which was constructed in 1973. The pit may have been infilled with made ground of unknown composition with associated sources of potential contamination prior to the construction of the A9. GI information is available for this source and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C29	Underground Fuel Tank	PKC (Transport Scotland, 2011).	30 m north-east, ch3350	A letter from PKC states that a 500 gallon petrol UST licenced to James Robertson was located within a yard on Station Road, Birnam. The age of the tank is unknown but the tank was to be filled with water in 1969 but this was not confirmed. The most conservative (closest) location on Station Road has been chosen. This source was not directly investigated as part of the ground investigation.
PBTC-C49	Depot and Storage Tank	OS map	15 m south, ch4250	The activities at depot and the contents of tank are unknown, additionally the age of the source is not known. GI information is available for this source and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C52	General Made Ground	Ground Investigation	Various	Made ground was encountered within localised areas across the project area. Made ground with anthropogenic material was encountered to a maximum proven thickness of 4.90mbgl. Typical anthropogenic material recorded includes brick, ash, glass, timber, wood, metal, concrete and tarmac. Evidence of visual and/or olfactory contamination is detailed within the draft GeAR. GI information is available and has been screened within the draft GeAR and the information used for the CSM.
Off-site Sources				
PBTC-C3	Storage Tank	OS map	50 m north, ch450	A storage tank identified in the study area was present from 1977 to 1995 and the contents of tank is unknown. No direct interaction within the expected footprint of the potential land contamination source. This source was not directly investigated as part of the ground investigation.

Source ID	Historical Land Use/ Source	Source of Information	Distance from Existing A9	Review of Desk Study and GI Data
PBTC-C8	Ringwood Sawmill	OS map	240 m south-west, ch1850	Ringwood Sawmill had been operational in the study area from 2006 to the present. This source was not directly investigated as part of the ground investigation.
PBTC-C10	Old Quarry	OS map	200 m south-west, ch2000	The disused quarry was present in the study area from 1886 to 1938 and may be infilled with made ground of unknown composition with associated sources of potential contamination. This source was not directly investigated as part of the ground investigation.
PBTC-C12	Dunkeld Wastewater Treatment Works	OS map	120 m north-east, ch2200	This is an operational wastewater treatment works which has been present in the area from 1983 to the present day. This source was not directly investigated as part of the ground investigation.
PBTC-C13	Gas Works	OS map	120 m north-east, ch2600	Gas works were present in the study area from 1867 to 1901. This source was not directly investigated as part of the ground investigation.
PBTC-C14	Young's Garage/Fuel Station	OS map Envirocheck report	90 m north-east, ch2650	Young's Garage Fuel Station has been present in the study area from 1977 to the present day and is a potential source of hydrocarbons. This source was not directly investigated as part of the ground investigation.
PBTC-C18	Smithy	OS map	40 m north-east, ch3350	The smithy was present in the study area in 1867. This source was not directly investigated as part of the ground investigation.
PBTC-C22	Ladywell Landfill	OS map Envirocheck report	25 m south, ch3450 to ch3800	The Ladywell Landfill is owned and operated by Perth & Kinross Council. The landfill has been present in the study area since 1867 and has been marked as disused since 1983. It is a small to medium (10,000 to 75,000 tonnes per year) licenced landfill for construction/industrial, household and commercial, industrial non-hazardous wastes and old vehicles and machinery. SEPA indicated that this site holds a waste management licence (WML/E/20050). GI information is available for this source and has been screened within the GeAR and the information used for the CSM.
PBTC-C53	General Made Ground/Engineering Fill	Ground Investigation	Various	Made ground was encountered within localised areas across the project area. Made ground with anthropogenic material was encountered to a maximum proven thickness of 4.90mbgl. Typical anthropogenic material recorded includes brick, ash, glass, timber, wood, metal, concrete and tarmac. Evidence of visual and/or olfactory contamination is detailed within the draft GeAR. GI information is available and has been screened within the draft GeAR and the information used for the CSM.
PBTC-C58	Washbay Interceptor	Landowner consultation	81m south, ch4750	Landowner consultation indicated washbay present. No direct interaction within the expected footprint of the potential land contamination source. This source was not directly investigated as part of the ground investigation.

Annex B: Updated CSM and Risk Assessment

As described in the draft GeAR (Jacobs, 2024a), the CSM has been updated following review of GI data and monitoring data. The updated CSM and risk assessment is presented in Table A13.1-9.

Table A13.1-9: Updated CSM and Risk Assessment

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
On-site Sources							
PBTC-C1 – Existing A9	Soil and associated groundwater contamination associated with made ground in embankments, road structure and 'general' fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	<p>Low: There is some potential for direct contact with contaminants within the soil. Exceedances of the conservative residential without plant uptake generic assessment criteria were recorded in 13 samples across 10 locations within the source footprint. These exceedances were exclusively in TPHs and PAHs and are thought to be due to many of these samples containing tarmacadam and/or bituminous material within made ground. It is likely the impact to human health from the above contaminants will be low given their primary association with bound asphalt materials.</p> <p>Exceedances of the RPV were also noted in GW samples across 17 samples from 15 locations in determinands including metals, inorganics, PAHs and SVOC. Some of these locations repeatedly noted exceedances across multiple monitoring rounds. These are not attributed to a single source and are potentially representative of the baseline site conditions.</p>	Moderate/Low	<p>Exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately.</p> <p>Post construction much of the scheme will be covered by hard standing which will minimise potential for direct contact. Further risk assessment may confirm the absence of risk, however additional mitigation may be required. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction, before undertaking any below ground works to manage the residual risks.</p> <p>Residual risks of exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.</p>
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R2 – Adjacent Residents / Workforce (off-site)				Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
							applied to material to be reused to ensure suitability for use.
		R5 – Surface Water R10 – Environmentally Sensitive Areas	P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow to surface waters.	Pollution of the Water Environment (Medium) Ecological Harm	Unlikely: Exceedances of the EQS were recorded within soil leachate and groundwater analysis results, concentrations within groundwater are generally higher than those recorded within the leachate analysis. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ soils or ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport. There is the potential for leaching of soils to increase during construction phase earthworks and storage activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice.	Low	No specific mitigation measures are proposed for the slightly elevated background concentrations evident across much of the route. Where site-won material is to be reused within the scheme re-use criteria focusing on the leaching and risks to the water environment particularly where materials are to be reused in close proximity to surface watercourses should be generated. Appropriate materials handling and storage protocols to be in place during construction to minimised any potential additional leaching of soils during earthworks programme.
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: two samples recorded exceedances of the leachate RPV with 17 groundwater samples recording exceedances. It is considered unlikely that contaminants within the soils would leach from in- situ soils or ex-situ and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 – Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)	Pollution of the Water Environment (Medium)	Unlikely: two samples recorded exceedances of the leachate RPV. Soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment. .	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: 57 locations associated with the source were monitored. No methane was recorded above 20% of the LEL at any relevant borehole. Cabron dioxide was encountered above the long term exposure limit (>0.5% v/v) at 40 locations and short term exposure limit (>1.5% v/v) in 20 locations with the maximum recorded steady state concentrations ranging between 0.1 and 5.3% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 26 locations with the minimum recorded steady state concentrations ranging between 13.4 and 21.6% v/v. Carbon monoxide was recorded above the long term WEL (20ppm) in 3 locations with maximum recoded steady state values ranging between <1 and 91ppm. Hydrogen sulphide was not recorded above the WEL. Flow rates ranged between -11.5 and 5.3 l/hr. The recorded gas concentrations pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					
R2 – Adjacent Residents / Workforce (off-site)		Moderate/Low				Residual risks associated with ground gas can be managed via development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations during construction and operation to protect off-site receptors.	
R4 – Future Site Users (Road Users) and Adjacent Residents		Not Assessed (No Pathway)				If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.	
					No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development's nature as a trunk road.	Not Assessed (No Pathway)	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C2 - Highland Main Line Railway	Soil and associated groundwater contamination associated with made ground in embankments, road structure and 'general' fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	<p>Unlikely: Large parts of the railway are offline, with a few sections where it intersects the main A9 route. Exceedances of the residential without plant uptake GAC were recorded in 13 samples from 6 locations within mainly PAHs, all containing tarmacadam. It is likely the impact to human health from the above contaminants will be low given their primary association with bound asphalt materials.</p> <p>Exceedances of the RPV in groundwater were also recorded at 7 separate locations in Chloride, metals and SVOC. These are not attributed to a single source and are potentially representative of the baseline site conditions. There may be local variations to the assessment as 'unlikely' in places the railway intersects areas of earthworks.</p>	Low	<p>Residual risks to construction & maintenance workers during below ground works can be controlled by development of safe systems of work and the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately.</p> <p>Where risk of disturbance of railway ground exists exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.</p>
		R3 – Maintenance and Landscape Workers				Low	
		R2 – Adjacent Residents / Workforce (off-site)				Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				Low	
		R5 – Surface Water R10 – Environmentally Sensitive Areas	P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow to surface waters.	Pollution of the Water Environment (Medium) Ecological Harm	<p>Unlikely: Exceedances of the EQS were recorded within soil leachate and groundwater analysis results, concentrations within groundwater are generally higher than those recorded within the leachate analysis. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ and ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.</p> <p>There is the potential for leaching of soils to increase during construction phase earthworks and storage</p>	Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
					activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice		
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: One exceedance of the leachate RPV was recorded along with groundwater exceedances recorded across 7 locations in metals, inorganics and SVOC. It is considered unlikely that contaminants within the soils would leach from in- situ soils and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the EQS were recorded within soil leachate however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.
	Ground gas and vapours within Made Ground in embankments,	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction	Explosive/ asphyxiation risk (Severe)	Unlikely: 30 locations associated with the source were monitored. No methane was recorded above 20% of the LEL at any relevant borehole. Carbon dioxide was encountered above the long term WEL (>0.5% v/v) in 19 locations monitored	Moderate/Low	Residual risks associated with ground gas can be managed via development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations during construction and operation to protect
		R3 – Maintenance and Landscape Workers				Moderate/Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures		
	road structure and 'general' fill.		features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.		and above the short term WEL (>1.5% v/v) in 11 locations monitored with the maximum recorded steady state concentrations ranging between 0.1 and 5.4% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 10 locations with the minimum recorded steady state concentrations ranging between 14.8 and 21.8% v/v. Carbon monoxide was recorded above the long term WEL (20ppm) in one locations with maximum recorded steady state value of 57 ppm. Hydrogen sulphide was not recorded above the WEL. Flow rates ranged between -9.9 and 4.8 l/hr. The recorded gas concentrations pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation. There may be local variations to the 'unlikely' assessment at places where the railway intersects areas of earthworks within the scheme.		workers during any below ground works or works in enclosed spaces.		
		R2 – Adjacent Residents / Workforce (off-site)				Unlikely: Site works are unlikely to change the current ground gas regime and cause migration to off-site receptors.		Moderate/Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development's nature as a trunk road.		Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services						Not Assessed (No Pathway)	
PBTC-C11 – Curling Pond	Soil and associated groundwater contamination associated with made ground in embankments, road structure and 'general' fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	Low: No locations recorded any exceedances in soil GACs or groundwater RPV. The source is located within an area of the mainline A9 with associated earthworks. Infill material is likely to be similar to A9 construction materials and there is potential for direct contact. Potential exists for contaminants to be recorded within the site soils outwith the areas investigated.	Moderate/Low	Exposure of construction workers to unrecorded contaminants during below ground works can be controlled by development of safe systems of work and the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately. Post construction, hard standing will effectively break any pollutant linkage with end users. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction, before undertaking any below ground works to manage the residual risks. Risks of exposure of off-site receptors to contaminants during construction works		
		R3 – Maintenance and Landscape Workers				Moderate/Low			
		R2 – Adjacent Residents / Workforce (off-site)				Unlikely: Little potential for direct contact, and minimal risk associated with off-site migration of contaminants.		Low	
		R4 – Future Site Users (Road Users) and				Unlikely: No exceedances of the public open space GAC were recorded. Infill material is likely to be similar to A9 construction materials. Post construction, much of the		Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		Adjacent Residents			scheme will be covered by hard standing which will minimise potential for direct contact.		(stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.
		R5 – Surface Water R10 – Environmentally Sensitive Areas	P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow to surface waters.	Pollution of the Water Environment (Medium) Ecological Harm	Unlikely: Exceedances of the EQS were recorded within soil leachate and groundwater analysis results, concentrations within groundwater are generally higher than those recorded within the leachate analysis. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ and ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport. There is the potential for leaching of soils to increase during construction phase earthworks and storage activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice	Low	Where site-won material is to be reused within the scheme re-use criteria focusing on the leaching and risks to the water environment particularly where materials are to be reused in close proximity to surface watercourses should be generated. Appropriate materials handling and storage protocols to be in place during construction to minimised any potential additional leaching of soils during earthworks programme.
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: No exceedances of the leachate RPV were recorded. It is considered unlikely that contaminants within the soils would leach from in- situ soils and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the EQS were recorded within soil leachate however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: Gas was monitored at 2 nearby boreholes. No methane was recorded above 20% of the LEL. In both locations, carbon dioxide was recorded above the long term WEL (>0.5% v/v) and short term WEL (>1.5% v/v) with a maximum recorded concentration of 3.6% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded in both locations with a minimum recorded concentration of 17.1% v/v. Carbon monoxide and hydrogen sulphide were not recorded above the WEL. Flow rates range between 0.0 to 0.6 l/hr. The recorded gas concentrations pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate	
		R2 – Adjacent Residents / Workforce (off-site)				Moderate/Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				Not Assessed (No Pathway)	
					No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development's nature as a trunk road.		If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C15 – Gravel Pit	Soil and associated groundwater contamination associated with made ground in embankments, road structure and 'general' fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	<p>Low: No nearby locations recorded any exceedances in soil GAC. No groundwater monitoring locations were located within the source footprint or nearby. The source is located within an area of the mainline A9 with associated earthworks. Infill material is likely to be similar to A9 construction materials and there is potential for direct contact.</p> <p>Potential exists for contaminants to be recorded within the site soils outwith the areas investigated.</p>	Moderate/Low	<p>Exposure of construction workers to unrecorded contaminants during below ground works can be controlled by development of safe systems of work and the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately.</p> <p>Post construction, hard standing will effectively break any pollutant linkage with end users. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction, before undertaking any below ground works to manage the residual risks.</p> <p>Risks of exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.</p>
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R2 – Adjacent Residents / Workforce (off-site)				Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				Low	
		R5 – Surface Water R10 – Environmentally Sensitive Areas				P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow to surface waters.	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
					are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice		
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: Two exceedances of the leachate RPV were recorded in lead. It is considered unlikely that contaminants within the soils would leach from in- situ soils and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the EQS were recorded within soil leachate however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e.	Explosive/ asphyxiation risk (Severe)	Low: There was no specific gas monitoring related to this source. It is possible that gas concentrations will pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures	
		R2 – Adjacent Residents / Workforce (off-site)	piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.		Unlikely: Site works are unlikely to change the current ground gas regime and cause migration to off-site receptors.	Moderate/Low	Residual risks associated with ground gas can be managed via development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations during construction and operation to protect off-site receptors.	
		R4 – Future Site Users (Road Users) and Adjacent Residents				No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development’s nature as a trunk road.	Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services					Not Assessed (No Pathway)	
PBTC-C29 – Underground Storage Tank	Soil and associated groundwater contamination associated with made ground in embankments, road structure and ‘general’ fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	Unlikely: The source was not directly investigated and its exact location is unknown. 2 locations within the vicinity of the area believed to contain the tank did not identify any significant contamination. If it is encountered, it will likely be safely removed. There is potential for direct contact.	Low	Further assessment required to locate this source. Exposure of construction workers to unrecorded contaminants during below ground works can be controlled by development of safe systems of work and the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately. Post construction, hard standing will effectively break any pollutant linkage with end users. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction, before undertaking any below ground works to manage the residual risks. Risks of exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.	
		R3 – Maintenance and Landscape Workers				Low		
		R2 – Adjacent Residents / Workforce (off-site)				Low		
		R4 – Future Site Users (Road Users) and Adjacent Residents				Low		
		R5 – Surface Water				P3 - Leaching of contaminants and vertical migration into		Pollution of the Water

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R10 – Environmentally Sensitive Areas	groundwater and lateral migration with groundwater flow to surface waters.	Environment (Medium) Ecological Harm	encountered, it will likely be safely removed. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ and ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport. There is the potential for leaching of soils to increase during construction phase earthworks and storage activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice		to be reused in close proximity to surface watercourses should be generated. Appropriate materials handling and storage protocols to be in place during construction to minimised any potential additional leaching of soils during earthworks programme.
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: The exact location and nature of the tank is unknown and it was not specifically investigated. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ soils and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with	Pollution of the Water Environment (Medium)	Unlikely: The exact location and nature of the tank is unknown and it was not specifically investigated. Soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
			subsequent leaching to/ direct contact with groundwater (P10)		considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.		
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: The source was not directly investigated. The nearby BTB4025 showed several incidences of carbon dioxide above the short term exposure limit (1.5% v/v) with a maximum of 4.1% v/v and oxygen below the mining act (19% v/v). It is possible that gas concentrations will pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					
R2 – Adjacent Residents / Workforce (off-site)		Moderate/Low					
R4 – Future Site Users (Road Users) and Adjacent Residents		Not Assessed (No Pathway)					
R9 – Buildings and Services		Not Assessed (No Pathway)					
	Soil and associated groundwater contamination associated with made ground in embankments, road structure and 'general' fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	Low: Exceedances of the residential without plant uptake were recorded across 2 locations in Arsenic and PAHs at locations noting a concrete hardstanding and a moderate chemical odour. Some minor exceedances of the groundwater RPV were also recorded in Manganese and PAH. The area is likely to contain significant Made Ground associated with the buildings and hard standings present within the area. The nature and contents of the storage tank are also unknown. Potential exists for contaminants to be recorded within the site soils outwith the areas investigated.	Moderate/Low	Exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately. Post construction much of the scheme will be covered by hard standing which will minimise potential for direct contact. Further risk assessment may confirm the absence of risk, however additional mitigation may be required. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction,
R3 – Maintenance and Landscape Workers		Moderate/Low					
R2 – Adjacent Residents / Workforce (off-site)		Low					
PBTC-49 – Depot and Storage Tank					Unlikely: Little potential for direct contact, and minimal risk associated with off-site migration of contaminants.		

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R4 – Future Site Users (Road Users) and Adjacent Residents			Unlikely: No exceedances of the public open space GAC were recorded. Post construction, much of the scheme will be covered by hard standing which will minimise potential for direct contact.	Low	before undertaking any below ground works to manage the residual risks. Residual risks of exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.
		R5 – Surface Water R10 – Environmentally Sensitive Areas	P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow to surface waters.	Pollution of the Water Environment (Medium) Ecological Harm	Unlikely: Exceedances of the EQS were recorded within soil leachate and groundwater analysis results, concentrations within groundwater are generally higher than those recorded within the leachate analysis. Given the low contamination potential of this source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ and ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport. There is the potential for leaching of soils to increase during construction phase earthworks and storage activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice	Low	Where site-won material is to be reused within the scheme re-use criteria focusing on the leaching and risks to the water environment particularly where materials are to be reused in close proximity to surface watercourses should be generated. Appropriate materials handling and storage protocols to be in place during construction to minimise any potential additional leaching of soils during earthworks programme.
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the leachate RPV were recorded in 4 samples across 3 locations. however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with groundwater (P10)	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the EQS were recorded within soil leachate however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: Gas monitoring was carried out at 3 locations located near this source. No methane was recorded above 20% of the LEL. Carbon dioxide was encountered above the long term WEL (>0.5% v/v) in 2 locations monitored and above the short term WEL (>1.5% v/v) in 1 location monitored with the maximum recorded steady state concentrations ranging between 0.4 and 4.2% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 1 location with the minimum recorded steady state concentrations ranging between 21.6 and 17.6% v/v. Carbon monoxide and hydrogen sulphide was not recorded above the WEL. Flow rates ranged between 0.0 and 0.69 l/hr. The gas concentrations recorded will pose an asphyxiation risk should accumulations occur within enclosed spaces without adequate ventilation.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					
R2 – Adjacent Residents / Workforce (off-site)		Moderate/Low				Residual risks associated with ground gas can be managed via development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations during construction and operation to protect off-site receptors.	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
		R4 – Future Site Users (Road Users) and Adjacent Residents			No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development’s nature as a trunk road.	Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C52 – General Made Ground	Soil and associated groundwater contamination associated with made ground in embankments, road structure and ‘general’ fill material (either in-situ or reused)	R1 - Construction Workers	P1 - Dermal contact, ingestion and inhalation	Harm to human health (Medium)	Low: Recorded exceedances of the residential without plant uptake GAC from locations on-site were attributed to another source. Exceedances were predominantly within TPHs and PAHs and are thought to be due to many of these samples containing tarmacadam and/ or bituminous material within made ground. It is likely the impact to human health from the above contaminants will be low given their primary association with bound asphalt materials. Similar to soils, exceedances of the groundwater RPV were recorded in locations attributed to another source. Exceedances of RPV for determinands include metals, inorganics, PAH and SVOC. Some of these locations repeatedly noted exceedances across multiple monitoring rounds. These are not attributed to a single source and are potentially representative of the baseline site conditions.	Moderate/Low	Exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of the appropriate PPE. This will effectively break the pollutant linkage if employed appropriately. Post construction much of the scheme will be covered by hard standing which will minimise potential for direct contact. Further risk assessment may confirm the absence of risk, however additional mitigation may be required. Appropriate working methods will be required to be developed and adopted by maintenance workers, post construction, before undertaking any below ground works to manage the residual risks. Residual risks of exposure of off-site receptors to contaminants during construction works (stockpiling, transportation, backfilling etc.) should be managed and controlled by measures put in place to manage construction worker risks (site monitoring (background/personal air monitoring and visual inspections) and the development of safe systems of work (damping down, dust suppression etc.) supported by a routine site boundary dust monitoring programme.
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R2 – Adjacent Residents / Workforce (off-site)				Low	
		R4 – Future Site Users (Road Users) and Adjacent Residents				Low	
		R5 – Surface Water R10 – Environmentally Sensitive Areas	P3 - Leaching of contaminants and vertical migration into groundwater and lateral migration with	Pollution of the Water Environment (Medium) Ecological Harm	Unlikely Exceedances of the EQS were recorded within soil leachate and groundwater analysis results, concentrations within groundwater are generally higher than those recorded within the leachate analysis. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils	Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
			groundwater flow to surface waters.		would leach from in- situ and ex-situ soils and migrate to the nearby surface water receptors via groundwater flow in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport. There is the potential for leaching of soils to increase during construction phase earthworks and storage activities however the likelihood of significant impact is still considered to be unlikely noting leachable concentrations are not substantially above the EQS and leaching potential will be further reduced through the provision of appropriate materials handling protocols in accordance with best practice		Appropriate materials handling and storage protocols to be in place during construction to minimised any potential additional leaching of soils during earthworks programme.
		R6 – Groundwater within Superficial Deposits	P2 - Leaching of contaminants and vertical migration into groundwater and lateral migration with groundwater flow	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the leachate RPV were recorded in locations attributed to other sources. Given low contamination potential of source and a mostly tenuous connection to surface waters along the route it is considered unlikely that contaminants within the soils would leach from in- situ soils and migrate to the nearby groundwater receptors in sufficient concentrations and volumes likely to cause harm to the water environment given the effects of dilution, dispersion and retardation during transport.	Low	No specific mitigation measures. Where site-won material is to be reused within the scheme re-use criteria focussing on the leaching and risks to the water environment should be developed through supplementary detailed quantitative risk assessment once final earthworks details are confirmed.
		R7 – Bedrock Groundwater				Low	
		R8 – Livestock (Property)	P1 - Dermal contact, ingestion and inhalation	Harm to property (Mild)	Unlikely: No livestock present within road / embankment areas.	Not Assessed (No Pathway)	No specific mitigation measures
		R9 – Buildings and Services	P4 - Direct Contact (chemical attack)	Damage to integrity of buried concrete and infrastructure (Mild)	Unlikely likelihood: whilst direct contact of infrastructure such as water pipes and concrete with shallow soils including Made Ground is likely to occur, the assessment of appropriate concrete classes and utilities pipework is a routine design consideration. As such the likelihood of impact is considered to be unlikely.	Very Low	Appropriate concrete design to be adopted based upon BRE Special Digest 1. Water supply pipe assessment and material specification to be completed in accordance with UKWIR guidance and take cognisance of the Made Ground soil conditions reported.
		R6 – Groundwater within Superficial Deposits R7 – Bedrock Groundwater	Driving of contaminated surface soils to depth during installation of piles with subsequent leaching to/ direct contact with	Pollution of the Water Environment (Medium)	Unlikely: Exceedances of the EQS were recorded within soil leachate however, soils could only be driven to depth where precast percussive piling methodologies are employed. Given the limited evidence of significant leaching potential and the relatively low volumes of soils that could be driven to depth, it is considered unlikely that concentrations and volumes would be sufficient to cause harm to the water environment.	Low	A Piling Risk Assessment for the selected construction methodology should be completed as part of the overall engineering design.

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
			groundwater (P10)				
	Ground gas and vapours within Made Ground in embankments, road structure and 'general' fill.	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: Gas monitoring was completed at 41 locations within the boundary that were not attributed to any other sources. No Methane was recorded above 20% of the LEL at any location. Carbon dioxide was encountered above the long term exposure limit (>0.5% v/v) at 37 locations and short term exposure limit (>1.5% v/v) in 12 locations with the maximum recorded steady state concentrations ranging between 0.6 and 4.1% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 11 locations with the minimum recorded steady state concentrations ranging between 12.4 and 18.8% v/v. Carbon monoxide and hydrogen sulphide were not recorded above the WEL. The range of flow rates was between -14.0 and 7.2l/hr. Potential exists for gas within this fill material to migrate towards the scheme.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					
R2 – Adjacent Residents / Workforce (off-site)		Moderate/Low				Residual risks associated with ground gas can be managed via development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations during construction and operation to protect off-site receptors.	
R4 – Future Site Users (Road Users) and Adjacent Residents		Not Assessed (No Pathway)				If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.	
R9 – Buildings and Services		Not Assessed (No Pathway)					
Off-site Sources							
PBTC-C3 – Storage Tank	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated, however it is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours	R1 - Construction Workers	P7 - Migration of ground gas or				Moderate/Low

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
	associated with former land use	R3 – Maintenance and Landscape Workers	vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present it is 30 m away from the scheme.	Moderate/Low	work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R4 – Future Site Users (Road Users)				Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C8 – Ringwood Sawmill	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present it is around 50 m away from the scheme	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R4 – Future Site Users (Road Users)			No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development's nature as a trunk road.	Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-10 – Old Quarry	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present it is around 60 m away from the scheme. Fill type is unknown with a potential for gas generation	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R4 – Future Site Users (Road Users)				Not Assessed (No Pathway)	
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C12 – Dunkeld Wastewater Treatment Works	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and impact potential receptors via groundwater discharge that may have been impacted by this source.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: This potential source has not been specifically investigated and is located 60 m away from the scheme. A potential gas migration pathway towards the scheme may be present.	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R4 – Future Site Users (Road Users)				Not Assessed (No Pathway)	
		R9 – Buildings and Services				Not Assessed (No Pathway)	
PBTC-C13 – Gas Works	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
			migrating onto site				
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present, it is around 80 m away from the scheme. Fill type within the gas works is unknown with a potential for gas generation	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate/Low					
R4 – Future Site Users (Road Users)		Not Assessed (No Pathway)					
R9 – Buildings and Services		Not Assessed (No Pathway)					
PBTC-C14 – Youngs Garage/Fuel Station	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present, it is around 70 m away from the scheme.	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate/Low					
R4 – Future Site Users (Road Users)		Not Assessed (No Pathway)					
R9 – Buildings and Services		Not Assessed (No Pathway)					
PBTC-C18 - Smithy	Soil contamination	R1 - Construction Workers	P9 - Dermal contact,		Unlikely: one location (BTB4025) located near the source recorded no exceedances of the groundwater RPV were	Low	Further assessment of potential risks. Residual risks associated with exposure of construction

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
	associated with former land use	R3 – Maintenance and Landscape Workers	ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	recorded within the location monitored (BTB4025). There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: The source was not directly investigated. The nearby BTB4025 showed several incidences of carbon dioxide above the short term exposure limit (1.5% v/v) with a maximum recorded concentration of 4.1% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded with a minimum recorded concentration of 17.5% v/v. No exceedances of the WELs for carbon monoxide or hydrogen sulphide were recorded. There is a potential migration pathway towards the scheme.	Moderate	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					
R4 – Future Site Users (Road Users)		Not Assessed (No Pathway)				If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.	
R9 – Buildings and Services		Not Assessed (No Pathway)					
PBTC-C22 – Ladywell Landfill	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Low: Groundwater analysis has locally recorded concentrations of nickel, manganese and SVOC above the relevant GAC, which is likely associated with the landfill leachate from this dilute and disperse site. It is unlikely to be directly disturbed during construction and operation. The assessment of cuttings proposed near this location suggest that groundwater is unlikely to be encountered during site work or maintenance works.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or	Explosive/ asphyxiation risk (Severe)	Low: Gas monitoring was undertaken on the northern edge of the landfill site in 8 locations, close to the area containing waste materials but not directly intersecting it. No methane above 20% of the LEL was recorded. Carbon dioxide was encountered above the long term exposure limit (>0.5% v/v) at 7 locations and short term exposure limit (>1.5% v/v) in 3 locations with the maximum recorded steady state concentrations ranging between 0.1 and 10.9% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 3 locations with the minimum recorded steady state concentrations ranging between 14.6 and 20.1% v/v. Carbon monoxide and hydrogen sulphide were not recorded above the WEL. A minimum flow rate of -10.7 l/hr was recorded at BTB4029 which coincided with an atmospheric pressure of 992 mb. A	Moderate	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
R3 – Maintenance and Landscape Workers		Moderate					

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures	
			asphyxiating concentrations.		maximum flow rate of 19.2 l/hr was recorded at BTB4028 with an atmospheric pressure of 1005 mb. A potential gas migration pathway towards the scheme may be present.			
		R4 – Future Site Users (Road Users)			No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development's nature as a trunk road.	Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.	
		R9 – Buildings and Services				Not Assessed (No Pathway)		
PBTC-C53 – General Made Ground/ Engineering Fill	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: There were several exceedances of the water environmental assessment criteria for groundwater and leachates however there does not appear to be a direct linkage between the leachate and groundwater data at specific locations. This indicates it is more likely representative of regional conditions as opposed to site sources. The exception to this could be TPH and PAH concentrations that may be attributable to the localised but high occurrence of tarmac and bituminous material within the offsite Made Ground. The likelihood that the shallow cuttings proposed will alter the existing groundwater regime and draw new sources of contamination into the cuttings is low.	Low	If required, exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.	
		R3 – Maintenance and Landscape Workers				Low		
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Low: Gas monitoring was completed at 20 offsite locations that were not attributed to any other sources. No Methane was recorded above 20% of the LEL at any location. Carbon dioxide was encountered above the long term exposure limit (>0.5% v/v) at 15 locations and short term exposure limit (>1.5% v/v) in 4 locations with the maximum recorded steady state concentrations ranging between 0.2 and 4.9% v/v. Depleted oxygen concentrations (below 19% v/v) were recorded at 5 locations with the minimum recorded steady state concentrations ranging between 8.8 and 21.7% v/v. Carbon monoxide was recorded above the long term WEL (20ppm) in 1 location with a recorded concentration of 47ppm. Hydrogen sulphide was not recorded above the WEL. The range of flow rates was between 0 and 6.1l/hr. Potential exists for gas within this fill material to migrate towards the scheme.	Moderate	Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.	
		R3 – Maintenance and Landscape Workers				Moderate		
		R4 – Future Site Users (Road Users)					Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.
		R9 – Buildings and Services					Not Assessed (No Pathway)	

Source Ref	Contaminant Description	Receptor	Pathway	Consequence	Likelihood	Potential Risk Rating	Potential Mitigation Measures
PBTC-C58 – Washbay Interceptor	Soil contamination associated with former land use	R1 - Construction Workers	P9 - Dermal contact, ingestion and inhalation of groundwater migrating onto site	Harm to human health (Medium)	Unlikely: This potential source has not been specifically investigated and is unlikely to be directly disturbed during construction and operation. There is the potential, albeit low for the shallow cuttings proposed near this location to alter the existing groundwater regime and draw contaminants from this source towards the scheme.	Low	Further assessment of potential risks. Residual risks associated with exposure of construction workers to contaminants during below ground works can be controlled by development of safe systems of work including the use of appropriate PPE as a last resort.
		R3 – Maintenance and Landscape Workers				Low	
	Ground gas and vapours associated with former land use	R1 - Construction Workers	P7 - Migration of ground gas or vapours via permeable strata or construction features i.e. piles, below ground structures/ service ducts etc. and accumulation of explosive or asphyxiating concentrations.	Explosive/ asphyxiation risk (Severe)	Unlikely: This potential source has not been specifically investigated and although a potential migration pathway is present, it is around 20 m away from the scheme. The potential source is unlikely to have significant gas generating potential	Moderate/Low	Potential further assessment of risks. Development of safe systems of work to monitor and address the presence of any hazardous ground gases concentrations will be required during construction and operation to protect workers during any below ground works or works in enclosed spaces.
		R3 – Maintenance and Landscape Workers				Moderate/Low	
		R4 – Future Site Users (Road Users)	R9 – Buildings and Services	No Pathway: No buildings are proposed. Post works, site end users and off-site residents / workers will not be exposed to ground gas accumulations due to the development’s nature as a trunk road.	Not Assessed (No Pathway)	If buildings or structures are planned assessment and implementation of ground gas protection measures in accordance with CIRIA C665 and BS8485 may be required.	
		R9 – Buildings and Services			Not Assessed (No Pathway)		

Annex C: Data Assessment Tables

The full assessment is detailed in the draft GeAR (Jacobs, 2024a).

Assessment tables:

- Table A13.1.10: Soil Laboratory Analysis Data Screening vs. Human Health Assessment Criteria from Soils (Acute Generic Assessment Criteria)
- Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health Assessment Criteria from Soils (Generic Assessment Criteria)
- Table A13.1.12: Assessment of Risks to Groundwater and Surface Waters – Soil Leachate
- Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater
- Table A13.1.14: Ground Gas Data Assessment

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.10: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Acute Generic Assessment Criteria)

Investigation Phase	Location Reference	Sample depth (mbgl)	Sample Date	Sample Lithology	Contaminative Source ID(s)	Analyte Group	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-
						Analyte Unit	Inorganics Cyanide (Free) mg/kg	Metals Arsenic mg/kg	Metals Cadmium mg/kg	Benzene mg/kg	1,2-Trichloroethen mg/kg	Vinyl Chloride mg/kg	Phenols Phenol mg/kg
						SoBRA AGAC Oral (Child)	24	80	140	47			2000
						SoBRA AGAC Inhalation (Child)	380	7000000	1800000	190	16000	110	160000
						SoBRA AGAC Dermal (Child)				14000000			
						SoBRA AGAC Oral (Adult)	2100	7000	12000	4100			175000
						SoBRA AGAC Inhalation (Adult)	1400	14000000	3500000	370	33000	220	320000
						SoBRA AGAC Dermal (Adult)				79000000			
P02 Fugro 2016-A	BH16650	0.3	17/11/2015	Gravel	PBTC-C1		0.2	4.8	0.2	<0.01			
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2		0.1	8.3	0.8	<0.01			
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-			27	0.3	<0.01	<0.01	<0.01	<0.1
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-			5.8	0.3	<0.01			
P02 SEGL 2015	BHBT002	0.3	18/06/2014	Topsoil	-			7.3	0.11				
P02 SEGL 2015	BHBT002	1	18/06/2014	Silt	-			3.6	0.0613				
P02 SEGL 2015	BHBT002-1A	1.5	26/01/2015	Made Ground	PBTC-C1		<1	15.5	1.31				<0.01
P02 SEGL 2015	BHBT004-1	0.32	21/01/2015	Sand and Gravel	PBTC-C1		<1	6.45	0.138	<0.01			<0.01
P02 SEGL 2015	BHBT011-1	1	15/01/2015	Sand and Gravel	PBTC-C1		<1	4.5	0.0953	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT022-1	0.3	06/01/2015	Sand and Gravel	PBTC-C1		<1	7.48	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT022-1	2	06/01/2015	Sand and Gravel	PBTC-C1		<1	7.61	0.195				<0.01
P02 SEGL 2015	BHBT024-1	0.7	11/12/2014	Sand	PBTC-C1		<1	8.16	<0.02				<0.01
P02 SEGL 2015	BHBT025-1	0.37	16/12/2014	Possible Made Ground	PBTC-C1		<1	11.3	0.476	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT025-1	0.65	16/12/2014	Possible Made Ground	PBTC-C1		<1	10.8	<0.02				<0.01
P02 SEGL 2015	BHBT027-1	1	01/03/2014	Sand and Gravel	PBTC-C1		<1	6.69	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT027-1	3	03/12/2014	Sand and Gravel	PBTC-C1		<1	7.85	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT027-1	5	04/12/2014	Sand and Gravel	PBTC-C1		<1	7.86	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT038	0	03/09/2014	Topsoil	PBTC-C2			8.39	0.17				0.0138
P02 SEGL 2015	BHBT038	0.7	03/09/2014	Made Ground	PBTC-C2		<1	4.32	0.174				2.69
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2		<1			<0.01			<0.01
P02 SEGL 2015	BHBT038	1.4	03/09/2014	Cobbles	PBTC-C2		<1	7.44	0.0661	<0.009	<0.009	<0.006	0.0468
P02 SEGL 2015	BHBT040	0.5	07/01/2015	Made Ground	PBTC-C1		<1	7.39	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT040	2	07/01/2015	Made Ground	PBTC-C1		<1	36.6	0.391	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT040	3	07/01/2015	Made Ground	PBTC-C1		<1						<0.01
P02 SEGL 2015	BHBT042	0	23/10/2014	Topsoil	PBTC-C1		<2	7.09	0.0536				
P02 SEGL 2015	BHBT042	1	23/10/2014	Sand and Gravel	PBTC-C1		<1	5	<0.02				<0.01
P02 SEGL 2015	BHBT042	3	24/10/2014	Sand and Gravel	PBTC-C1		<1	2.89	<0.02				<0.01
P02 SEGL 2015	BHBT043	2.5	17/10/2014	Sand and Gravel	-		<1	3.52	0.251	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT047	0.3	17/10/2014	Sand	-		<1	12	0.0356	<0.009	<0.009	<0.006	1.54
P02 SEGL 2015	BHBT047	1	17/10/2014	Sand	-		<1			<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT059	0.5	11/12/2014	Made Ground	PBTC-C1		<1	6.72	0.13	<0.01			<0.01
P02 SEGL 2015	BHBT061	1.7	08/09/2014	Made Ground	PBTC-C2		<1	11.2	0.497	<0.01			<0.01
P02 SEGL 2015	BHBT063	0.5	04/11/2014	Made Ground	PBTC-C1		<1	2.13	0.05				<0.01
P02 SEGL 2015	BHBT063	0.8	04/11/2014	Sand and Gravel	PBTC-C1		<1	5.08	0.0873				
P02 SEGL 2015	BHBT064A	0.5	03/11/2014	Made Ground	PBTC-C1		<1	1.47	<0.02				<0.01
P02 SEGL 2015	BHBT064A	1	03/11/2014	Sand and Gravel	PBTC-C1		<1	7.09	<0.02				<0.01
P02 SEGL 2015	BHBT067-1	0.5	21/10/2014	Sand and Gravel	PBTC-C1		<1	3.04	0.156	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT069	0.3	08/09/2014	Topsoil	-		<1	11.5	0.201				<0.01
P02 SEGL 2015	BHBT069	1	09/09/2014	Gravel	-		<1	13	0.0965				<0.01
P02 SEGL 2015	BHBT077	0	22/09/2014	Made Ground	PBTC-C1, PBTC-C2		<1	5.04	0.0282	<0.04			<0.01
P02 SEGL 2015	BHBT077	0.4	22/09/2014	Made Ground	PBTC-C1, PBTC-C2		<1	14.6	0.0954	<0.04			<0.01
P02 SEGL 2015	BHBT077	1	22/09/2014	Made Ground	PBTC-C1, PBTC-C2		<1	17.3	0.0569	<0.01			<0.01
P02 SEGL 2015	BHBT077	2	22/09/2014	Gravel	PBTC-C1, PBTC-C2		<1	6.74	<0.02	<0.01			<0.01
P02 SEGL 2015	BHBT084	0.6	09/10/2014	Gravel	PBTC-C1, PBTC-C2		<1	7.68	<0.02				<0.01
P02 SEGL 2015	BHBT085	0.4	01/10/2014	Made Ground	PBTC-C1, PBTC-C2		<1	2.18	0.0303				<0.01
P02 SEGL 2015	BHBT086	0.3	13/01/2015	Made Ground	PBTC-C1		<1	0.809	<0.02				<0.01
P02 SEGL 2015	BHBT086	0.8	15/01/2015	Sand	PBTC-C1		<1	14.8	<0.02				<0.01
P02 SEGL 2015	BHBT090	0.5	20/08/2014	Made Ground	PBTC-C2		<1	8.58	0.142				<0.01
P02 SEGL 2015	BHBT091	0.5	30/09/2014	Made Ground	PBTC-C1, PBTC-C2		<1	1.96	<0.02	<0.01			<0.01
P02 SEGL 2015	BHBT091	1	30/09/2014	Sand	PBTC-C1, PBTC-C2		<1	5.72	<0.02	<0.01			<0.01
P02 SEGL 2015	BHBT095	0.5	15/10/2014	Made Ground	PBTC-C2		<1	14	0.399				<0.01
P02 SEGL 2015	BHBT104A	0.1	20/08/2014	Made Ground	PBTC-C1, PBTC-C2		<1	6.35	0.297				<0.01
P02 SEGL 2015	BHBT104A	0.3	20/08/2014	Sand and Gravel	PBTC-C1, PBTC-C2		<1	7.49	0.27				<0.01
P02 SEGL 2015	BHBT106	0.5	17/09/2014	Gravel	PBTC-C1		<1	10.5	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT107	0.5	02/09/2014	Gravel	PBTC-C1, PBTC-C2, PBTC-C22		<1	6.27	0.242	<0.01			<0.01
P02 SEGL 2015	BHBT110	0.3	20/08/2014	Sand	PBTC-C2, PBTC-C22		<1	3.63	0.12				<0.01
P02 SEGL 2015	BHBT115-1	0.5	03/02/2015	Grave (Possible Made Ground)	PBTC-C1		<1	16.4	0.302	<0.01			<0.01
P02 SEGL 2015	BHBT118	0.5	14/07/2014	Sand	PBTC-C22		<1	13	0.428				<0.01
P02 SEGL 2015	BHBT121A	1	03/10/2014	Clay (Possible Made Ground)	-		<1	6.24	<0.02				<0.01
P02 SEGL 2015	BHBT122	0.3	11/12/2014	Topsoil	-		<1	9.77	0.0551				<0.01
P02 SEGL 2015	BHBT122-1	0.5	11/12/2014	Made Ground	PBTC-C1		<1	1.9	<0.02	<0.01			<0.01
P02 SEGL 2015	BHBT123-1	0.5	18/09/2014	Gravel	PBTC-C1		<1	10.1	0.0507	<0.01			<0.01
P02 SEGL 2015	BHBT128	0.3	26/09/2014	Made Ground	-		<1	11.2	0.158	<0.01			<0.01
P02 SEGL 2015	BHBT132	1	26/08/2014	Cobbles and Boulders	PBTC-C1		<1	9.29	0.0949				<0.01
P02 SEGL 2015	BHBT136	0.3	03/09/2014	Made Ground	-		<1	6.1	0.173				<0.01
P02 SEGL 2015	BHBT137	0.3	03/09/2014	Made Ground	-		<1	4.98	0.143				<0.01
P02 SEGL 2015	BHBT137	0.5	03/09/2014	Made Ground	-		<1	5.03	0.204	<0.01			<0.01
P02 SEGL 2015	BHBT137A	0.3	04/09/2014	Made Ground	-		<1						<0.01
P02 SEGL 2015	BHBT137A	1	04/09/2014	Made Ground	-		<1	5.02	0.153	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT137A	1.7	04/09/2014	Cobbles	-		<1			<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT138	0.75	09/09/2014	Made Ground	PBTC-C49		<1	8.18	0.248	<0.01	<0.01	<0.006	<0.01
P02 SEGL 2015	BHBT138	2	09/09/2014	Sand	PBTC-C49		<1	7.52	0.227	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT140	1	12/09/2014	Sand (Possible Made Ground)	PBTC-C1		<1	8.58	0.33				<0.01
P02 SEGL 2015	BHBT140	2.5	12/09/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1		<1	5.77	0.314				<0.01
P02 SEGL 2015	BHBT140	4	15/09/2014	Sand	PBTC-C1		<1			<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT141	2	24/10/2014	Gravel	PBTC-C1		<1	7.22	0.053	<0.009	<0.009	<0.006	<0.1
P02 SEGL 2015	BHBT141	3	27/10/2014	Sand	PBTC-C1		<1	9.28	0.162	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT146	0.3	19/09/2014	Made Ground	PBTC-C1		<1	5.92	0.214	<0.009	<0.009	<0.006	<0.01

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.10: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Acute Generic Assessment Criteria)

Investigation Phase	Location Reference	Sample depth (mbgl)	Sample Date	Sample Lithology	Contaminative Source ID(s)	Analyte Group	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-
						Analyte Unit	Inorganics Cyanide (Free) mg/kg	Metals Arsenic mg/kg	Metals Cadmium mg/kg	Benzene mg/kg	1,2-Trichloroethen mg/kg	Vinyl Chloride mg/kg	Phenols Phenol mg/kg
						SoBRA AGAC Oral (Child)	24	80	140	47			2000
						SoBRA AGAC Inhalation (Child)	380	7000000	1800000	190	16000	110	160000
						SoBRA AGAC Dermal (Child)				14000000			
						SoBRA AGAC Oral (Adult)	2100	7000	12000	4100			175000
						SoBRA AGAC Inhalation (Adult)	1400	14000000	3500000	370	33000	220	320000
						SoBRA AGAC Dermal (Adult)				79000000			
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2		<1	10.2	0.138				<0.01
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2		<1	2.24	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2		<1	4.85	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1		<1	3.38	<0.02				<0.01
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1		<1	4.18	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1		<1	5.01	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1		<1						
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2		<1	8.33	0.0981				<0.01
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)	-		<1	4.08	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand	-		<1	3.08	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2		<1	5.77	<0.02				<0.01
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2		<1	3.54	0.046				<0.01
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2		<1	2.34	0.0312				<0.01
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2		<1	6.68	<0.02				<0.01
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2		<1	2.26	0.153				<0.01
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2		<1	4.8	0.482	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2		<1	4.53	<0.02	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2		<1	9.14	0.355				<0.01
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2		<1	5.32	0.127	<0.01	<0.09	<0.06	0.0777
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2		<1	4.24	0.112	<0.01	<0.09	<0.06	0.056
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1		<1	4.75	0.128				<0.01
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1		<1	6.04	0.252				0.012
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1		<1	5.12	0.0586				<0.01
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1					<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1								<0.01
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1			6	<0.1				
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1			6.1	<0.1				
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1			7.1	<0.1				
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-			4.9	<0.1				
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1		<1	9.51	0.251	<0.01			<0.01
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil	-		<1	7.86	<0.02				
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel	-		<1	3.35	<0.02				<0.01
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil	-		<1	10.5	0.0222				
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel	-		<1	4.75	<0.02				<0.01
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1		<1	3.04	<0.02				
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground	-		<1	5.26	0.215				<0.01
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground	-		<1	5.99	0.212	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground	-					<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground	-		<1	4.57	0.161	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand	-		<1	9.36	0.283				<0.01
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand	-		<1	8.43	0.304				<0.01
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBTC-C2, PBTC-C15		<1	7.78	0.228				<0.01
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBTC-C2, PBTC-C15		<1	15.6	0.264				<0.01
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBTC-C2		<1	11.4	0.279				<0.01
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2		<1	12.4	0.213				<0.01
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2		<1	11.1	<0.02	<0.01			<0.01
P02 SEGL 2015	TPBT091	0.5	14/08/2014	Silt	PBTC-C2, PBTC-C22		<1	7.27	0.142	<0.09	<0.09	<0.06	<0.01
P02 SEGL 2015	TPBT092	0	13/08/2014	Topsoil	PBTC-C2, PBTC-C22		<1	16.3	1.99				<0.01
P02 SEGL 2015	TPBT092	0.5	13/08/2014	Sand and Gravel	PBTC-C2, PBTC-C22		<1	28.6	0.379	<0.009	<0.009	<0.006	<0.01
P02 SEGL 2015	TPBT095	0	29/09/2014	Topsoil	PBTC-C22		<1	6.7	0.14	<0.01			<0.01
P02 SEGL 2015	TPBT095	0.5	29/09/2014	Sand and Gravel	PBTC-C22		<1	8.74	0.107	<0.01			<0.01
P02 SEGL 2015	TPBT097	0	29/09/2014	Topsoil	PBTC-C22		<1	12.1	0.557	<0.01			<0.01
P02 SEGL 2015	TPBT097	0.5	29/09/2014	Sand	PBTC-C22		<1	26.7	0.0822	<0.01			<0.01
P02 SEGL 2015	TPBT102	0.5	24/09/2014	Made Ground	-		<1	7.56	0.0997	<0.01			<0.01
P02 SEGL 2015	TPBT104	0.5	03/09/2014	Made Ground	PBTC-C1		<1	11.5	0.253	<0.01			<0.01
P02 SEGL 2015	TPBT104	1	03/09/2014	Made Ground	PBTC-C1					<0.01			
P02 SEGL 2015	TPBT106	0.5	10/10/2014	Made Ground	PBTC-C1, PBTC-C49		<1	8.04	<0.02				<0.01
P02 SEGL 2015	TPBT111	0.5	18/09/2014	Made Ground	PBTC-C49		<1	11	0.218				<0.01
P02 SEGL 2015	TPBT118	0.5	19/09/2014	Silt	-			10.9	0.363				<0.01
P02 SEGL 2015	TPBT131	0.1	15/08/2014	Topsoil	-			10	0.184				<0.01
P02 SEGL 2015	TPBT131	0.5	15/08/2014	Sand	-			6.85	0.23				<0.01
P02 SEGL 2015	TPBT133	0.5	21/11/2014	Made Ground	PBTC-C1		<1	9.08	<0.02				
P02 SEGL 2015	TPBT133	1	21/11/2014	Made Ground	PBTC-C1		<1	6.93	<0.02				
P02 SEGL 2015	TPBT133A	0	10/12/2014	Made Ground	-		<1	5.74	<0.02				<0.01
P02 SEGL 2015	TPBT133A	0.5	10/12/2014	Sand	-		<1	5.29	<0.02				<0.01
P02 SEGL 2015	TPBT134	0	10/12/2014	Topsoil	-		<1	10.6	0.143				<0.01
P02 SEGL 2015	TPBT134	0.5	10/12/2014	Sand	-		<1	7.93	<0.02				<0.01
P02 SEGL 2015	TPBT141	0.5	17/09/2014	Made Ground	PBTC-C1, PBTC-C2		<1	6.23	0.167				<0.01
P02 SEGL 2015	TPBT150	0.5	05/08/2014	Made Ground	PBTC-C1		<1	3.47	0.175				<0.01
P02 SEGL 2015	TPBT174	0	04/08/2014	Topsoil (Possible Made Ground)	PBTC-C1		<1	6.62	0.137				
P02 SEGL 2015	TPBT174	0.5	04/08/2014	Sand (Possible Made Ground)	PBTC-C1		<1	6.77	0.212				
P02 SEGL 2015	TPBT179	0	16/01/2015	Topsoil	PBTC-C1		<1	5.77	<0.02				<0.01
P03 Fugro 2018	BTB1003	0.3	24/10/2016	Made Ground	-			5.4	<0.1	<0.01	<0.01	<0.01	<0.1
P03 Fugro 2018	BTB1003	0.5	24/10/2016	Made Ground	-			13	<0.1	<0.01	<0.01	<0.01	<0.1
P03 Fugro 2018	BTT1003	0.5	13/10/2016	Sand	PBTC-C1			5.5	<0.1				
P03 Fugro 2018	TBT1001	1	10/11/2016	Made Ground	PBTC-C1			4.7	<0.1				
P02 SEGL 2023	BTB4000	0.15	24/02/2020	Gravel	-		<0.5	6.4	<0.1				<0.05
P02 SEGL 2023	BTB4000	0.5	24/02/2020	Gravel	-		<0.5	11	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4006	0.2	04/02/2020	Made Ground	PBTC-C2		<0.5	6.5	0.13				
P02 SEGL 2023	BTB4006	0.8	05/02/2020	Made Ground	PBTC-C2		<0						

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.10: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Acute Generic Assessment Criteria)

Investigation Phase	Location Reference	Sample depth (mbgl)	Sample Date	Sample Lithology	Contaminative Source ID(s)	Analyte Group	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-
						Analyte Unit	Inorganics Cyanide (Free) mg/kg	Metals Arsenic mg/kg	Metals Cadmium mg/kg	Benzene mg/kg	,1,2-Trichloroethen mg/kg	Vinyl Chloride mg/kg	Phenols Phenol mg/kg
						SoBRA AGAC Oral (Child)	24	80	140	47			2000
						SoBRA AGAC Inhalation (Child)	380	7000000	1800000	190	16000	110	160000
						SoBRA AGAC Dermal (Child)				14000000			
						SoBRA AGAC Oral (Adult)	2100	7000	12000	4100			175000
						SoBRA AGAC Inhalation (Adult)	1400	14000000	3500000	370	33000	220	320000
						SoBRA AGAC Dermal (Adult)				79000000			
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11		<0.5	2.7	<0.1				
P02 SEGL 2023	BTB4007A	2	17/03/2020	Silt	PBTC-C11		<0.5	6.6	<0.1				
P02 SEGL 2023	BTB4007B	1	18/03/2020	Silt	PBTC-C11		<0.5	4.1	<0.1				
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11		<0.5	6.2	<0.1				
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11		<0.5	5.7	<0.1				
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11		<0.5	7.8	0.1				
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11		<0.5	6.3	<0.1				
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11		<0.5	6	<0.1				
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11		<0.5	5	<0.1				
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11		<0.5	2	0.11				
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11		<0.5	6.8	<0.1				
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11		<0.5	10	0.18				
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11		<0.5	9.5	0.1				
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11		<0.5	4.2	<0.1				
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-		<0.5	7	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-		<0.5	4.1	<0.1	0.0057	<0.001	<0.001	0.31
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-		<0.5	6.9	0.14	<0.001	<0.001	<0.001	0.18
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-		<0.5	8.3	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1		<0.5	8.6	0.11				<0.05
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-		<0.5	5.9	0.1	<0.001	<0.001	<0.001	3.2
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-		<0.5	15	0.1				<0.05
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-		<0.5	12	<0.1				<0.05
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-		<0.5	9.7	<0.1				<0.05
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-		<0.5	15	0.41	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-		<0.5	8.7	0.11				<0.05
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1		<0.5	11	<0.1				
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1		<0.5	4.3	<0.1				
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1		<0.5	8.8	0.14				<0.02
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2		<0.5	17	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2		<0.5	21	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2		<0.5	8.9	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18		<0.5	14	0.14				
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18		<0.5	13	<0.1				
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18		<0.5	14	<0.1				
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22		<0.5	9.7	0.12	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22		<0.5	7.3	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22		<0.5	7.4	0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22		<0.5	5.8	<0.1				
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22		<0.5	6.4	0.11				
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22		<0.5	9.1	0.15	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22		<0.5	7.1	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22		<0.5	6.4	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22		<0.5	6.6	0.13	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-		<0.5	9.2	0.13	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-		<0.5	6.7	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-		<0.5	4.2	<0.1				
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49		<0.5	14	<0.1	<0.001	<0.001	<0.001	<0.02
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49		<0.5	14	<0.1				<0.02
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49		<0.5	4.7	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49		<0.5	13	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49		<0.5	1.9	<0.1				
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2		<0.5	7.9	<0.1				
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2		<0.5	11	0.1				<0.05
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2		<0.5	7.5	<0.1				<0.05
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1		<0.5	20	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1		<0.5	13	<0.1				<0.05
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1		<0.5	5.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1		<0.5	5.7	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1		<0.5	1.1	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2		<0.5	31	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2		<0.5	3	<0.1				<0.05
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2		<0.5	5.4	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2		<0.5	11	<0.1				<0.05
P02 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2		<0.5	8.2	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2		<0.5	6.2	<0.1				<0.05
P02 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2		<0.5	8.2	0.16	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2		<0.5	6.2	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1		<0.5	7.7	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-		<0.5	12	0.17	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTB4070	2	09/03/2020	Gravel	-		<0.5	37	<0.1				<0.05
P02 SEGL 2023	BTH4000	0.3	04/03/2020	Gravel	-		<0.5	4.4	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-		<0.5	3.5	<0.1				<0.05
P02 SEGL 2023	BTH4000A	0.3	17/05/2021	Sand	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-		<0.5						
P02 SEGL 2023	BTH4001	0.4	04/03/2020	Gravel	-		<0.5	3.3	<0.1				<0.05
P02 SEGL 2023	BTH4001	1	04/03/2020	Gravel	-		<0.5	2.9	<0.1				<0.05
P02 SEGL 2023	BTH4001A	0.4	17/05/2021	Sand	-		<0.5						
P02 SEGL 2023	BTH4001A	1	17/05/2021	Sand	-								

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 Table A13.1.10: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Acute Generic Assessment Criteria)

Investigation Phase	Location Reference	Sample depth (mbgl)	Sample Date	Sample Lithology	Contaminative Source ID(s)	Analyte Group	UK&I-RA-(SO)-Inorganics	UK&I-RA-(SO)-Metals	UK&I-RA-(SO)-Metals	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-VOC	UK&I-RA-(SO)-Phenols
						Analyte Unit	Cyanide (Free) mg/kg	Arsenic mg/kg	Cadmium mg/kg	Benzene mg/kg	1,2-Trichloroethen mg/kg	Vinyl Chloride mg/kg	Phenol mg/kg
						SoBRA AGAC Oral (Child)	24	80	140	47			2000
						SoBRA AGAC Inhalation (Child)	380	7000000	1800000	190	16000	110	160000
						SoBRA AGAC Dermal (Child)				14000000			
						SoBRA AGAC Oral (Adult)	2100	7000	12000	4100			175000
						SoBRA AGAC Inhalation (Adult)	1400	14000000	3500000	370	33000	220	320000
						SoBRA AGAC Dermal (Adult)				79000000			
P02 SEGL 2023	BTH4004	1	04/03/2020	Made Ground	PBTC-C22		<0.5	10	<0.1				<0.05
P02 SEGL 2023	BTH4004A	0.4	19/05/2021	Made Ground	PBTC-C22		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4004A	1	19/05/2021	Sand	PBTC-C22		<0.5						
P02 SEGL 2023	BTH4005	0.3	04/03/2020	Made Ground	PBTC-C22		<0.5	7.2	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22		<0.5	5.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4005	1	04/03/2020	Sand	PBTC-C22		<0.5	6.5	0.11				<0.05
P02 SEGL 2023	BTH4005A	0.3	27/05/2021	Made Ground	PBTC-C22		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4005A	1	19/05/2021	Sand	PBTC-C22		<0.5						
P02 SEGL 2023	BTH4006	0.5	05/03/2020	Gravel	-		<0.5	2.1	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4006	1	05/03/2020	Gravel	-		<0.5	2.5	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4006A	0.5	17/05/2021	Gravel	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4006A	1	17/05/2021	Gravel	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-		<0.5	3.9	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4007	1.1	05/03/2020	Gravel	-		<0.5	3.9	<0.1				<0.05
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4007A	1	17/05/2021	Gravel	-		<0.5						
P02 SEGL 2023	BTH4008	0.5	05/03/2020	Made Ground	-		<0.5	2.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4008	1.1	05/03/2020	Made Ground	-		<0.5	3.4	0.11	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4008A	0.5	17/05/2021	Made Ground	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4008A	1.1	17/05/2021	Made Ground	-		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49		<0.5	2.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49		<0.5	5.5	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49		<0.5	12	0.15	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49		<0.5	13	<0.1				<0.05
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49		<0.5	46	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1		<0.5	15	0.16	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1		<0.5	<1	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1		<0.5	0.6		<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4014	0.5	05/02/2020	Gravel	PBTC-C1		<0.5	2.8	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1		<0.5	3.3	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel	-		<0.5	4.3	<0.1	<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2		<0.5	10	0.26	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-		<0.5	4.6	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-		<0.5	4.2	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-		<0.5	4	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground	-		<0.5	7.2	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground	-		<0.5	14	0.27	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground	-		<0.5	5.6	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel	-		<0.5	9.1	<0.1				<0.05
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2		<0.5	6.4	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4019	0.5	27/02/2020	Made Ground	-		<0.5	4.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4019	1.6	27/02/2020	Made Ground	-		<0.5	4.9	0.18	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4019	3.6	27/02/2020	Made Ground	-		<0.5	6.9	0.15	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4020	0.3	19/02/2020	Made Ground	PBTC-C2		<0.5	13	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4020	1	19/02/2020	Gravel	PBTC-C2		<0.5	6.5	<0.1				<0.05
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-		<0.5	7.8	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4024A	0.3	18/05/2021	Made Ground	PBTC-C15		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4024A	0.5	18/05/2021	Made Ground	PBTC-C15		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4024A	1.15	18/05/2021	Sand	PBTC-C15		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4025A	0.5	18/05/2021	Made Ground	PBTC-C15		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4025A	1.15	18/05/2021	Sand	PBTC-C15		<0.5						
P02 SEGL 2023	BTT4026	0.3	17/02/2020	Made Ground	PBTC-C1		<0.5	6.5	0.13	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4026	1	17/02/2020	Sand	PBTC-C1		<0.5	8.9	<0.1				<0.05
P02 SEGL 2023	BTT4037	1	20/02/2020	Made Ground	PBTC-C1		<0.5	9.7	0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4038	0.3	20/02/2020	Made Ground	PBTC-C1		<0.5	11	0.12	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4038	1	20/02/2020	Made Ground	PBTC-C1		<0.5	8.1	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4038A	0.5	20/02/2020	Made Ground	PBTC-C1		<0.5	9.3	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4038A	2	20/02/2020	Made Ground	PBTC-C1		<0.5	8.4	<0.1	<0.001	<0.001	<0.001	<0.05
P02 SEGL 2023	BTT4038B	0.3	18/05/2021	Made Ground	PBTC-C1		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4038B	0.5	18/05/2021	Made Ground	PBTC-C1		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4038B	1	18/05/2021	Made Ground	PBTC-C1		<0.5			<0.001	<0.001	<0.001	<0.5
P02 SEGL 2023	BTT4042	0.5	09/03/2020	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2		<0.5	10	0.11				<0.05

XX	Exceedance of SoBRA AGAC Oral (Child)
XX	Exceedance of SoBRA AGAC Inhalation (Child)
XX	Exceedance of SoBRA AGAC Dermal (Child)
XX	Exceedance of SoBRA AGAC Oral (Adult)
XX	Exceedance of SoBRA AGAC Inhalation (Adult)
XX	Exceedance of SoBRA AGAC Dermal (Adult)

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Asbestos	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics		
Analyte		Asbestos Identification	Asbestos: Actinolite	Asbestos: Amosite	Asbestos: Anthophyllite	Asbestos: Chrysotile	Asbestos: Crocidolite	Asbestos: Tremolite	Non-Asbestos Fibre	pH	Total Organic Carbon	Total Organic Matter	Cyanide (Free)	Cyanide (Total)	Cyanide (Complex)	Thiocyanate	Chloride	Sulphur	Nitrite as NO2			
Unit		none	none	none	none	none	none	none	none	pH UNITS	%	%	mg/kg									
Commercial / Industrial GAC (SOM 1%)																						
Commercial / Industrial GAC Guidance Criteria																						
Public Open Space (Park) GAC (SOM 1%)																						
Public Open Space (Park) GAC Guidance Criteria																						
Residential without Plant Uptake GAC (SOM 1%)																						
Residential without Plant Uptake GAC Guidance Criteria																						
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1							7.27		1.39								
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001				26.2	<10	<0.1	
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001											
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1							7.81										
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1																	
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1																	
P02 SEGL 2015	BHBT158-1A	2	27/05/2014	Sand	PBTC-C1																	
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8.15		<0.35	<1	<1			<5	<10	0.23	
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9.3		0.591	<1	<1			63.5	<10	0.2	
P02 SEGL 2015	BHBT162-1	0.3	15/08/2014	Sand	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9.21		0.641	<1	<1			43.7	<10	0.23	
P02 SEGL 2015	BHBT166	0.3	24/11/2014	Sand	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.09		1.2	<1	<1						
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9.6		<0.35	<1	<1			212	13.4	0.12	
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9.51		<0.35	<1	<1			214	<10	<0.1	
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.98		0.459	<1	<1			<1	14.4		
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.98		1.2	<1	<1			<1	<10		
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1							8		<0.35	<1	<1				<10		
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1																	
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9.59		<0.35	<1	<1			<1	<10		
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground	-																	
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)	-	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8.49		0.657	<1	<1			<1	87.9		
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand	-							7.05		<0.35	<1	<1			<1	<10		
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8.95		<0.35	<1	<1			<1	69.6	<10	<0.1
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.02		0.84	<1	<1			<1	5.39	<10	<0.1
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.41		0.84	<1	<1			<1	5.39	<10	<0.1
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.57		0.355	<1	<1			<1	8.58	<10	0.24
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8.48		0.359	<1	<1			<1	<10		
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2							8.59		<0.35	<1	<1			<1	<10		
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2							8.36		<0.35	<1	<1			<1	<10		
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2							5.76			<1	<1			<1	<10		
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2							8.64		2.29	<1	<1			<1	221	<0.1	
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2							8.51		1.76	<1	<1			<1	77.5	<0.1	
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	6.7		1.71	<1	<1			<1	<10		
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1							6.47		2.17	<1	<1			<1	<10		
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8.38		0.848	<1	<1			<1	7.09	<10	<0.1
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1							7.95		<0.35	<1	<1			<1	<10		
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1							7.53		0.448	<1	<1			<1	<10		
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1							8		0.5	<0.1	<0.1			<0.1	<10		
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	9		<0.1	<0.1	<0.1			<0.1	<10		
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	7.9			<0.1	<0.1			<0.1	<10		
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	8		0.3	<0.1	<0.1			<0.1	<10		
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1							7.33		1.05	<1	<1			<1	<10		
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1									0.624	<1	<1			<1	<10		
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil	-							6.3		4.4	<1	<1			2.27	7.18	<10	0.43
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel	-							6.42		0.684	<1	<1			<1	6.11	<10	0.49
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil	-							5.75		6.81	<1	<1			3.17	11.9	<10	0.14
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel	-							6.31		0.745	<1	<1			<1	5	<10	0.62
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1							4.67		1.13	<1	<1			<1	27.6	<10	0.21
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground	-							5.13		2.62	<1	<1			<1	16.7	<10	
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground	-	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	5.99		2.29	<1	<1			<1	23	<10	
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground	-							6.17		3.79	<1	<1			<1	<10		
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground	-	Not Detected	<0.001	<0.001	<0.001	<0.001	<0.001	6.07		1.72	<1	<1			<1	19.8	<10	
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand	-							6.12		2.79	<1	<1			<1	<10		
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand	-							6.21		2.6	<1	<1			<1	<10		
P02 SEGL 2015	TPBT067	0	29/08/2014																			

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals							
Analyte		Nitrate as NO3	Ammoniacal Nitrogen as N	Sulphate	Sulphide	Arsenic	Boron	Boron (Water Soluble)	Cadmium	Chromium, Hexavalent (Cr6+)	Chromium vs Trivalent GAC	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Tin							
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
Commercial / Industrial GAC (SOM 1%)						640	24000		190	33	8600	68000		2300	1100	17000	980	12000		980						
Commercial / Industrial GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	C45L	EIC	S4UL	S4UL		S4UL						
Public Open Space (Park) GAC (SOM 1%)						170	46000		560	220	33000	44000		1300	240		800	1800		800						
Public Open Space (Park) GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL		S4UL	S4UL		S4UL						
Residential without Plant Uptake GAC (SOM 1%)						40	11000		85	6	910	7100		310	56	670	180	430		180						
Residential without Plant Uptake GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL	EIC	S4UL	S4UL		S4UL						
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																					
PO2 Fugro 2016-A	BH16650	0.3	17/11/2015	Gravel	PBTC-C1		15		16	4.8			1.2	0.2			21	11		16	0.08	0.5	14	<0.5	<1	
PO2 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2		200		52	8.3			2.7	0.8	<1		40	31		92	0.37	0.8	33	<0.5	5.6	
PO3 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-		9		28	27				0.3			23	33		12	<0.05	0.5	25	<0.5	<1	
PO3 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-		9.5		20	5.8				0.3			23	33		6.4	0.38	<0.4	23	<0.5	<1	
PO2 SEGL 2015	BHBT002	0.3	18/06/2014	Topsoil	-				7.3	<1				0.11	<0.6		24.3	14		27.3			18.2	<1	0.455	
PO2 SEGL 2015	BHBT002	1	18/06/2014	Silt	-				3.6	<1				0.0613	<0.6		28	7.18		11.1			21.4	<1	<0.24	
PO2 SEGL 2015	BHBT002-1A	1.5	26/01/2015	Made Ground	PBTC-C1				15.5	<1				1.31	<0.6		21.1	24		24300			9.39	<14	<0.24	
PO2 SEGL 2015	BHBT004-1	0.32	21/01/2015	Sand and Gravel	PBTC-C1				6.45	<1				0.138	<0.6		18.6	23.6				7.85	<14	<0.24	<0.24	
PO2 SEGL 2015	BHBT011-1	1	15/01/2015	Sand and Gravel	PBTC-C1				4.5	<1				0.0953	<1.2		22.1	9.99		22900		8.69	14.1	<1	<0.24	
PO2 SEGL 2015	BHBT022-1	0.3	06/01/2015	Sand and Gravel	PBTC-C1				85.6	<15				<0.02	<0.6		16.9	31.6		21500		10.2	19.3	<1	0.812	
PO2 SEGL 2015	BHBT022-1	2	06/01/2015	Sand and Gravel	PBTC-C1				59.6	<15				0.195	<0.6		18.9	18.6		20800		10.4	22.1	<1	0.315	
PO2 SEGL 2015	BHBT024-1	0.7	11/12/2014	Sand	PBTC-C1				8.16	<1				<0.02	<0.6		16.6	23.3				14.6	<14	<1	<0.24	
PO2 SEGL 2015	BHBT025-1	0.37	16/12/2014	Possible Made Ground	PBTC-C1				410	<15				0.476	<0.6		15.6	32.2		21400		29.8	17.3	<1	5.62	
PO2 SEGL 2015	BHBT025-1	0.65	16/12/2014	Possible Made Ground	PBTC-C1				<48	<15				<0.02	<0.6		18.2	34.7		23400		16.8	23	<1	<0.24	
PO2 SEGL 2015	BHBT027-1	1	01/03/2014	Sand and Gravel	PBTC-C1				96.2	<15				<0.02	<0.6		19.8	32.8		24100		11.2	19.5	<1	0.599	
PO2 SEGL 2015	BHBT027-1	3	03/12/2014	Sand and Gravel	PBTC-C1				54.1	<15				<0.02	<0.6		24.4	21.5		25700		8.26	20.1	<1	<0.24	
PO2 SEGL 2015	BHBT027-1	5	04/12/2014	Sand and Gravel	PBTC-C1				86.4	<15				<0.02	<0.6		28.4	22.3		25000		9.34	21.3	<1	0.248	
PO2 SEGL 2015	BHBT038	0	03/09/2014	Topsoil	PBTC-C2				8.39	<1				0.17	<3		27.4	38.4		23300		46.2	<14	<1	0.868	
PO2 SEGL 2015	BHBT038	0.7	03/09/2014	Made Ground	PBTC-C2				4.32	<1				0.174	<0.6		8.05	112		28500		10.9	<14	<1	<0.24	
PO2 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2				<15	146													15.3	<1	<0.24	
PO2 SEGL 2015	BHBT038	1.4	03/09/2014	Cobbles	PBTC-C2		3.04		<15	398															<1	<0.24
PO2 SEGL 2015	BHBT040	0.5	07/01/2015	Made Ground	PBTC-C1				64.7	<15				<0.02	<0.6		20	27.8		23300		9.89	<14	<1	0.267	
PO2 SEGL 2015	BHBT040	2	07/01/2015	Made Ground	PBTC-C1				33800	<15				0.391	<0.6		18	76.9		34100		42.6	<14	<1	<0.24	
PO2 SEGL 2015	BHBT040	3	07/01/2015	Made Ground	PBTC-C1																				<1	<0.24
PO2 SEGL 2015	BHBT042	0	23/10/2014	Topsoil	PBTC-C1				19	<15				0.0536	<0.6		13.4	12.7		13000		17.4	<14	<1	5.14	
PO2 SEGL 2015	BHBT042	1	23/10/2014	Sand and Gravel	PBTC-C1				<1	<15				<0.02	<1.2		21.9	11.9		20200		14.6	<14	<1	<0.24	
PO2 SEGL 2015	BHBT042	3	24/10/2014	Sand and Gravel	PBTC-C1				73.1	<15				<0.02	<0.6		22.2	11		17300		6.05	<14	<1	<0.24	
PO2 SEGL 2015	BHBT043	2.5	17/10/2014	Sand and Gravel	-				71.7	<15				0.251	<0.6		20.8	23.7		19300		11.1	<14	<1	1.34	
PO2 SEGL 2015	BHBT047	0.3	17/10/2014	Sand	-				634	<15				0.0556	<0.6		17.3	23.9		22200		7.97	<14	<1	<0.24	
PO2 SEGL 2015	BHBT047	1	17/10/2014	Sand	-																				<1	<0.24
PO2 SEGL 2015	BHBT059	0.5	11/12/2014	Made Ground	PBTC-C1				6.72	<1				0.13	<0.6		15.7	32.4				69	<14	<1	2.2	
PO2 SEGL 2015	BHBT059	1	11/12/2014	Made Ground	PBTC-C1																				<1	<0.24
PO2 SEGL 2015	BHBT061	0.5	08/09/2014	Made Ground	PBTC-C2																				<1	5.91
PO2 SEGL 2015	BHBT061	1.7	08/09/2014	Made Ground	PBTC-C2				<1	<15				0.497	<0.6		21.9	142		28000		92.5	0.202	49	<1	5.91
PO2 SEGL 2015	BHBT063	0.5	04/11/2014	Made Ground	PBTC-C1				995	<15				0.05	<0.6		17.4	6.56		12400		7.09	0.369	10.9	<1	<0.24
PO2 SEGL 2015	BHBT063	0.8	04/11/2014	Sand and Gravel	PBTC-C1				344	<15				0.0873	<0.6		22.7	19		21200		7.25	<14	<1	<0.24	
PO2 SEGL 2015	BHBT064A	0.5	03/11/2014	Made Ground	PBTC-C1				<1	<15				<0.02	<0.6		33.1	9.44		21800		4.28	0.141	15.5	<1	<0.24
PO2 SEGL 2015	BHBT064A	1	03/11/2014	Sand and Gravel	PBTC-C1				<1	<15				<0.02	<0.6		20.2	18.8		21900		6.53	<14	<1	<0.24	
PO2 SEGL 2015	BHBT067-1	0.5	21/10/2014	Sand and Gravel	PBTC-C1				463	<15				0.156	<0.6		14.8	9.62		14700		5.67	<14	<1	<0.24	
PO2 SEGL 2015	BHBT069	0.3	08/09/2014	Topsoil	-				187	<15				0.201	<3		21.3	33.1		24800		59.8	<14	<1	2.32	
PO2 SEGL 2015	BHBT069	1	09/09/2014	Gravel	-		14.4		188	<15				0.0965	<0.6		17.6	25.2		25100		22.1	<14	<1	1.11	
PO2 SEGL 2015	BHBT077	0	22/09/2014	Made Ground	PBTC-C1, PBTC-C2				643	<15				0.0282	<0.6		24.5	27		24200		45.8	0.175	28.8	<1	1.25
PO2 SEGL 2015	BHBT077	0.4	22/09/2014	Made Ground	PBTC-C1, PBTC-C2				493	<15				0.0954	<0.6		16.5	106		24400		62	<14	53.8	1.51	0.879
PO2 SEGL 2015	BHBT077	1	22/09/2014	Made Ground	PBTC-C1, PBTC-C2				<48	<15				0.0569	<0.6		16.2	40.1		23600		16.8	<14	<1	<0.24	
PO2 SEGL 2015	BHBT077	2	22/09/2014	Gravel	PBTC-C1, PBTC-C2				195	<15				<0.02	<1.2		22.4	12.7		24800		10.7	<14	<1	<0.24	
PO2 SEGL 2015	BHBT084	0.6	09/10/2014	Gravel	PBTC-C1, PBTC-C2				156	<15				<0.02	<0.6		15.5	17		19800		12.9	<14	<1	<0.24	
PO2 SEGL 2015	BHBT085	0.4	01/10/2014	Made Ground	PBTC-C1, PBTC-C2				1260	<15				0.0303	<0.6		14.9	6.21		12000		4.55	0.402	10.9	<1	<0.24
PO2 SEGL 2015	BHBT086	0.3	13/01/2015	Made Ground	PBTC-C1				40000	<15				<0.02	<0.6		21.5	6.64		16500		4.98	<14	<1	<0.24	
PO2 SEGL 2015	BHBT086	0.8	15/01/2015	Sand	PBTC-C1				68.9	<15				<0.02	<0.6		21.7	38.1		27400		7.73	<14	<1	<0.24	
PO2 SEGL 2015	BHBT090	0.5	20/08/2014	Made Ground	PBTC-C2				336	<15				0.142	<0.6		16.8	33.1				37.6	<14	<1	2.06	
PO2 SEGL 2015	BHBT091	0.5	30/09/2014	Made Ground	PBTC-C1, PBTC-C2				1050	<15				<0.02	<0											

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals		
Analyte		Nitrate as NO3	Ammoniacal Nitrogen as N	Sulphate	Sulphide	Arsenic	Boron	Boron (Water Soluble)	Cadmium	Chromium, Hexavalent (Cr6+)	Chromium vs Trivalent GAC	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Tin		
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)						640	24000		190	33	8600	68000		2300	1100	17000	980	12000			
Commercial / Industrial GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL	EIC	S4UL	S4UL			
Public Open Space (Park) GAC (SOM 1%)						170	46000		560	220	33000	44000		1300	240		800	1800			
Public Open Space (Park) GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL		S4UL	S4UL			
Residential without Plant Uptake GAC (SOM 1%)						40	11000		85	6	910	7100		310	56	670	180	430			
Residential without Plant Uptake GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL	EIC	S4UL	S4UL			
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1	9.66	<15	209	<15	12.1	<1	0.271	<0.6	19.4	25.1	20600	28.9	<0.14	16	<1	0.577
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1	<1	<15	<48	<15	12.9	<1	<0.02	<0.6	15	30.6	23900	12.2	<0.14	24.7	<1	<0.24
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1	<1	<15	443	18.3	1.96	<1	<0.02	<0.6	11.2	7.85	11900	3.53	0.196	9.81	<1	<0.24
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1	<1	<15	284	<15	19.2	<1	<0.02	<0.6	13.7	46.4	31700	8.14	<0.14	32.8	<1	<0.24
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2	<1	<15	131	<15	10.2	<1	0.138	<1.2	14.1	30.4		9.85	<0.14	21.2	<1	<0.24
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2	1.49	<15	122	<15	2.24	<1	<0.02	<0.6	10.7	13.1	8620	6.18	<0.14	9.45	<1	<0.24
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2	<1	<15	94.4	<15	4.85	<1	<0.02	<0.6	23	22.8	21000	6.59	<0.14	18.1	<1	0.396
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1																
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1																
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2																
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground																	
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)																	
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand																	
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	<1	<15	167	<15	5.77	<1	<0.02	<0.6	13.5	16.7	19200	6.66	<0.14	13.4	<1	<0.24
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	2.88	17.2	97.1	<15	3.54	<1	0.046	<0.6	18.2	16.4	16200	11.5	<0.14	11.8	<1	<0.24
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	<1	<15	<48	<15	2.34	<1	0.0312	<0.6	16.9	4.72	13500	6.11	<0.14	7.19	<1	<0.24
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	<1	<15	<48	<15	6.68	<1	<0.02	<0.6	19.9	16.8	19600	7.74	<0.14	14.7	<1	<0.24
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2																
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2																
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2																
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<1	<15	52.6	<15	5.32	<1	0.127	<0.6	19.2	50	26600	7.41	<0.14	18.9	<1	<0.24
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<1	<15	62.9	<15	4.24	<1	0.112	<0.6	23.5	69.5	32900	7.03	<0.14	25.1	<1	<0.24
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1																
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1	3.24	<15	86	<15	5.12	<1	0.0586	<0.6	17.6	15.7	19000	10.6	<0.14	13.8	<1	<0.24
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1																
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1																
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1																
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1																
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1																
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand																	
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1																
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1																
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil		13.7	<15	515	<15	7.86	<1	<0.02	<0.6	22.5	18.1	20700	6.94	<0.14	14.5	<1	2.16
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel		1.74	<15	147	<15	3.35	<1	<0.02	<1.2	16.1	4.77	19600	7.78	<0.14	10.2	<1	<0.24
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil		17.5	<15	489	<15	10.5	<1	0.0222	<1.2	21	37.8	24600	126	<0.14	26.1	<1	6.12
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel		2.95	<15	80.8	<15	4.75	<1	<0.02	<1.2	22.2	13.8	23900	11	<0.14	18	<1	<0.24
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1	1.11	<15	584	<15	3.04	<1	<0.02	<1.2	15.7	3.93	18500	6.53	<0.14	7.59	<1	<0.24
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground																	
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground																	
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground																	
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground																	
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand																	
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand																	
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBTC-C2, PBTC-C15																
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBTC-C2, PBTC-C15																
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2	19	<15	362	<15	12.4	<1	0.213	<3	23.7	36.8	23100	95.1	<0.14	26.7	<1	3.89
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2	23.3	<15	494	<15	11.1	<1	<0.02	<1.2	21.9	28.1	25400					

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 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals		
Analyte		Nitrate as NO3	Ammoniacal Nitrogen as N	Sulphate	Sulphide	Arsenic	Boron	Boron (Water Soluble)	Cadmium	Chromium, Hexavalent (Cr6+)	Chromium vs Trivalent GAC	Copper	Iron	Lead	Mercury	Molybdenum	Nickel	Selenium	Tin		
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)						640	24000		190	33	8600	68000		2300	1100	17000	980	12000			
Commercial / Industrial GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL	EIC	S4UL	S4UL			
Public Open Space (Park) GAC (SOM 1%)						170	46000		560	220	33000	44000		1300	240		800	1800			
Public Open Space (Park) GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL		S4UL	S4UL			
Residential without Plant Uptake GAC (SOM 1%)						40	11000		85	6	910	7100		310	56	670	180	430			
Residential without Plant Uptake GAC Guidance Criteria						S4UL	S4UL		S4UL	S4UL	S4UL	S4UL		C45L	S4UL	EIC	S4UL	S4UL			
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11	3.5	14	<0.4	<0.1	<0.5	19	29		6.7	<0.1			27	<0.2		
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11	4.2	3.3	<0.4	<0.1	<0.5	23	11		7.6	<0.1			33	<0.2		
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11	3	2.7	<0.4	<0.1	<0.5	27	30		18	<0.1			40	<0.2		
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11	4.1	6.6	<0.4	<0.1	<0.5	42	28		14	<0.1			56	<0.2		
P02 SEGL 2023	BTB4007D	1	18/03/2020	Silt	PBTC-C11	2.2	4.1	<0.4	<0.1	<0.5	15	24		8.2	<0.1			23	<0.2		
P02 SEGL 2023	BTB4007E	1	18/03/2020	Sand	PBTC-C11	3.3	6.2	<0.4	<0.1	<0.5	24	19		9.9	<0.1			33	<0.2		
P02 SEGL 2023	BTB4007F	1.5	18/03/2020	Sand	PBTC-C11	3.5	5.7	<0.4	<0.1	<0.5	25	19		9	<0.1			32	<0.2		
P02 SEGL 2023	BTB4007G	0.2	18/03/2020	Topsoil	PBTC-C11	2	7.8	0.4	0.1	<0.5	13	15		37	<0.1			12	0.51		
P02 SEGL 2023	BTB4007H	1	18/03/2020	Sand	PBTC-C11	2.7	6.3	<0.4	<0.1	<0.5	19	26		9.2	<0.1			30	<0.2		
P02 SEGL 2023	BTB4007I	1.8	18/03/2020	Sand	PBTC-C11	2.4	6	<0.4	<0.1	<0.5	19	14		6.5	<0.1			28	<0.2		
P02 SEGL 2023	BTB4007J	0.5	18/03/2020	Topsoil	PBTC-C11	1.8	5	<0.4	<0.1	<0.5	15	11		15	<0.1			16	<0.2		
P02 SEGL 2023	BTB4007K	1	18/03/2020	Silt	PBTC-C11	3.3	2	0.48	0.11	<0.5	22	27		18	<0.1			27	<0.2		
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	2.7	6.8	<0.4	<0.1	<0.5	19	17		16	0.16			23	<0.2		
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	4.3	10	<0.4	0.18	<0.5	18	19		100	<0.1			27	<0.2		
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	8.4	9.5	<0.4	0.1	<0.5	30	23		8.8	<0.1			36	<0.2		
P02 SEGL 2023	BTB4008	7	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	3.1	4.2	<0.4	<0.1	<0.5	25	19		6.3	<0.1			30	<0.2		
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand		2.4	7	<0.4	<0.1	<0.5	13	15		6.4	<0.1			19	<0.2		
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground		0.99	4.1	<0.4	<0.1	<0.5	5.5	7.9		3.4	<0.1			9.8	<0.2		
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground		1.4	6.9	<0.4	0.14	<0.5	21	120		10	<0.1			48	<0.2		
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground		1.6	8.3	<0.4	0.1	<0.5	21	32		8.3	<0.1			26	<0.2		
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1	1.8	8.6	<0.4	0.11	<0.5	27	30		12	<0.1			39	0.28		
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground		1.1	5.9	<0.4	0.1	<0.5	25	130		6.3	<0.1			46	<0.2		
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground		1.4	15	<0.4	0.1	<0.5	26	40		11	<0.1			33	0.21		
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel		3.1	12	<0.4	<0.1	<0.5	18	21		7.9	<0.1			27	<0.2		
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground		2.3	9.7	<0.4	<0.1	<0.5	20	40		23	<0.1			32	<0.2		
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground		1.6	15	<0.4	0.41	<0.5	21	46		1100	0.7			38	0.27		
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay		1.8	8.7	<0.4	0.11	<0.5	14	26		41	0.13			25	<0.2		
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1	1.9	11	<0.4	<0.1	<0.5	20	21		22	<0.1			18	0.41		
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1	3.1	4.3	<0.4	<0.1	<0.5	24	32		7.9	<0.1			25	<0.2		
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1	2.4	8.8	0.57	0.14	<0.5	41	56		48	0.19			48	1.4		
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2	1.2	17	<0.4	<0.1	<0.5	21	9.6		11	<0.1			23	<0.2		
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2	1.1	21	<0.4	<0.1	<0.5	9.9	16		21	0.11			19	<0.2		
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2	1.8	8.9	<0.4	<0.1	<0.5	13	27		15	<0.1			24	<0.2		
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18	8.8	14	0.54	0.14	<0.5	25	40		41	0.15			37	0.42		
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18	7.7	13	0.4	<0.1	<0.5	19	27		15	<0.1			28	0.27		
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18	5.5	14	<0.4	<0.1	<0.5	24	32		13	<0.1			37	<0.2		
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Made Ground	PBTC-C22	7.8	9.7	<0.4	0.12	<0.5	27	150		780	2.3			54	0.23		
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	8.4	7.3	0.42	<0.1	<0.5	27	53		210	0.32			35	0.38		
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22	7.4	7.4	0.42	0.1	<0.5	32	36		93	0.14			39	0.37		
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22	3.1	5.8	<0.4	<0.1	<0.5	25	22		5.1	<0.1			31	<0.2		
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22	3.4	6.4	<0.4	0.11	<0.5	14	38		22	<0.1			44	0.37		
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22	1.8	9.1	0.57	0.15	<0.5	25	44		43	0.1			31	0.55		
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22	22	7.1	<0.4	<0.1	<0.5	19	28		24	<0.1			21	0.56		
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22	8.5	6.4	<0.4	<0.1	<0.5	25	26		8.6	<0.1			30	<0.2		
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22	8.7	6.6	<0.4	0.13	<0.5	21	15		7.8	<0.1			32	<0.2		
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground		2.7	9.2	0.55	0.13	<0.5	22	31		44	0.15			31	0.4		
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground		2.8	6.7	<0.4	<0.1	<0.5	24	18		18	0.1			28	0.4		
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground		5.4	4.2	<0.4	<0.1	<0.5	23	22		6.8	<0.1			24	<0.2		
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49	7.2	14	<0.4	<0.1	<0.5	19	21		12	<0.1			19	<0.2		
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49	1.8	14	<0.4	<0.1	<0.5	19	27		7.9	<0.1			25	0.23		
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49	1.2	4.7	0.49	<0.1	<0.5	13	12		8.1	<0.1			19	<0.2		
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49	2	13	0.46	<0.1	<0.5	17	23		15	<0.1			24	<0.2		
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49	3.9	1.9	0.53	<0.1	<0.5	23	17		3.9	<0.1			31	<0.2		
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2	7	7.9	<0.4	<0.1	<0.5	24	41		9.8	<0.1			36	<0.2		
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2	3.7	11	<0.4	<0.1	<0.5	22	21		19	<0.1			33	<0.2		
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2	2.7	7.5	<0.4	<0.1	<0.5	23	36		8.9	<0.1			30	<0.2		
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1	3.2	20	<0.4	<0.1	<0.5	18	8.1		5.3	<0.1			19	<0.2		
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1	3.7	13	<0.4	<0.1	<0.5	24	40		17	<0.1			30	<0.2		
P02 SEGL																					

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

				Analyte Group	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	
				Analyte	Vanadium	Zinc	TPH Aliphatic >C5-C6	TPH Aliphatic >C6-C8	TPH Aliphatic >C8-C10	TPH Aliphatic >C10-C12	TPH Aliphatic >C12-C14	TPH Aliphatic >C14-C16	TPH Aliphatic >C16-C18	TPH Aromatic >C5-C7	TPH Aromatic >C7-C9	TPH Aromatic >C9-C11	TPH Aromatic >C11-C13	TPH Aromatic >C13-C15	TPH Aromatic >C15-C17	TPH Aromatic >C17-C19	TPH Aromatic >C19-C21	
				Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Commercial / Industrial GAC (SOM 1%)	9000	73000	3200	7800	2000	9700	59000	1600000	1600000	1600000	26000	56000	3500	16000	36000	28000	28000	
				Commercial / Industrial GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	
				Public Open Space (Park) GAC (SOM 1%)	5000	170000	95000	150000	14000	21000	25000	450000	450000	450000	76000	87000	7200	9200	10000	7600	5400	
				Public Open Space (Park) GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL
				Residential without Plant Uptake GAC (SOM 1%)	1200	40000	42	100	27	130	1100	65000	65000	65000	370	860	42	250	1800	1900	5400	
				Residential without Plant Uptake GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 Fugro 2016-A	BH16650	0.3	17/11/2015	Gravel	PBTC-C1	30	36	<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	19								
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2	37	170	<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4	<10	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-	31	63	<0.01	<0.01	<0.01	<1.5	1.9	4.5	6.3		<0.01	<0.01	<0.01	<0.9	<0.5	<0.6	
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-	41	45	<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4		<0.01	<0.01	<0.01	7.2	26	51	
P02 SEGL 2015	BHBT002	0.3	18/06/2014	Topsoil	-	26.4	60.4															
P02 SEGL 2015	BHBT002	1	18/06/2014	Silt	-	28.2	60.7															
P02 SEGL 2015	BHBT002-1A	1.5	26/01/2015	Made Ground	PBTC-C1	24.6	56.6															
P02 SEGL 2015	BHBT004-1	0.32	21/01/2015	Sand and Gravel	PBTC-C1	23.5	49.7	<0.01	<0.01	<0.01	<0.1	1.95	9.23	3.05		<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	
P02 SEGL 2015	BHBT011-1	1	15/01/2015	Sand and Gravel	PBTC-C1	28.5	43.6	<0.01	<0.01	<0.01	<0.1	6.36	4.38	10.2	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	
P02 SEGL 2015	BHBT022-1	0.3	06/01/2015	Sand and Gravel	PBTC-C1	22.8	47.6	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	
P02 SEGL 2015	BHBT022-1	2	06/01/2015	Sand and Gravel	PBTC-C1	22.9	42.7															
P02 SEGL 2015	BHBT024-1	0.7	11/12/2014	Sand	PBTC-C1	22.6	45.6															
P02 SEGL 2015	BHBT025-1	0.37	16/12/2014	Possible Made Ground	PBTC-C1	24.3	63.5	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	1.11	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	
P02 SEGL 2015	BHBT025-1	0.65	16/12/2014	Possible Made Ground	PBTC-C1	24.5	60.9															
P02 SEGL 2015	BHBT027-1	1	01/03/2014	Sand and Gravel	PBTC-C1	24.5	54.7	<0.01	0.0128	0.0255	0.0723	0.372	1.19	10.1	8.7		<0.01	<0.01	0.017	0.0478	<0.1	0.301
P02 SEGL 2015	BHBT027-1	3	03/12/2014	Sand and Gravel	PBTC-C1	30.8	47.4	<0.01	0.0249	0.052	1.04	91.1	127	47.6	1.8		<0.01	<0.01	0.0339	0.695	6.92	28.6
P02 SEGL 2015	BHBT027-1	5	04/12/2014	Sand and Gravel	PBTC-C1	31.1	50	0.0137	0.0342	0.0239	0.041	0.576	2.77	11.7	4.22		<0.01	<0.01	0.016	0.0274	<0.1	1.49
P02 SEGL 2015	BHBT038	0	03/09/2014	Topsoil	PBTC-C2	56.1	93.7															
P02 SEGL 2015	BHBT038	0.7	03/09/2014	Made Ground	PBTC-C2	114	62.1					248	312	656	149						2310	5520
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2																	
P02 SEGL 2015	BHBT038	1.4	03/09/2014	Cobbles	PBTC-C2	46.6	53.9	<0.01	<0.01	0.0842	0.91	7.99	11.3	23.6	<0.1	<0.01	<0.01	0.0702	0.607	50	121	
P02 SEGL 2015	BHBT040	0.5	07/01/2015	Made Ground	PBTC-C1	27.1	50.2	<0.01	<0.01	<0.01	<0.1	<0.1	5.12	1.5		<0.01	<0.01	<0.01	<0.1	<0.1	0.442	
P02 SEGL 2015	BHBT040	2	07/01/2015	Made Ground	PBTC-C1	19.7	64.4	<0.01	0.0281	0.0378	0.0961	1.56	3.68	62	15.6		<0.01	<0.01	0.0346	0.0637	0.47	0.842
P02 SEGL 2015	BHBT040	3	07/01/2015	Made Ground	PBTC-C1																	
P02 SEGL 2015	BHBT042	0	23/10/2014	Topsoil	PBTC-C1	25.9	48.9															
P02 SEGL 2015	BHBT042	1	23/10/2014	Sand and Gravel	PBTC-C1	26.7	39.8															
P02 SEGL 2015	BHBT042	3	24/10/2014	Sand and Gravel	PBTC-C1	23.6	31.4															
P02 SEGL 2015	BHBT043	2.5	17/10/2014	Sand and Gravel	-	23.6	51.9	<0.01	<0.01	<0.01	<0.1	0.127	2.07	113	18.4		<0.01	<0.01	<0.01	<0.1	<0.1	<0.1
P02 SEGL 2015	BHBT047	0.3	17/10/2014	Sand	-	39.9	55.7	<0.01	0.02	0.161	2.57	3.06	6.93	19.1	6.06		<0.01	<0.01	0.144	1.72	21.2	69.4
P02 SEGL 2015	BHBT047	1	17/10/2014	Sand	-			<0.01	<0.01	0.0126	0.113	3.08	8.22	29.2	11.5		<0.01	<0.01	<0.01	0.0748	2.03	5.83
P02 SEGL 2015	BHBT059	0.5	11/12/2014	Made Ground	PBTC-C1	44.5	112	<0.01	<0.01	<0.01	<0.1	<0.1	2.57	60.4	27.2		<0.01	<0.01	<0.01	<0.01	0.532	14.2
P02 SEGL 2015	BHBT059	1	11/12/2014	Made Ground	PBTC-C1																	
P02 SEGL 2015	BHBT061	0.5	08/09/2014	Made Ground	PBTC-C2																	
P02 SEGL 2015	BHBT061	1.7	08/09/2014	Made Ground	PBTC-C2	52.2	125															
P02 SEGL 2015	BHBT063	0.5	04/11/2014	Made Ground	PBTC-C1	17	24.4															
P02 SEGL 2015	BHBT063	0.8	04/11/2014	Sand and Gravel	PBTC-C1	26	39.7															
P02 SEGL 2015	BHBT064A	0.5	03/11/2014	Made Ground	PBTC-C1	32.1	32.1															
P02 SEGL 2015	BHBT064A	1	03/11/2014	Sand and Gravel	PBTC-C1	26.1	55.3															
P02 SEGL 2015	BHBT067-1	0.5	21/10/2014	Sand and Gravel	PBTC-C1	17	27	<0.01	<0.01	0.0122	0.0167	0.295	2.29	16.9	5.81		<0.01	<0.01	<0.01	0.0111	<0.1	2.32
P02 SEGL 2015	BHBT069	0.3	08/09/2014	Topsoil	-	30.1	96.9															
P02 SEGL 2015	BHBT069	1	09/09/2014	Gravel	-	22.8	57.7															
P02 SEGL 2015	BHBT077	0	22/09/2014	Made Ground	PBTC-C1, PBTC-C2	78.2	137	<0.04	<0.04	<0.04	<0.04	2.41	39	1560	1000		<0.04	<0.04	<0.04	<0.04	3.88	34.4
P02 SEGL 2015	BHBT077	0.4	22/09/2014	Made Ground	PBTC-C1, PBTC-C2	52.9	92.8	<0.04	<0.04	<0.04	<0.04	12.3	34.1	227	126		<0.04	<0.04	<0.04	<0.04	11.4	22.7
P02 SEGL 2015	BHBT077	1	22/09/2014	Made Ground	PBTC-C1, PBTC-C2	22.7	58.6	<0.01	<0.01	<0.01	<0.1	<0.1	1.74	43.1	29.1		<0.01	<0.01	<0.01	<0.01	<0.1	0.783
P02 SEGL 2015	BHBT077	2	22/09/2014	Gravel	PBTC-C1, PBTC-C2	33.7	57.5	0.0207	0.0512	0.0122	<0.1	<0.1	1.03	29.2	5.87		<0.01	<0.01	<0.01	<0.01	<0.1	1.77
P02 SEGL 2015	BHBT084	0.6	09/10/2014	Gravel	PBTC-C1, PBTC-C2	19.3	43.1															
P02 SEGL 2015	BHBT085	0.4	01/10/2014	Made Ground	PBTC-C1, PBTC-C2	13	22.2															
P02 SEGL 2015	BHBT086	0.3	13/01/2015	Made Ground	PBTC-C1	16.8	26.1															
P02 SEGL 2015	BHBT086	0.8	15/01/2015	Sand	PBTC-C1	25.4	56.8															
P02 SEGL 2015	BHBT090	0.5	20/08/2014	Made Ground	PBTC-C2	30.9																

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

				Analyte Group	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	
				Analyte	Vanadium	Zinc	TPH Aliphatic >C5-C6	TPH Aliphatic >C6-C8	TPH Aliphatic >C8-C10	TPH Aliphatic >C10-C12	TPH Aliphatic >C12-C16	TPH Aliphatic >C16-C21	TPH Aliphatic >C21-C35	TPH Aromatic >C5-C7	TPH Aromatic >C6-C8	TPH Aromatic >C7-C10	TPH Aromatic >C8-C10	TPH Aromatic >C10-C12	TPH Aromatic >C12-C16	TPH Aromatic >C16-C21	
				Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Commercial / Industrial GAC (SOM 1%)	9000	73000	3200	7800	2000	9700	59000	1600000	1600000	1600000	26000	56000	3500	16000	36000	28000	
				Commercial / Industrial GAC Guidance Criteria	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
				Public Open Space (Park) GAC (SOM 1%)	5000	170000	95000	150000	14000	21000	25000	450000	450000	450000	76000	87000	7200	9200	10000	7600	
				Public Open Space (Park) GAC Guidance Criteria	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
				Residential without Plant Uptake GAC (SOM 1%)	1200	40000	42	100	27	130	1100	65000	65000	65000	370	860	42	250	1800	1900	
				Residential without Plant Uptake GAC Guidance Criteria	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1	23.5	57	<0.01	<0.01	0.0153	0.0415	<0.1	<0.1	<0.1	<0.01	<0.01	0.0142	0.0273	<0.1	0.245	
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1																
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1	34.5	38.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.284	2.49	<0.1	<0.01	<0.01	<0.01	<0.1	3.98	
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1			<0.01	<0.01	<0.01	<0.01	0.65	1.53	11	6.27				1.74	15.9	
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1																
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1	16.3	63.4														
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1	12.1	16.2	0.0171	0.0749	0.318	0.74	7.12	44.3	329	143	<0.01	<0.01	0.229	0.494	<0.1	13.1
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Gravel	PBTC-C1	16.3	73.6	0.0132	0.0352	0.118	0.265	<0.1	14	105	40.7	<0.01	<0.01	0.0792	0.177	<0.1	5.46
P02 SEGL 2015	BHBT166	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2	18.9	55.5														
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2	13.9	20	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	11	1.04	<0.01	<0.01	<0.01	<0.01	<0.1	
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2	30.1	40.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	11.9	0.975	<0.01	<0.01	<0.01	<0.01	<0.1	
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1	24.6	36.5														
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1	30.5	41.4	<0.01	<0.01	0.012	<0.01	<0.1	<0.1	10.5	1.31	<0.01	<0.01	<0.01	<0.01	<0.1	4.44
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1	34.8	53.7	<0.01	<0.01	0.0138	0.0115	<0.1	<0.1	227	41.6	<0.01	<0.01	0.0207	<0.01	<0.1	
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1																
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2	32.4	51.5														
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground																	
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)		45	44.8	<0.01	0.0169	0.0561	0.265	27.7	61.6	190	116	<0.01	<0.01	0.0413	0.176	183	651
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand		18.9	25.4	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	17.2	38.6														
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	24	33.1														
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	27.1	26.3														
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	24.9	34.7														
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2	17.7	27.6														
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2	15.4	33.4	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	63.7	12.6	<0.01	<0.01	<0.01	<0.01	<0.1	
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	29.9	42.7	<0.01	0.0113	0.0215	0.0215	5.04	11	71.4	10.5	<0.01	<0.01	0.0147	0.0147	0.609	2.34
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2	31.3	46.6														
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	64	57.7	0.0111	0.0211	0.0899	0.47	62.8	123	349	205	<0.01	<0.01	0.0899	0.313	213	715
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	91.7	58.9	0.0101	0.0179	0.0762	0.446	69.8	116	327	229	<0.01	<0.01	0.0851	0.298	117	473
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1	26.5	45.8														
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1	43.3	68.7														
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1	24.4	40.3														
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1			<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	17.3	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.962
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1																
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1			<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4	<10	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1			<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4	<10	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6
P03 Fugro 2019	TB2004	1	22/02/2018	Gravel	PBTC-C1			<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4	<10	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6
P03 Fugro 2019	TB2008	0.5	27/03/2018	Sand				<0.01	<0.01	<0.01	<1.5	<1.2	<1.5	<3.4	<10	<0.01	<0.01	<0.01	<0.9	<0.5	<0.6
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1	33.3	60.4	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	8	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.71
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1																
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil		34.2	72														
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel		25	32.1														
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil		42	93.5														
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel		26.1	50.7														
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1	25.8	38.8														
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground		36.6	44.6														
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground		34.7	55.1	<0.01	<0.01	<0.01	<0.01	0.76	2.19	11.8	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground																	
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground		29.2	37.6	<0.01	<0.01	<0.01	<0.01	<0.1	0.567	11.7	0.345	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand		32.9	66														
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand		30.7	61.4														

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

				Analyte Group	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	
				Analyte	Vanadium	Zinc	TPH Aliphatic >C5-C6	TPH Aliphatic >C6-C8	TPH Aliphatic >C8-C10	TPH Aliphatic >C10-C12	TPH Aliphatic >C12-C16	TPH Aliphatic >C16-C21	TPH Aliphatic >C21-C35	TPH Aliphatic >C35-C44	TPH Aliphatic >C44-C55	TPH Aromatic >C5-C7	TPH Aromatic >C6-C8	TPH Aromatic >C7-C10	TPH Aromatic >C8-C12	TPH Aromatic >C10-C16	TPH Aromatic >C12-C21	
				Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Commercial / Industrial GAC (SOM 1%)	9000	730000	3200	7800	2000	9700	59000	1600000	1600000	1600000	26000	56000	3500	16000	36000	28000	28000	
				Commercial / Industrial GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL
				Public Open Space (Park) GAC (SOM 1%)	5000	170000	95000	150000	14000	21000	25000	450000	450000	450000	76000	87000	7200	9200	10000	7600	7600	
				Public Open Space (Park) GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL
				Residential without Plant Uptake GAC (SOM 1%)	1200	40000	42	100	27	130	1100	65000	65000	65000	370	860	42	250	1800	1900	1900	
				Residential without Plant Uptake GAC Guidance Criteria	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL
GI Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
PO2 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2	63	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11	48	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11	60	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007A	2	17/03/2020	Silt	PBTC-C11	71	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007B	1	18/03/2020	Silt	PBTC-C11	63	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11	49	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11	46	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11	37	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11	54	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11	38	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11	62	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11	93	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	39	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	75	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	64	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11	45	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4013	3	27/02/2020	Sand	-	37	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-	21	<0.01	<0.01	<0.1	51	240	410	1800	<0.1	<0.01	110	710	2600	5100	<0.1	<0.1	
PO2 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-	100	<0.01	<0.01	<0.1	20	45	63	180	<0.1	<0.01	17	300	620	1400	<0.1	<0.1	
PO2 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-	52	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	59	150	<0.1	<0.1	
PO2 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1	80	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-	92	<0.01	<0.01	<0.1	56	240	350	730	34	<0.01	<0.01	99	890	2800	5500	<0.1	<0.1
PO2 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-	64	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-	45	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-	58	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-	530	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4021	2	11/03/2020	Clay	-	69	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1	56	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1	45	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1	85	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2	28	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2	22	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2	45	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18	90	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18	56	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18	77	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22	120	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22	93	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	91	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22	50	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	
PO2 SEGL 2023	BTB4028	4.3	13/0																			

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-TPHCWG		UK&I-RA-Other TPH		UK&I-RA-PAH		UK&I-RA-PAH		UK&I-RA-PAH		UK&I-RA-PAH		UK&I-RA-PAH		UK&I-RA-PAH		UK&I-RA-PAH				
		Analyte	Unit	TPH Aromatic >C21-C35	TPH Aromatic >C35-C44	TPH Aromatic >C40-C44	TPH Aromatic >C5-C35	Total Aromatic Hydrocarbons	Total Aliphatic Hydrocarbons	TPH Aliphatic & Aromatic >C6-C40	Total Petroleum Hydrocarbons	EPH >C12-16	Naphthalene	Fluorene	Acenaphthylene	Acenaphthene	Anthracene	Phenanthrene	Fluoranthene	Pyrene	Benzo(a)anthracene																	
		Commercial / Industrial GAC (SOM 1%)	28000	28000									1000	63000	63000	84000	520000	22000	23000	54000	17000																	
		Commercial / Industrial GAC Guidance Criteria	54UL	54UL									54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL																	
		Public Open Space (Park) GAC (SOM 1%)	7800	7800									1200	20000	29000	29000	150000	6200	6300	15000	6300																	
		Public Open Space (Park) GAC Guidance Criteria	54UL	54UL									54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL																	
		Residential without Plant Uptake GAC (SOM 1%)	1900	1900									23	2800	2900	3000	31000	1300	1500	3700	11																	
		Residential without Plant Uptake GAC Guidance Criteria	54UL	54UL									54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL	54UL																	
GI Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																																	
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2	<0.1	<0.1																															
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007D	1.5	18/03/2020	Sand	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007E	0.2	18/03/2020	Topsoil	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007F	1	18/03/2020	Sand	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007G	1.8	18/03/2020	Sand	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4007H	0.5	18/03/2020	Topsoil	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4008	1	13/03/2020	Silt	PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4008	7	13/03/2020	Made Ground	PBTC-C1, PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	PBTC-C1, PBTC-C11	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-	17000	2100	27000	2500																													
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-	3900	210	6400	310																													
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-	840	<0.1	1100	51																													
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-	13000	970	24000	1400																													
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-	48	<0.1	63	<1																													
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-	210	<0.1	230	35																													
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2	2000	<0.1	2000	41																													
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2	190	<0.1	190	49																													
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18	130	<0.1	130	88																													
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22	<0.1	<0.1	<1	<1																													
P02 SEGL 2023	BTB4028	4.3	13/02																																			

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)	Analyte Group																		
						UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG
						TPH Aromatic >C21-C35	TPH Aromatic >C35-C44	TPH Aromatic >C40-C44	TPH Aromatic >C5-C35	Total Aromatic Hydrocarbons	Total Aliphatic Hydrocarbons	TPH Aliphatic & Aromatic >C6-C40	Total Petroleum Hydrocarbons	EPH >C12-16	Naphthalene	Fluorene	Acenaphthylene	Acenaphthene	Anthracene	Phenanthrene	Fluoranthene	Pyrene	Benzo(a)anthracene	
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Commercial / Industrial GAC (SOM 1%)						28000	28000																	
Commercial / Industrial GAC Guidance Criteria						54UL	54UL																	
Public Open Space (Park) GAC (SOM 1%)						7800	7800																	
Public Open Space (Park) GAC Guidance Criteria						54UL	54UL																	
Residential without Plant Uptake GAC (SOM 1%)						1900	1900																	
Residential without Plant Uptake GAC Guidance Criteria						54UL	54UL																	
P02 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	<0.1	<0.1																	
P02 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	<0.1	<0.1																	
P02 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2	<0.1	<0.1																	
P02 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2	<0.1	<0.1																	
P02 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4070	2	09/03/2020	Made Ground	-	330	<0.1																	
P02 SEGL 2023	BTB4070	2	09/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4070	0.3	04/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4000	1	04/03/2020	Gravel	-	6.9	<0.1																	
P02 SEGL 2023	BTB4000A	0.3	11/05/2021	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4000A	1	17/05/2021	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4001	0.4	04/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4001	1	04/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4001A	0.4	17/05/2021	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4001A	1	17/05/2021	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4002	0.3	04/03/2020	Topsoil	-	100	<0.1																	
P02 SEGL 2023	BTB4002	1	04/03/2020	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4002A	0.3	17/05/2021	Topsoil	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4002A	1	17/05/2021	Sand	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4003	0.5	04/03/2020	Sand	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4003	1	04/03/2020	Sand	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4003A	0.5	17/05/2021	Sand	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4003A	1	17/05/2021	Sand	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4004	0.4	04/03/2020	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4004	0.6	04/03/2020	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4004	1	04/03/2020	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4004A	0.4	19/05/2021	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4004A	0.6	19/05/2021	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4004A	1	19/05/2021	Sand	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4005	0.3	04/03/2020	Made Ground	PBTC-C22	2400	<0.1																	
P02 SEGL 2023	BTB4005	0.5	04/03/2020	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4005	1	04/03/2020	Sand	PBTC-C22	98	<0.1																	
P02 SEGL 2023	BTB4005A	0.3	27/05/2021	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4005A	0.5	19/05/2021	Made Ground	PBTC-C22	<0.1	<0.1																	
P02 SEGL 2023	BTB4005A	1	19/05/2021	Sand	PBTC-C22	44	<0.1																	
P02 SEGL 2023	BTB4006	0.5	05/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4006	1	05/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4006A	0.5	17/05/2021	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4006A	1	17/05/2021	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4007	0.5	05/03/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4007	1.1	05/03/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4007A	0.5	17/05/2021	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4007A	1	17/05/2021	Gravel	-	3700	490																	
P02 SEGL 2023	BTB4008	0.5	05/03/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4008	1.1	05/03/2020	Made Ground	-	23	<0.1																	
P02 SEGL 2023	BTB4008A	0.5	17/05/2021	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4008A	1.1	17/05/2021	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTB4009	0.6	05/03/2020	Gravel	PBTC-C49	<0.1	<0.1																	
P02 SEGL 2023	BTB4009A	0.6	17/05/2021	Sand	PBTC-C49	<0.1	<0.1																	
P02 SEGL 2023	BTB4010	0.25	09/03/2020	Made Ground	PBTC-C49	590	<0.1																	
P02 SEGL 2023	BTB4010	0.4	09/03/2020	Made Ground	PBTC-C49	250	<0.1																	
P02 SEGL 2023	BTB4010	1	09/03/2020	Sand	PBTC-C49	<0.1	<0.1																	
P02 SEGL 2023	BTB4011	0.5	09/03/2020	Made Ground	PBTC-C49	<0.1	<0.1																	
P02 SEGL 2023	BTB4012	0.3	05/02/2020	Topsoil	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4013	0.5	05/03/2020	Gravel	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4013A	0.5	17/05/2021	Gravel	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4014	0.5	05/02/2020	Gravel	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTB4015	0.5	05/02/2020	Sand	PBTC-C1	<0.1	<0.1																	
P02 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2	2300	<0.1																	
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground	-	<0.1	<0.1																	
P02 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel	-	<0.1	<0.1																	

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)	Analyte Group																		
						UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH
Analyte						Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)Pyrene	Dibenz(a,h)Anthracene	Benzo(g,h,i)perylene	Coronene	Total PAH-16MS plus Coronene	Total PAH 16	Total of 17 PAHs	Benzene	Toluene	Ethylbenzene	m & p-Xylene	o-Xylene	Xylenes, Total	Total BTEX	
Unit						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)						350	440	1200	350	500	35	3900					27	56000	5700	5900	6600			
Commercial / Industrial GAC Guidance Criteria						S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL					C45L	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	
Public Open Space (Park) GAC (SOM 1%)						33	13	370	11	150	11	1400					90	87000	17000	17000	17000			
Public Open Space (Park) GAC Guidance Criteria						S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL					S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	
Residential without Plant Uptake GAC (SOM 1%)						30	32	110	32	45	0.31	360					0.38	880	83	79	88			
Residential without Plant Uptake GAC Guidance Criteria						S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL				S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	S4UL	
P02 Fugro 2016-A	BH16650	0.3	17/11/2015	Gravel	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-	2.6	1.9	1	2.7	3.5	1.1	1.5				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P02 SEGL 2015	BHBT002	1	18/06/2014	Topsoil	-	-	-	-	-	-	-	-				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P02 SEGL 2015	BHBT002	1	18/06/2014	Silt	-	-	-	-	-	-	-	-				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
P02 SEGL 2015	BHBT002-1A	1.5	26/01/2015	Made Ground	PBTC-C1	0.303	0.518	0.162	0.492	0.245	0.0643	0.277			4.53									
P02 SEGL 2015	BHBT004-1	0.32	21/01/2015	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT011-1	1	15/01/2015	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT022-1	0.3	06/01/2015	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT022-1	2	06/01/2015	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT024-1	0.7	11/12/2014	Sand	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT025-1	0.37	16/12/2014	Possible Made Ground	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT025-1	0.65	16/12/2014	Possible Made Ground	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT027-1	1	01/03/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT027-1	3	03/12/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT027-1	5	04/12/2014	Sand and Gravel	PBTC-C1	0.0813	0.0542	0.0308	0.043	<0.018	<0.023	<0.024			4.53	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT038	0	03/09/2014	Topsoil	PBTC-C2	-	-	-	-	-	-	-				<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT038	0.7	03/09/2014	Made Ground	PBTC-C2	2.21	2.12	99.4	2.04	84.4	2.68	98.5			5190									
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2	2.21	2.12	99.4	2.04	84.4	2.68	98.5			5190									
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2	2.21	2.12	99.4	2.04	84.4	2.68	98.5			5190									
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2	2.21	2.12	99.4	2.04	84.4	2.68	98.5			5190									
P02 SEGL 2015	BHBT040	0.5	07/01/2015	Made Ground	PBTC-C1	0.0659	0.135	0.0542	0.121	0.0677	<0.023	0.0818			0.985	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT040	2	07/01/2015	Made Ground	PBTC-C1	0.0997	0.0936	0.0364	0.067	0.0371	<0.023	0.0371			0.817	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT040	3	07/01/2015	Made Ground	PBTC-C1	0.0336	0.0547	0.0199	0.0468	0.0232	<0.023	0.0304			0.41	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT042	0	23/10/2014	Topsoil	PBTC-C1	-	-	-	-	-	-	-				<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT042	1	23/10/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			0.14	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT042	3	24/10/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			0.14	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT043	2.5	17/10/2014	Sand and Gravel	-	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT047	0.3	17/10/2014	Sand	-	3.25	1.67	1.66	3.7	0.572	1.92	68.5	<2		<0.009	0.00316	0.00421	0.02	0.0126	0.04	0.04	<0.024		
P02 SEGL 2015	BHBT047	1	17/10/2014	Sand	-	0.443	0.32	0.177	0.33	0.153	0.0568	0.18	<2		<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT059	0.5	11/12/2014	Made Ground	PBTC-C1	1.35	2.68	1.03	2.18	1.29	0.281	1.53			8.17	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT059	1	11/12/2014	Made Ground	PBTC-C1	1.3	2.46	0.864	1.98	1.08	0.359	1.26			19.4	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT061	0.5	08/09/2014	Made Ground	PBTC-C2	-	-	-	-	-	-	-				<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT061	1.7	08/09/2014	Made Ground	PBTC-C2	0.042	0.1	0.0238	0.0313	0.037	<0.023	0.0572			0.73	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT063	0.5	04/11/2014	Made Ground	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT063	0.8	04/11/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.01	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT064A	0.5	03/11/2014	Made Ground	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT064A	1	03/11/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT067-1	0.5	21/10/2014	Sand and Gravel	PBTC-C1	<0.01	<0.015	<0.014	<0.015	<0.018	<0.023	<0.024			<0.118	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0.024		
P02 SEGL 2015	BHBT069	0.3	08/09/2014	Topsoil	-	0.478	0.539	0.276	0.515	0.276	0.0923	0.364			5.42	<0.009	<0.002	<0.003	<0.006	<0.003	<0.003	<0		

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC					
		Analyte	Methyl Tert-Butyl Ether	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethane	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichloropropane				
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
		Commercial / Industrial GAC (SOM 1%)	7900	110	270	660	94	1.2	280	26		102		42			0.67	3.3						
		Commercial / Industrial GAC Guidance Criteria	EIC	S4UL	S4UL	S4UL	EIC	S4UL	EIC	EIC		S4UL		EIC			S4UL	EIC						
		Public Open Space (Park) GAC (SOM 1%)		1500	1800	57000		70				770					21							
		Public Open Space (Park) GAC Guidance Criteria		S4UL	S4UL	S4UL		S4UL				S4UL					S4UL							
		Residential without Plant Uptake GAC (SOM 1%)	73	1.5	3.9	9	0.88	0.017	2.5	0.23		1.5		0.41			0.0092	0.024						
		Residential without Plant Uptake GAC Guidance Criteria	EIC	S4UL	S4UL	S4UL	EIC	S4UL	EIC	EIC		S4UL		EIC			S4UL	EIC						
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																			
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1	<0.005	<0.1	<0.1	<0.07	<0.1	<0.09	<0.08	<0.1	<0.2	<0.16	<0.09	<0.14	<0.1	<0.05	<0.1	<0.08	<0.07		
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1																			
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1																			
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1																			
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1																			
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1	<0.005																		
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1																			
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground																				
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)		<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand		<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2																			
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2																			
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.1	<0.1	<0.07	<0.1	<0.09	<0.08	<0.1	<0.1	<0.2	<0.16	<0.09	<0.14	<0.1	<0.05	<0.1	<0.08	<0.07	
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.1	<0.1	<0.07	<0.1	<0.09	<0.08	<0.1	<0.1	<0.2	<0.16	<0.09	<0.14	<0.1	<0.05	<0.1	<0.08	<0.07	
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1																			
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1																			
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1																			
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1	<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1																			
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1																			
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1																			
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1																			
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand																				
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1	<0.005																		
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1																			
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil																				
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel																				
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil																				
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel																				
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1																			
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground																				
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground		<0.005	<0.01	<0.01	<0.007	<0.01	<0.009	<0.008	<0.01	<0.01	<0.02	<0.016	<0.009	<0.014	<0.01	<0.005	<0.01	<0.008	<0.007	
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground		<0																		

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC			
Analyte		Methyl Tert-Butyl Ether	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethane	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichloropropane			
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
Commercial / Industrial GAC (SOM 1%)		7900	110	270	660	94	1.2	280	26		102		42			0.67	3.3					
Commercial / Industrial GAC Guidance Criteria		EIC	S4UL	S4UL	S4UL	S4UL	S4UL	EIC	EIC		S4UL		EIC			S4UL	EIC					
Public Open Space (Park) GAC (SOM 1%)			1500	1800	57000		70				770					21						
Public Open Space (Park) GAC Guidance Criteria			S4UL	S4UL	S4UL		S4UL				S4UL					S4UL						
Residential without Plant Uptake GAC (SOM 1%)		73	1.5	3.9	9	0.88	0.017	2.5	0.23		1.5		0.41			0.0092	0.024					
Residential without Plant Uptake GAC Guidance Criteria		EIC	S4UL	S4UL	S4UL	EIC	S4UL	EIC	EIC		S4UL		EIC			S4UL	EIC					
GI Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																	
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand																		
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	0.027	<0.05	<0.005	<0.002	<0.001	0.009	<0.002
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	0.06	<0.05	<0.005	<0.002	<0.001	0.031	<0.002
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	0.0089	<0.05	<0.005	<0.002	<0.001	0.0047	<0.002
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1																	
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	0.062	<0.05	<0.005	<0.002	<0.001	0.036	<0.002
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel																		
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground																		
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay																		
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18																	
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18																	
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18																	
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground		<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground																		
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49																	
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.05	<0.001	<0.05	<0.005	<0.002	<0.001	<0.001	<0.002
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1	<0.001	<0.002	<0.001	<0.01	<0.001	<0.001	<1	<0.001	<0.002	<0.							

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	
Analyte		2,2-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	4-Isopropyltoluene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromomethane	Carbon Disulfide	Chlorobenzene	Chloroethane	Chloromethane	cis 1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)						97		2.1		11	56	960	1	14					270	
Commercial / Industrial GAC Guidance Criteria						EIC		EIC		S4UL	S4UL	EIC	EIC	EIC					EIC	
Public Open Space (Park) GAC (SOM 1%)										1300	1300									
Public Open Space (Park) GAC Guidance Criteria										S4UL	S4UL									
Residential without Plant Uptake GAC (SOM 1%)						0.91		0.019		0.14	0.46	8.4	0.0085	0.12					2.1	
Residential without Plant Uptake GAC Guidance Criteria						EIC		EIC		S4UL	S4UL	EIC	EIC	EIC					EIC	
GI Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2															
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-															
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-															
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-															
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	0.0012	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-															
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18															
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18															
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18															
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49															
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.02	<0.001	<0.002	<0.001	<0.001	<0.01	<0.01	<0.001	<0.001
P02 SEGL 2023																				

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	
Analyte		2,2-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	4-Isopropyltoluene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromomethane	Carbon Disulfide	Chlorobenzene	Chloroethane	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Dichloromethane	
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)						97		2.1		1.1	56	960	1	14					270	
Commercial / Industrial GAC Guidance Criteria						EIC		EIC		S4UL	S4UL	EIC	EIC	EIC					EIC	
Public Open Space (Park) GAC (SOM 1%)										1300	1300									
Public Open Space (Park) GAC Guidance Criteria										S4UL	S4UL									
Residential without Plant Uptake GAC (SOM 1%)						0.91		0.019		0.14	0.46	8.4	0.0085	0.12					2.1	
Residential without Plant Uptake GAC Guidance Criteria						EIC		EIC		S4UL	S4UL	EIC	EIC	EIC					EIC	
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
PO2 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
PO2 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
PO2 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2															
PO2 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2															
PO2 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1															
PO2 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-															
PO2 SEGL 2023	BTB4070	2	09/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4000	0.3	04/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4000A	0.3	17/05/2021	Sand	-															
PO2 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-															
PO2 SEGL 2023	BTH4001	0.4	04/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4001	1	04/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4001A	0.4	17/05/2021	Sand	-															
PO2 SEGL 2023	BTH4001A	1	17/05/2021	Sand	-															
PO2 SEGL 2023	BTH4002	0.3	04/03/2020	Topsoil	-															
PO2 SEGL 2023	BTH4002	1	04/03/2020	Sand	-															
PO2 SEGL 2023	BTH4002A	0.3	17/05/2021	Topsoil	-															
PO2 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-															
PO2 SEGL 2023	BTH4003	0.5	04/03/2020	Sand	PBTC-C1															
PO2 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1															
PO2 SEGL 2023	BTH4003A	0.5	17/05/2021	Sand	PBTC-C1															
PO2 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1															
PO2 SEGL 2023	BTH4004	0.4	04/03/2020	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4004	1	04/03/2020	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4004A	0.4	19/05/2021	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4004A	1	19/05/2021	Sand	PBTC-C22															
PO2 SEGL 2023	BTH4005	0.3	04/03/2020	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4005	1	04/03/2020	Sand	PBTC-C22															
PO2 SEGL 2023	BTH4005A	0.3	27/05/2021	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22															
PO2 SEGL 2023	BTH4005A	1	19/05/2021	Sand	PBTC-C22															
PO2 SEGL 2023	BTH4006	0.5	05/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4006	1	05/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4006A	0.5	17/05/2021	Gravel	-															
PO2 SEGL 2023	BTH4006A	1	17/05/2021	Gravel	-															
PO2 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-															
PO2 SEGL 2023	BTH4007	1.1	05/03/2020	Gravel	-															
PO2 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-															
PO2 SEGL 2023	BTH4007A	1	17/05/2021	Gravel	-															
PO2 SEGL 2023	BTH4008	0.5	05/03/2020	Made Ground	-															
PO2 SEGL 2023	BTH4008	1.1	05/03/2020	Made Ground	-															
PO2 SEGL 2023	BTH4008A	0.5	17/05/2021	Made Ground	-															
PO2 SEGL 2023	BTH4008A	1.1	17/05/2021	Made Ground	-															
PO2 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49															
PO2 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49															
PO2 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49															
PO2 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49															
PO2 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49															
PO2 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49															
PO2 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1															
PO2 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1															
PO2 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1															
PO2 SEGL 2023	BTH4014	0.5	05/02/2020	Gravel	PBTC-C1															
PO2 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1															
PO2 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel	-															
PO2 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2															
PO2 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel	-															
PO2 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2															
PO2 SEGL 2023	BTT4019	0.5	27/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4019	1.6	27/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4019	3.6	27/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4020	0.3	19/02/2020	Made Ground	PBTC-C2															
PO2 SEGL 2023	BTT4020	1	19/02/2020	Gravel	PBTC-C2															
PO2 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-															
PO2 SEGL 2023	BTT4024A	0.3	18/05/2021	Made Ground	PBTC-C15															
PO2 SEGL 2023	BTT4024A	0.5	18/05/2021	Made Ground	PBTC-C15															
PO2 SEGL 2023	BTT4024A	1.15	18/05/2021	Sand	PBTC-C15															
PO2 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15															
PO2 SEGL 2023	BTT4025A	0.5	18/05/2021	Made Ground	PBTC-C15															
PO2 SEGL 2023	BTT4025A	1.15	18/05/2																	

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC
		Analyte	Isopropylbenzene	Hexachlorobutadiene	N-Butylbenzene	N-Propylbenzene	Sec-Butylbenzene	Styrene	Tert-amyl methyl ether	Tert-Butylbenzene	Tetrachloroethene	Tetrachloromethane	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Tribromomethane	Trichlorofluoromethane	Trichloromethane	Vinyl Chloride	1,1'-BIPHENYL	Benzyl Alcohol
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)	1400	31		4100		3300			19	2.9	22		760	99	99	0.059	18000	
		Commercial / Industrial GAC Guidance Criteria	EIC	S4UL		EIC		EIC			S4UL	S4UL	EIC		EIC	S4UL	S4UL	S4UL	EIC	
		Public Open Space (Park) GAC (SOM 1%)		48							810	190				2600	4.8			
		Public Open Space (Park) GAC Guidance Criteria		S4UL							S4UL	S4UL				S4UL	S4UL	S4UL		
		Residential without Plant Uptake GAC (SOM 1%)	12	0.32		40		35			0.18	0.026	0.19		5.2	1.2	0.0077	220		
		Residential without Plant Uptake GAC Guidance Criteria	EIC	S4UL		EIC		EIC			S4UL	S4UL	EIC		EIC	S4UL	S4UL	EIC		
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1	<0.05	<0.2	<0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.06	<0.08	<0.06	
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground																
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)		<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	0
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand		<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2															
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1															
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1	<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1															
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1															
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1															
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1															
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand																
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil																
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel																
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil																
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel																
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground																
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground		<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground		<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground		<0.005	<0.02	<0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.006	<0.008	<0.006	
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand																
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand																
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2															
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2	</														

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-VOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	
		Analyte	1,3-Dichloropropane	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dinitrobenzene	1,3-Dinitrobenzene	P-Dinitrobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Methylnaphthalene	Aniline	2-Nitroaniline	3-Nitroaniline	4-Bromophenyl Ether	4-Chloroaniline	4-Chlorophenylether
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)	220	2000	30	4400					3700	1900	390							
		Commercial / Industrial GAC Guidance Criteria	S4UL	S4UL	S4UL	S4UL					EIC	EIC	EIC							
		Public Open Space (Park) GAC (SOM 1%)	1700	24000	390	36000														
		Public Open Space (Park) GAC Guidance Criteria	S4UL	S4UL	S4UL	S4UL														
		Residential without Plant Uptake GAC (SOM 1%)	2.6	24	0.44	61					170	78	3.8							
		Residential without Plant Uptake GAC Guidance Criteria	S4UL	S4UL	S4UL	S4UL				EIC	EIC	EIC								
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	27/05/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1															
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground	-															
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)	-															
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand	-															
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2															
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1															
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1															
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1															
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1															
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1															
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-															
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel	-															
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel	-															
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand	-															
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand	-															
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2															
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	TPBT091	0.5	14/08/2014	Silt	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT092	0	13/08/2014	Topsoil	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT092	0.5	13/08/2014	Sand and Gravel	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT095	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT095	0.5	29/09/2014	Sand and Gravel	PBTC-C22															
P02 SEGL 2015	TPBT097	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT097	0.5	29/09/2014	Sand	PBTC-C22															
P02 SEGL 2015	TPBT102	0.5	24/09/2014	Made Ground	-															
P02 SEGL 2015	TPBT104	0.5	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT104	1	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT106	0.5	10/10/2014	Made Ground	PBTC-C1, PBTC-C49															
P02 SEGL 2015	TPBT111	0.5	18/09/2014	Made Ground	PBTC-C49		</													

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 Assessment Criteria from Soils (Generic Assessment Criteria)

Analyte Group		UK&I-RA-VOG	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	
Analyte		1,3-Dichloropropane	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dinitrobenzene	1,3-Dinitrobenzene	P-Dinitrobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Methylnaphthalene	Aniline	2-Nitroaniline	3-Nitroaniline	4-Bromophenyl Ether	4-Chloroaniline	4-Chlorophenylether	
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Commercial / Industrial GAC (SOM 1%)			220	2000	30	4400				3700	1900	390								
Commercial / Industrial GAC Guidance Criteria			S4UL	S4UL	S4UL	S4UL				EIC	EIC	EIC								
Public Open Space (Park) GAC (SOM 1%)			1700	24000	390	36000														
Public Open Space (Park) GAC Guidance Criteria			S4UL	S4UL	S4UL	S4UL														
Residential without Plant Uptake GAC (SOM 1%)			2.6	24	0.44	61				170	78	3.8								
Residential without Plant Uptake GAC Guidance Criteria			S4UL	S4UL	S4UL	S4UL				EIC	EIC	EIC								
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2															
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-															
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-															
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-															
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-															
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-															
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18															
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18															
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18															
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22															
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49															
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49															
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49															
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2															

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 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	
		Analyte	4-Nitroaniline	Azobenzene	Bis(2-Chloroethoxy)Methane	Bis(2-Chloroethyl)Ether	Bis(2-Chloroisopropyl)Ether	Bis(2-Ethylhexyl)Phthalate	Butylbenzyl Phthalate	Carbazole	Dibenzofuran	Diethyl Phthalate	Dimethylphthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	Nitrobenzene
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)						85000 EIC	940000 EIC				150000 EIC	15000 EIC	89000 EIC	110 S4UL	22 EIC			
		Commercial / Industrial GAC Guidance Criteria																		
		Public Open Space (Park) GAC (SOM 1%)																		
		Public Open Space (Park) GAC Guidance Criteria																		
		Residential without Plant Uptake GAC (SOM 1%)						2700 EIC	42000 EIC				1800 EIC	450 EIC	3400 EIC	4.1 S4UL	0.22 EIC			
		Residential without Plant Uptake GAC Guidance Criteria																		
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 Fugro 2016-A	BH16650	0.3	17/11/2015	Gravel	PBTC-C1															
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2															
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-															
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-	<0.1	<0.1	<0.1												
P02 SEGL 2015	BHBT002	0.3	18/06/2014	Topsoil	-															
P02 SEGL 2015	BHBT002	1	18/06/2014	Silt	-															
P02 SEGL 2015	BHBT002-1A	1.5	26/01/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT004-1	0.32	21/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT011-1	1	15/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT022-1	0.3	06/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT022-1	2	06/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT024-1	0.7	11/12/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT025-1	0.37	16/12/2014	Possible Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT025-1	0.65	16/12/2014	Possible Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT027-1	1	01/03/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT027-1	3	03/12/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT027-1	5	04/12/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT038	0	03/09/2014	Topsoil	PBTC-C2															
P02 SEGL 2015	BHBT038	0.7	03/09/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	BHBT038	1.1	03/09/2014	Cobbles	PBTC-C2															
P02 SEGL 2015	BHBT038	1.4	03/09/2014	Cobbles	PBTC-C2															
P02 SEGL 2015	BHBT040	0.5	07/01/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT040	2	07/01/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT040	3	07/01/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT042	0	23/10/2014	Topsoil	PBTC-C1															
P02 SEGL 2015	BHBT042	1	23/10/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT042	3	24/10/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT043	2.5	17/10/2014	Sand and Gravel	-															
P02 SEGL 2015	BHBT047	0.3	17/10/2014	Sand	-															
P02 SEGL 2015	BHBT047	1	17/10/2014	Sand	-															
P02 SEGL 2015	BHBT059	0.5	11/12/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT059	1	11/12/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT061	0.5	08/09/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	BHBT061	1.7	08/09/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	BHBT063	0.5	04/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT063	0.8	04/11/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT064A	0.5	03/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT064A	1	03/11/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT067-1	0.5	21/10/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT069	0.3	08/09/2014	Topsoil	-															
P02 SEGL 2015	BHBT069	1	09/09/2014	Gravel	-															
P02 SEGL 2015	BHBT077	0	22/09/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT077	0.4	22/09/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT077	1	22/09/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT077	2	22/09/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT084	0.6	09/10/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT085	0.4	01/10/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT086	0.3	13/01/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT086	0.8	15/01/2015	Sand	PBTC-C1															
P02 SEGL 2015	BHBT090	0.5	20/08/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	BHBT091	0.5	30/09/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT091	1	30/09/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT095	0.5	15/10/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	BHBT104A	0.1	20/08/2014	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT104A	0.3	20/08/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT106	0.5	17/09/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT107	0.5	02/09/2014	Gravel	PBTC-C1, PBTC-C2, PBTC-C22															
P02 SEGL 2015	BHBT110	0.3	20/08/2014	Sand	PBTC-C2, PBTC-C22															
P02 SEGL 2015	BHBT115-1	0.5	03/02/2015	Grave (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT115-1	2	04/02/2015	Grave (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT118	0.5	14/07/2014	Sand	PBTC-C22															
P02 SEGL 2015	BHBT121A	1	03/10/2014	Clay (Possible Made Ground)	-															
P02 SEGL 2015	BHBT122	0.3	11/12/2014	Topsoil	-															
P02 SEGL 2015	BHBT122-1	0.5	11/12/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT122-1	1	11/12/2014	Sand (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT123-1	0.5	18/09/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT128	0.3	26/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT132	0.5	26/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT132	1	26/08/2014	Cobbles and Boulders	PBTC-C1															
P02 SEGL 2015	BHBT132	2	27/08/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT136	0.3	03/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT137	0.3	03/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT137	0.5	03/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT137A	0.3	04/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT137A	1	04/09/2014	Made Ground	-															
P02 SEGL 2015	BHBT137A	1.7	04/09/2014	Cobbles	-															
P02 SEGL 2015	BHBT138	0.1	09/09/2014	Topsoil	PBTC-C49															
P02 SEGL 2015	BHBT138	0.75	09/09/2014	Made Ground	PBTC-C49															
P02 SEGL 2015	BHBT138	2	09/09/2014	Sand	PBTC-C49															
P02 SEGL 2015	BHBT140	0.5	12/09/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT140	1	12/09/2014	Sand (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT140	2	12/09/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT140	2.5	12/09/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	BHBT140	4	15/09/2014</																	

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	
		Analyte	4-Nitroaniline	Azobenzene	Bis(2-Chloroethoxy)Methane	Bis(2-Chloroethyl)Ether	Bis(2-Chloroisopropyl)Ether	Bis(2-Ethylhexyl)Phthalate	Butylbenzyl Phthalate	Carbazole	Dibenzofuran	Diethyl Phthalate	Dimethylphthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	Nitrobenzene
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)						85000 EIC	940000 EIC				150000 EIC	15000 EIC	89000 EIC	110 S4UL	22 EIC			
		Commercial / Industrial GAC Guidance Criteria																		
		Public Open Space (Park) GAC (SOM 1%)																		
		Public Open Space (Park) GAC Guidance Criteria																		
		Residential without Plant Uptake GAC (SOM 1%)						2700 EIC	42000 EIC				1800 EIC	450 EIC	3400 EIC	4.1 S4UL	0.22 EIC			
		Residential without Plant Uptake GAC Guidance Criteria																		
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	27/05/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1															
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground	-															
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)	-	<0.2	<0.2	<0.2	<0.2	0	<0.2	<0.2	1.78	3.97	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand	-															
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2															
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1															
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1															
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1															
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1															
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1															
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-															
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel	-															
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel	-															
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand	-															
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand	-															
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBT-C2, PBT-C15															
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBT-C2, PBT-C15															
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBT-C2															
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2															
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	TPBT091	0.5	14/08/2014	Silt	PBTC-C2, PBT-C22															
P02 SEGL 2015	TPBT092	0	13/08/2014	Topsoil	PBTC-C2, PBT-C22															
P02 SEGL 2015	TPBT092	0.5	13/08/2014	Sand and Gravel	PBTC-C2, PBT-C22															
P02 SEGL 2015	TPBT095	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT095	0.5	29/09/2014	Sand and Gravel	PBTC-C22															
P02 SEGL 2015	TPBT097	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT097	0.5	29/09/2014	Sand	PBTC-C22															
P02 SEGL 2015	TPBT102	0.5	24/09/2014	Made Ground	-															
P02 SEGL 2015	TPBT104	0.5	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT104	1	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT106	0.5	10/10/2014	Made Ground	PBTC-C1, PBT-C49															
P02 SEGL 2015	TPBT111	0.5	18/09/2014	Made Ground	PBTC-C49															
P02 SEGL 2015	TPBT118	0.5	19/09/2014	Silt	-															
P02 SEGL 2015	TPBT131	0.1	15/08/2014	Topsoil	-															
P02 SEGL 2015	TPBT131	0.5	15/08/2014	Sand	-															
P02 SEGL 2015	TPBT133	0.5	21/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT133	1	21/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT133A	0	10/12/2014	Made Ground	-															
P02 SEGL 2015	TPBT133A	0.5	10/12/2014	Sand	-															
P02 SEGL 2015	TPBT134	0	10/12/2014	Topsoil	-															
P02 SEGL 2015	TPBT134	0.5	10/12/2014	Sand	-															
P02 SEGL 2015	TPBT141	0.5	17/09/2014	Made Ground	PBTC-C1, PBT-C2															
P02 SEGL 2015	TPBT150	0.5	05/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT174	0	04/08/2014	Topsoil (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	TPBT174	0.5	04/08/2014	Sand (Possible Made Ground)	PBTC-C1															
P02 SEGL 2015	TPBT179	0	16/01/2015	Topsoil	PBTC-C1															

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	
		Analyte	N-Nitrosodimethylamine	N-Nitrosodi-N-propylamine	Diphenylamine	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-Chloro-3-Methylphenol	3- & 4-Methylphenol	4-Methylphenol	4-Nitrophenol	Phenol	Pentachlorophenol
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)				3500			3500	16000	3500								440	400
		Commercial / Industrial GAC Guidance Criteria				S4UL			S4UL	EIC	S4UL								S4UL	S4UL
		Public Open Space (Park) GAC (SOM 1%)				1100			1100	1100	1100								440	110
		Public Open Space (Park) GAC Guidance Criteria				S4UL			S4UL	S4UL	S4UL								S4UL	S4UL
		Residential without Plant Uptake GAC (SOM 1%)				94			94	94	210								440	27
		Residential without Plant Uptake GAC Guidance Criteria				S4UL			S4UL	S4UL	EIC								S4UL	S4UL
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2															
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11															
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11															
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11															
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11															
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-															
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1															
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-															
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-															
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-															
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18															
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18															
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18															
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22															
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22															
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-															
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49															
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49															
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49															
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2															

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	
		Analyte	N-Nitrosodimethylamine	N-Nitrosodi-N-propylamine	Diphenylamine	2,3,4,6-Tetrachlorophenol	2,3,5,6-Tetrachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-Chloro-3-Methylphenol	3- & 4-Methylphenol	4-Methylphenol	4-Nitrophenol	Phenol	Pentachlorophenol	
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		Commercial / Industrial GAC (SOM 1%)				3500			3500	16000	3500								440	400	
		Commercial / Industrial GAC Guidance Criteria				S4UL			S4UL	S4UL	S4UL								S4UL	S4UL	
		Public Open Space (Park) GAC (SOM 1%)				1100			1100	1100	1100								440	110	
		Public Open Space (Park) GAC Guidance Criteria				S4UL			S4UL	S4UL	S4UL								S4UL	S4UL	
		Residential without Plant Uptake GAC (SOM 1%)				94			94	94	94								440	27	
		Residential without Plant Uptake GAC Guidance Criteria				S4UL			S4UL	S4UL	S4UL	210 EIC							S4UL	S4UL	
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																<0.05
P02 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTB4070	2	09/03/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTH4000	0.3	04/03/2020	Gravel	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTH4000A	0.3	17/05/2021	Sand	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-															<0.05	<0.5
P02 SEGL 2023	BTH4001	0.4	04/03/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTH4001	1	04/03/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTH4001A	0.4	17/05/2021	Sand	-															<0.05	<0.5
P02 SEGL 2023	BTH4001A	1	17/05/2021	Sand	-															<0.05	<0.5
P02 SEGL 2023	BTH4002	0.3	04/03/2020	Topsoil	-															<0.05	<0.5
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand	-															<0.05	<0.5
P02 SEGL 2023	BTH4002A	0.3	17/05/2021	Topsoil	-															<0.05	<0.5
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-															<0.05	<0.5
P02 SEGL 2023	BTH4003	0.5	04/03/2020	Sand	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4003A	0.5	17/05/2021	Sand	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4004	0.4	04/03/2020	Made Ground	PBTC-C22	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4004	1	04/03/2020	Made Ground	PBTC-C22															<0.05	<0.5
P02 SEGL 2023	BTH4004A	0.4	19/05/2021	Made Ground	PBTC-C22	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4004A	1	19/05/2021	Sand	PBTC-C22															<0.5	<0.5
P02 SEGL 2023	BTH4005	0.3	04/03/2020	Made Ground	PBTC-C22	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4005	1	04/03/2020	Sand	PBTC-C22															<0.05	<0.5
P02 SEGL 2023	BTH4005A	0.3	27/05/2021	Made Ground	PBTC-C22	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4005A	1	19/05/2021	Sand	PBTC-C22															<0.5	<0.5
P02 SEGL 2023	BTH4006	0.5	05/03/2020	Gravel	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4006	1	05/03/2020	Gravel	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4006A	0.5	17/05/2021	Gravel	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4006A	1	17/05/2021	Gravel	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4007	1.1	05/03/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4007A	1	17/05/2021	Gravel	-															<0.5	<0.5
P02 SEGL 2023	BTH4008	0.5	05/03/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4008	1.1	05/03/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4008A	0.5	17/05/2021	Made Ground	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4008A	1.1	17/05/2021	Made Ground	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49															<0.05	<0.5
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4014	0.5	05/02/2020	Gravel	PBTC-C1	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel	-	<0.5	<0.5													<0.5	<0.5
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel	-															<0.05	<0.5
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4019	0.5	27/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4019	1.6	27/02/2020	Made Ground	-	<0.5	<0.5													<0.05	<0.5
P02 SEGL 2023	BTT4019	3.6</																			

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-PCB							
		Analyte	1-naphthol	Catechol	2-Methyl-4,6-Dinitrophenol	Resorcinol	Methylphenols (Total Cresols)	Methylphenols (Total Cresols)	Trimethylphenol	Xylenols & Ethylphenols	Xylenols	Phenol (Monohydric - Total by HPLC)	Total Phenols	PCB 28	PCB 52	PCB 101	PCB 118	PCB 138	PCB 153	PCB 180		
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
		Commercial / Industrial GAC (SOM 1%) Commercial / Industrial GAC Guidance Criteria					160000 EIC	160000 EIC														
		Public Open Space (Park) GAC (SOM 1%) Public Open Space (Park) GAC Guidance Criteria																				
		Residential without Plant Uptake GAC (SOM 1%) Residential without Plant Uptake GAC Guidance Criteria					3700 EIC	3700 EIC														
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																	
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1.5	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007E	0.2	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007F	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007G	1.8	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007H	0.5	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007I	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand																		
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1																	
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground																		
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel																		
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground																		
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground																		
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay																		
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18																	
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18																	
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18																	
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22																	
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground																		
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground																		
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground																		
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49																	
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																	

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides
		Analyte	Pcb, Total Of 7 Congeners	PCB 77	PCB 81	PCB 105	PCB 114	PCB 123	PCB 126	PCB 156	PCB 167	PCB 169	PCB 189	Total PCBs (12 Congeners)	Aldrin	Alpha-Bhc	Beta-Bhc	Chlorothalonil	Alpha-Chlordane	
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		Commercial / Industrial GAC (SOM 1%)													170	170	65			
		Commercial / Industrial GAC Guidance Criteria													S4UL	S4UL	S4UL			
		Public Open Space (Park) GAC (SOM 1%)													30	47	15			
		Public Open Space (Park) GAC Guidance Criteria													S4UL	S4UL	S4UL			
		Residential without Plant Uptake GAC (SOM 1%)													7.3	6.9	3.7			
		Residential without Plant Uptake GAC Guidance Criteria													S4UL	S4UL	S4UL			
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2015	BHBT155-1A	0.3	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT155-1A	1	08/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.3	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	0.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158	1.5	27/05/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	27/05/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT158-1A	2	21/11/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.3	26/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT162-1	0.5	26/11/2014	Gravel	PBTC-C1															
P02 SEGL 2015	BHBT165	0.3	15/08/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT166	0.75	24/11/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT166	1.5	24/11/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT169	1	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	2	13/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT169	4.5	14/11/2014	Cobbles and Boulders	PBTC-C1															
P02 SEGL 2015	BHBT169	5.5	14/11/2014	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	BHBT169-1	0.5	30/10/2014	Sand (Embankment Fill)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT175-1	0.1	25/11/2014	Made Ground	-															
P02 SEGL 2015	BHBT177	0.5	02/12/2014	Cobble (Possible Made Ground)	-															
P02 SEGL 2015	BHBT177	1	02/12/2014	Sand	-															
P02 SEGL 2015	BHBT181	0.5	23/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.3	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	0.5	21/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT183-1	2	22/10/2014	Sand & Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	0.5	20/10/2014	Sand (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT191-1	3	16/10/2014	Sand and Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT192	0.5	08/08/2014	Sand	PBTC-C2															
P02 SEGL 2015	BHBT202-2	6.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT202-2	7.5	28/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	BHBT215A	0	06/08/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	BHBT215A	0.3	06/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	0.5	30/08/2014	Gravel (Embankment Fill)	PBTC-C1															
P02 SEGL 2015	BHBT218	4	30/08/2014	Sand	PBTC-C1															
P02 SEGL 2015	BHBT218	5	30/08/2014	Sand	PBTC-C1															
P03 Fugro 2019	BTB2003	0.5	12/02/2018	Sand	PBTC-C1															
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1															
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1															
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-															
P02 SEGL 2015	TPBT005	0.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT005	1.5	05/02/2015	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT011	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT011	0.5	16/01/2015	Sand and Gravel	-															
P02 SEGL 2015	TPBT013	0	16/01/2015	Topsoil	-															
P02 SEGL 2015	TPBT013	0.5	16/01/2015	Gravel	-															
P02 SEGL 2015	TPBT014	0.5	16/01/2015	Sand and Gravel	PBTC-C1															
P02 SEGL 2015	TPBT046	0	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	0.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT046	1.5	12/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT047	0.8	11/08/2014	Made Ground	-															
P02 SEGL 2015	TPBT052	0.5	11/08/2014	Sand	-															
P02 SEGL 2015	TPBT056	0.5	09/08/2014	Sand	-															
P02 SEGL 2015	TPBT067	0	29/08/2014	Topsoil	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT068	0.5	29/08/2014	Sand	PBTC-C1, PBTC-C2, PBTC-C15															
P02 SEGL 2015	TPBT073	0.5	29/08/2014	Gravel	PBTC-C1, PBTC-C2															
P02 SEGL 2015	TPBT083	0	10/10/2014	Topsoil	PBTC-C2															
P02 SEGL 2015	TPBT083	0.5	10/10/2014	Made Ground	PBTC-C2															
P02 SEGL 2015	TPBT091	0.5	14/08/2014	Silt	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT092	0	13/08/2014	Topsoil	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT092	0.5	13/08/2014	Sand and Gravel	PBTC-C2, PBTC-C22															
P02 SEGL 2015	TPBT095	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT095	0.5	29/09/2014	Sand and Gravel	PBTC-C22															
P02 SEGL 2015	TPBT097	0	29/09/2014	Topsoil	PBTC-C22															
P02 SEGL 2015	TPBT097	0.5	29/09/2014	Sand	PBTC-C22															
P02 SEGL 2015	TPBT102	0.5	24/09/2014	Made Ground	-															
P02 SEGL 2015	TPBT104	0.5	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT104	1	03/09/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT106	0.5	10/10/2014	Made Ground	PBTC-C1, PBTC-C49															
P02 SEGL 2015	TPBT111	0.5	18/09/2014	Made Ground	PBTC-C49															
P02 SEGL 2015	TPBT118	0.5	19/09/2014	Silt	-															
P02 SEGL 2015	TPBT131	0.1	15/08/2014	Topsoil	-															
P02 SEGL 2015	TPBT131	0.5	15/08/2014	Sand	-															
P02 SEGL 2015	TPBT133	0.5	21/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT133	1	21/11/2014	Made Ground	PBTC-C1															
P02 SEGL 2015	TPBT133A	0	10/12/2014	Made Ground	-															
P02 SEGL 2015	TPBT133A	0.5	10/12/2014	Sand	-															
P02 SEGL 2015	TPBT134	0	10/12/2014	Topsoil	-															
P02 SEGL 2015	TPBT134	0.5	10/12/2014	Sand	-						</									

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides
		Analyte	Pcb, Total Of 7 Congeners	PCB 77	PCB 81	PCB 105	PCB 114	PCB 123	PCB 126	PCB 156	PCB 157	PCB 167	PCB 169	PCB 189	Total PCBs (12 Congeners)	Aldrin	Alpha-Bhc	Beta-Bhc	Chlorothalonil	Alpha-Chlordane		
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)														170	170	65				
		Commercial / Industrial GAC Guidance Criteria														S4UL	S4UL	S4UL				
		Public Open Space (Park) GAC (SOM 1%)														30	47	15				
		Public Open Space (Park) GAC Guidance Criteria														S4UL	S4UL	S4UL				
		Residential without Plant Uptake GAC (SOM 1%)														7.3	6.9	3.7				
		Residential without Plant Uptake GAC Guidance Criteria														S4UL	S4UL	S4UL				
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																	
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBT-C11																	
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBT-C11																	
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBT-C11																	
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBT-C11																	
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-																	
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1																	
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-																	
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-																	
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-																	
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-																	
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18																	
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18																	
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18																	
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12							
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49																	
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBT-C2																	
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBT-C2																	

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides
		Analyte	Pcb, Total Of 7 Congeners	PCB 77	PCB 81	PCB 105	PCB 114	PCB 123	PCB 126	PCB 156	PCB 157	PCB 167	PCB 169	PCB 189	Total PCBs (12 Congeners)	Aldrin	Alpha-Bhc	Beta-Bhc	Chlorothalonil	Alpha-Chlordane	
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		Commercial / Industrial GAC (SOM 1%)														170	170	65			
		Commercial / Industrial GAC Guidance Criteria														S4UL	S4UL	S4UL			
		Public Open Space (Park) GAC (SOM 1%)														30	47	15			
		Public Open Space (Park) GAC Guidance Criteria														S4UL	S4UL	S4UL			
		Residential without Plant Uptake GAC (SOM 1%)														7.3	6.9	3.7			
		Residential without Plant Uptake GAC Guidance Criteria														S4UL	S4UL	S4UL			
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1																
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-																
P02 SEGL 2023	BTB4070	2	09/03/2020	Gravel	-																
P02 SEGL 2023	BTH4000	0.3	04/03/2020	Gravel	-																
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-																
P02 SEGL 2023	BTH4000A	0.3	17/05/2021	Sand	-																
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-																
P02 SEGL 2023	BTH4001	0.4	04/03/2020	Gravel	-																
P02 SEGL 2023	BTH4001	1	04/03/2020	Gravel	-																
P02 SEGL 2023	BTH4001A	0.4	17/05/2021	Sand	-																
P02 SEGL 2023	BTH4001A	1	17/05/2021	Sand	-																
P02 SEGL 2023	BTH4002	0.3	04/03/2020	Topsoil	-																
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand	-																
P02 SEGL 2023	BTH4002A	0.3	17/05/2021	Topsoil	-																
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-																
P02 SEGL 2023	BTH4003	0.5	04/03/2020	Sand	PBTC-C1																
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1																
P02 SEGL 2023	BTH4003A	0.5	17/05/2021	Sand	PBTC-C1																
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1																
P02 SEGL 2023	BTH4004	0.4	04/03/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4004	1	04/03/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4004A	0.4	19/05/2021	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4004A	1	19/05/2021	Sand	PBTC-C22																
P02 SEGL 2023	BTH4005	0.3	04/03/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4005	1	04/03/2020	Sand	PBTC-C22																
P02 SEGL 2023	BTH4005A	0.3	27/05/2021	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22																
P02 SEGL 2023	BTH4005A	1	19/05/2021	Sand	PBTC-C22																
P02 SEGL 2023	BTH4006	0.5	05/03/2020	Gravel	-																
P02 SEGL 2023	BTH4006	1	05/03/2020	Gravel	-																
P02 SEGL 2023	BTH4006A	0.5	17/05/2021	Gravel	-																
P02 SEGL 2023	BTH4006A	1	17/05/2021	Gravel	-																
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-																
P02 SEGL 2023	BTH4007	1.1	05/03/2020	Gravel	-																
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-																
P02 SEGL 2023	BTH4007A	1	17/05/2021	Gravel	-																
P02 SEGL 2023	BTH4008	0.5	05/03/2020	Made Ground	-																
P02 SEGL 2023	BTH4008	1.1	05/03/2020	Made Ground	-																
P02 SEGL 2023	BTH4008A	0.5	17/05/2021	Made Ground	-																
P02 SEGL 2023	BTH4008A	1.1	17/05/2021	Made Ground	-																
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49																
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49																
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49																
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49																
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49																
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49																
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12						
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1																
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1																
P02 SEGL 2023	BTH4014	0.5	05/02/2020	Gravel	PBTC-C1																
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.12						
P02 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel	-																
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2																
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel	-																
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2																
P02 SEGL 2023	BTT4019	0.5	27/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4019	1.6	27/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4019	3.6	27/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4020	0.3	19/02/2020	Made Ground	PBTC-C2																
P02 SEGL 2023	BTT4020	1	19/02/2020	Gravel	PBTC-C2																
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-																
P02 SEGL 2023	BTT4024A	0.3	18/05/2021	Made Ground	PBTC-C15																
P02 SEGL 2023	BTT4024A	0.5	18/05/2021	Made Ground	PBTC-C15																
P02 SEGL 2023	BTT4024A	1.15	18/05/2021	Sand	PBTC-C15																
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15																
P02 SEGL 2023	BTT4025A	0.5	18/05/2021	Made Ground	PBTC-C15																
P02 SEGL 2023	BTT4025A	1.15	18/05/2021	Sand	PBTC-C15																
P02 SEGL 2023	BTT4026	0.3	17/02/2020	Made Ground	PBTC-C1																
P02 SEGL 2023	BTT4026	1	17/02/2020	Sand	PBTC-C1																

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

				Analyte Group	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides		
				Analyte	Dieldrin	Endosulfan Sulfate	Endosulfan I	Endosulfan II	Endrin	gamma-BHC (Lindane)	4,4'-DDE	4,4'-DDT	Guthion (Azinphos-methyl)	Diazinon	Dichlorvos	DISULFOTON	Ethion	Fenitrothion	Fenthion	Heptachlor	Heptachlor Epoxide	Malathion
				Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Commercial / Industrial GAC (SOM 1%)	170		5600	6300		67					140							
				Commercial / Industrial GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
				Public Open Space (Park) GAC (SOM 1%)	30		2400	2400		14					26							
				Public Open Space (Park) GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
				Residential without Plant Uptake GAC (SOM 1%)	7		160	190		2.9					6.4							
				Residential without Plant Uptake GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																	
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																	
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11																	
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11																	
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11																	
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11																	
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-																	
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1																	
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-																	
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-																	
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-																	
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-																	
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1																	
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18																	
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18																	
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18																	
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22																	
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22																	
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-																	
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49																	
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49																	
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49																	
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1																	
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1																	
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																	
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																	

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 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides
		Analyte	Dieldrin	Endosulfan Sulfate	Endosulfan I	Endosulfan II	Endrin	gamma-BHC (Lindane)	4,4'-DDE	4,4'-DDT	Guthion (Azinphos-methyl)	Diazinon	Dichlorvos	DISULFOTON	Ethion	Fenitrothion	Fenthion	Heptachlor	Heptachlor Epoxide	Malathion
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		Commercial / Industrial GAC (SOM 1%)	170		5600	6300		67					140							
		Commercial / Industrial GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
		Public Open Space (Park) GAC (SOM 1%)	30		2400	2400		14					26							
		Public Open Space (Park) GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
		Residential without Plant Uptake GAC (SOM 1%)	7		160	190		2.9					6.4							
		Residential without Plant Uptake GAC Guidance Criteria	S4UL		S4UL	S4UL		S4UL					S4UL							
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)															
P02 SEGL 2023	BTB4060A	0.5	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4060A	2	09/03/2020	Gravel (Possible Made Ground)	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4062	0.15	27/02/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4062	1	27/02/2020	Sand	PBTC-C1, PBTC-C2															
P02 SEGL 2023	BTB4065	0.5	11/03/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground																
P02 SEGL 2023	BTB4070	2	09/03/2020	Gravel																
P02 SEGL 2023	BTH4000	0.3	04/03/2020	Gravel																
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel																
P02 SEGL 2023	BTH4000A	0.3	17/05/2021	Sand																
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand																
P02 SEGL 2023	BTH4001	0.4	04/03/2020	Gravel																
P02 SEGL 2023	BTH4001	1	04/03/2020	Gravel																
P02 SEGL 2023	BTH4001A	0.4	17/05/2021	Sand																
P02 SEGL 2023	BTH4001A	1	17/05/2021	Sand																
P02 SEGL 2023	BTH4002	0.3	04/03/2020	Topsoil																
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand																
P02 SEGL 2023	BTH4002A	0.3	17/05/2021	Topsoil																
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand																
P02 SEGL 2023	BTH4003	0.5	04/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTH4003A	0.5	17/05/2021	Sand	PBTC-C1															
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1															
P02 SEGL 2023	BTH4004	0.4	04/03/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4004	1	04/03/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4004A	0.4	19/05/2021	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4004A	1	19/05/2021	Sand	PBTC-C22															
P02 SEGL 2023	BTH4005	0.3	04/03/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4005	1	04/03/2020	Sand	PBTC-C22															
P02 SEGL 2023	BTH4005A	0.3	27/05/2021	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22															
P02 SEGL 2023	BTH4005A	1	19/05/2021	Sand	PBTC-C22															
P02 SEGL 2023	BTH4006	0.5	05/03/2020	Gravel																
P02 SEGL 2023	BTH4006	1	05/03/2020	Gravel																
P02 SEGL 2023	BTH4006A	0.5	17/05/2021	Gravel																
P02 SEGL 2023	BTH4006A	1	17/05/2021	Gravel																
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground																
P02 SEGL 2023	BTH4007	1.1	05/03/2020	Gravel																
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground																
P02 SEGL 2023	BTH4007A	1	17/05/2021	Gravel																
P02 SEGL 2023	BTH4008	0.5	05/03/2020	Made Ground																
P02 SEGL 2023	BTH4008	1.1	05/03/2020	Made Ground																
P02 SEGL 2023	BTH4008A	0.5	17/05/2021	Made Ground																
P02 SEGL 2023	BTH4008A	1.1	17/05/2021	Made Ground																
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49															
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49															
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49															
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49															
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49															
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49															
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1															
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1															
P02 SEGL 2023	BTH4014	0.5	05/02/2020	Gravel	PBTC-C1															
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTT4001	3.1	26/02/2020	Gravel																
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2															
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017A	0.5	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017A	1.85	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017A	3.1	28/02/2020	Made Ground																
P02 SEGL 2023	BTT4017A	3.7	28/02/2020	Gravel																
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2															
P02 SEGL 2023	BTT4019	0.5	27/02/2020	Made Ground																
P02 SEGL 2023	BTT4019	1.6	27/02/2020	Made Ground																
P02 SEGL 2023	BTT4019	3.6	27/02/2020	Made Ground																
P02 SEGL 2023	BTT4020	0.3	19/02/2020	Made Ground	PBTC-C2															
P02 SEGL 2023	BTT4020	1	19/02/2020	Gravel	PBTC-C2															
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground																
P02 SEGL 2023	BTT4024A	0.3	18/05/2021	Made Ground	PBTC-C15															
P02 SEGL 2023	BTT4024A	0.5	18/05/2021	Made Ground	PBTC-C15															
P02 SEGL 2023	BTT4024A	1.15	18/05/2021	Sand	PBTC-C15															
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15															
P02 SEGL 2023	BTT4025A	0.5	18/05/2021	Made Ground	PBTC-C15															
P02 SEGL 2023	BTT4025A	1.15	18/05/2021	Sand	PBTC-C15															
P02 SEGL 2023	BTT4026	0.3	17/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTT4026	1	17/02/2020	Sand	PBTC-C1															
P02 SEGL 2023	BTT4037	1	20/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTT4038	0.3	20/02/2020	Made Ground	PBTC-C1															
P02 SEGL 2023	BTT4038	1	20/02/2020	Made Ground	PBTC															

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.11: Soil Laboratory Analysis Data Screening vs. Human Health
 Assessment Criteria from Soils (Generic Assessment Criteria)

		Analyte Group	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides		
		Analyte	Methoxychlor	PARATHION, ETHYL	PARATHION, METHYL	Mevinphos	PHORATE	Pirimiphos-methyl	DIMETHOATE	Trietazine	Phosalone	Azinphos-ethyl	Chlorpyrifos	Propetamphos	o,p-DDE	Etrimphos	Pendimethalin	Isodrin	Chlorfenvinphos	o,p-DDD	
		Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
		Commercial / Industrial GAC (SOM 1%)																			
		Commercial / Industrial GAC Guidance Criteria																			
		Public Open Space (Park) GAC (SOM 1%)																			
		Public Open Space (Park) GAC Guidance Criteria																			
		Residential without Plant Uptake GAC (SOM 1%)																			
		Residential without Plant Uptake GAC Guidance Criteria																			
Gl Reference	Location Reference	Depth of Soil Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)																
P02 SEGL 2023	BTB4006A	6	11/02/2020	Sand	PBTC-C2																
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11																
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11																
P02 SEGL 2023	BTB4007B	2	17/03/2020	Silt	PBTC-C11																
P02 SEGL 2023	BTB4007C	1	18/03/2020	Silt	PBTC-C11																
P02 SEGL 2023	BTB4007C	1	18/03/2020	Sand	PBTC-C11																
P02 SEGL 2023	BTB4007C	1.5	18/03/2020	Sand	PBTC-C11																
P02 SEGL 2023	BTB4007D	0.2	18/03/2020	Topsoil	PBTC-C11																
P02 SEGL 2023	BTB4007D	1	18/03/2020	Sand	PBTC-C11																
P02 SEGL 2023	BTB4007D	1.8	18/03/2020	Sand	PBTC-C11																
P02 SEGL 2023	BTB4007E	0.5	18/03/2020	Topsoil	PBTC-C11																
P02 SEGL 2023	BTB4007E	1	18/03/2020	Silt	PBTC-C11																
P02 SEGL 2023	BTB4008	0.5	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																
P02 SEGL 2023	BTB4008	4	13/03/2020	Made Ground	PBTC-C1, PBTC-C11																
P02 SEGL 2023	BTB4008	7	13/03/2020	Silt	PBTC-C1, PBTC-C11																
P02 SEGL 2023	BTB4013	3	27/02/2020	Sand	-																
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4016	0.5	24/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4017	0.3	18/02/2020	Gravel (Possible Made Ground)	PBTC-C1																
P02 SEGL 2023	BTB4018	0.1	24/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4018	5	25/02/2020	Gravel	-																
P02 SEGL 2023	BTB4021	0.5	11/03/2020	Made Ground	-																
P02 SEGL 2023	BTB4021	1	11/03/2020	Made Ground	-																
P02 SEGL 2023	BTB4021	2	11/03/2020	Clay	-																
P02 SEGL 2023	BTB4022	1.2	19/02/2020	Gravel	PBTC-C1																
P02 SEGL 2023	BTB4022	2.4	19/02/2020	Gravel	PBTC-C1																
P02 SEGL 2023	BTB4022A	0.5	18/05/2021	Made Ground	PBTC-C1																
P02 SEGL 2023	BTB4023	0.3	20/03/2020	Made Ground	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4023	1	20/03/2020	Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4023	2.5	20/03/2020	Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4025	0.3	12/02/2020	topsoil	PBTC-C18																
P02 SEGL 2023	BTB4025	0.4	12/02/2020	Sand	PBTC-C18																
P02 SEGL 2023	BTB4025	4	13/02/2020	Gravel	PBTC-C18																
P02 SEGL 2023	BTB4028	0.3	07/02/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22																
P02 SEGL 2023	BTB4028	1	07/02/2020	Gravel	PBTC-C22																
P02 SEGL 2023	BTB4028	2	13/02/2020	Gravel	PBTC-C22																
P02 SEGL 2023	BTB4028	4.3	13/02/2020	Gravel	PBTC-C22																
P02 SEGL 2023	BTB4029	0.3	06/02/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22																
P02 SEGL 2023	BTB4029	3	07/02/2020	Sand	PBTC-C22																
P02 SEGL 2023	BTB4031	0.3	13/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4031	0.5	13/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4031	2	18/02/2020	Made Ground	-																
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49																
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49																
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49																
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49																
P02 SEGL 2023	BTB4035	2.9	10/03/2020	Gravel	PBTC-C49																
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4043	1	10/03/2020	Sand	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1																
P02 SEGL 2023	BTB4058	3	27/02/2020	Made Ground	PBTC-C1																
P02 SEGL 2023	BTB4058	7	02/03/2020	Made Ground	PBTC-C1																
P02 SEGL 2023	BTB4058	8	02/03/2020	Sand	PBTC-C1																
P02 SEGL 2023	BTB4058	10	02/03/2020	Sand	PBTC-C1																
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4059	2	11/03/2020	Gravel	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																
P02 SEGL 2023	BTB4060	1	27/02/2020	Made Ground	PBTC-C1, PBTC-C2																

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.12: Assessment of Risks to Groundwater and Surface Waters -
 Soil Leachate

						Analyte Group	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics
						Analyte	Dissolved Organic Carbon	Conductivity-Electrical 20deg	pH	Cyanide (Total)	Cyanide (Free)	Hardness	Ammoniacal Nitrogen as N	Chloride	Fluoride	Sulphate	Sulphide	Total Dissolved Solids
						Unit	mg/l	us/cm	pH UNITS	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
						Freshwater EQS Resource Protection Value				1	50		250	1	400			
GI Reference	Location Reference	Depth of Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)													
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2				<40			0.076	0.73		1.9			
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-				<40			<0.02	1.7		2.6			
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-				<40			<0.02	1.7		2.9			
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2				<50	<50	9.53				6.2	<0.01		
P02 SEGL 2019	BTB1005A	1	25/04/2019	Sand	PBTC-C1		2	100					1	0.27	0.7			
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1		6.3	244	7.6				54	<0.0001	11			170000
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1		10	34.9	7				3.6	<0.0001	4.3			24000
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-		3.7	39.9	7.2				5	<0.0001	5.7			28000
P03 Fugro 2018	BTB1003	0.3	24/10/2016	Made Ground	-		6.4	170	7.4				26	<0.0001	3			120000
P03 Fugro 2018	BTB1003	0.5	24/10/2016	Made Ground	-		5.3	123	7.3				17	0.1	2.8			86000
P03 Fugro 2018	BTT1003	0.5	13/10/2016	Sand	PBTC-C1		5.8	48.1	6.9				2.2	0.11	3			34000
P03 Fugro 2018	TBT1001	1	10/11/2016	Made Ground	PBTC-C1		12	118	6.9				25	<0.0001	2.7			82000
P02 SEGL 2023	BTB4006	0.2	04/02/2020	Made Ground	PBTC-C2		14						3	0.094	8.6			98
P02 SEGL 2023	BTB4006	1	05/02/2020	Made Ground	PBTC-C2		15						3.3	0.32	13			160
P02 SEGL 2023	BTB4006	5	05/02/2020	Sand	PBTC-C2		11						5.5	0.18	1.9			91
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11		31						21	0.14	11			78
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11		13						6	0.1	3.3			29
P02 SEGL 2023	BTB4007A	2	17/03/2020	Silt	PBTC-C11		23						2.8	0.1	9.7			29
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11		14						1.3	0.18	12			100
P02 SEGL 2023	BTB4008A	1	17/05/2021	Made Ground	PBTC-C1, PBTC-C11		6.3						2.4	0.21	3.2			28
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-		32						9.3	0.15	13			140
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-		13						1.5	0.42	4.8			85
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-		58						3.5	0.5	7.9			140
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22		13						2.7	0.12	8.6			40
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22		12						1	0.083	5			20
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22		6.7						<1	0.19	7.7			40
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49		4.3						5.3	0.3	17			160
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49		10						12	0.23	11			140
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49		54						18	1.8	44			460
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49		19						24	0.78	110			370
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2		18						1.6	0.18	4.7			65
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2		4.8						93	0.66	51			370
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1		13						160	0.9	590			850
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2		6						54	0.42	480			720
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2		10						130	0.98	43			280
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-		6.5						1.1	0.35	5			120
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-		7.3						1.2	0.16	3.8			31
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-		14						4.6	0.098	5.6			31
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand	-		15						2.6	0.2	9.7			100
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-		19						1.5	0.11	1			20
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1		5.7						2.9	0.19	<1			61
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1		17						2.3	0.21	20			200
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22		9						1.6	0.12	3.9			19
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22		20						2.7	0.12	5.8			35
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22		13						2.7	0.15	13			43
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22		10						1.5	0.1	5.1			23
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-		4.1						3.1	0.18	4.1			120
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-		11						1.4	0.26	2			120
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49		28						1.9	0.097	<1			65
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49		23						3.2	0.15	<1			51
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49		20						2.7	0.76	10			310
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49		14						43	0.49	73			390
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49		46						26	0.42	37			260
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49		11						11	0.25	54			130
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1		15						1.4	0.063	20			44
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1		15						5.9	0.083	92			170
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1		44						8.1	0.099	24			78
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1		8.4						2.5	0.066	4.2			31
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2		17						2.2	0.2	22			100
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-		16						2.4	0.2	6.7			34
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-		24						92	0.58	16			51
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-		30						3.7	0.19	14			45
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2		22						2.9	0.33	27			62
P02 SEGL 2023	BTT4020A	0.3	17/05/2021	Made Ground	PBTC-C2		4.8						1.1	0.21	<1			100
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-		12						1.2	0.3	9.1			45
P02 SEGL 2023	BTT4024	0.3	05/03/2020	Made Ground	PBTC-C15		21						1.8	0.16	9.9			51
P02 SEGL 2023	BTT4025	1.6	05/03/2020	Sand	PBTC-C15		12						1.2	0.13	5.7			51
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15		20						3.7	0.12	5.5			32
P02 SEGL 2023	BTT4026	0.3	17/02/2020	Made Ground	PBTC-C1		4.3						2.1	0.25	6.1			140
P02 SEGL 2023	BTT4037	1	20/02/2020	Made Ground	PBTC-C1		7.1						5.6	0.2	5.8			120
P02 SEGL 2023	BTT4042	0.5	09/03/2020	(Possible Made Gro	PBTC-C1, PBTC-C2		5.2						2.3	0.2	15			120

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.12: Assessment of Risks to Groundwater and Surface Waters -
 Soil Leachate

Analyte Group						UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	
Analyte						Sulphur	Antimony	Arsenic	Barium	Boron	Cadmium	Chromium, Hexavalent (Cr6+)	Chromium	Copper	Iron	Lead	Mercury
Unit						mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value							5	10	700	1000	0.08	3.4	50	1	1000	1.2	1
GI Reference	Location Reference	Depth of Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)												
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2			0.28			<0.03	0.48	2.8		0.4	<0.01	
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-			0.47			<0.03	0.34	0.7		0.44	<0.01	
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-			0.47			<0.03	0.4	1.5		<0.09	0.03	
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2	3.7		0.556	11		<0.1	<30	0.424	3.72	114	0.152	<0.01
P02 SEGL 2019	BTB1005A	1	25/04/2019	Sand	PBTC-C1			<1	79		<1	2.5	2	2.9		1.6	<0.2
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1			0.24	3.5		0.19		0.87	2.9		1	0.01
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1			<0.17	<0.16	0.96	<0.03		0.61	2		0.29	<0.01
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-			0.37	1.3		0.07		0.79	0.8		0.87	<0.01
P03 Fugro 2018	BTB1003	0.3	24/10/2016	Made Ground	-			<0.17	0.53	4.9	<0.03		0.3	1		0.12	0.01
P03 Fugro 2018	BTB1003	0.5	24/10/2016	Made Ground	-			<0.17	0.24	1.1	<0.03		<0.25	<0.4		<0.09	<0.01
P03 Fugro 2018	BTT1003	0.5	13/10/2016	Sand	PBTC-C1			<0.17	1.2	31	<0.03		0.43	2.6		0.85	<0.01
P03 Fugro 2018	TBT1001	1	10/11/2016	Made Ground	PBTC-C1			1.2	3.5	2.5	<0.03		1.5	2.4		2.9	<0.01
P02 SEGL 2023	BTB4006	0.2	04/02/2020	Made Ground	PBTC-C2			<1	<1	14	0.11		<1	4.2		<1	<0.5
P02 SEGL 2023	BTB4006	1	05/02/2020	Made Ground	PBTC-C2			<1	3.7	13	<0.1		<1	2.6		<1	<0.5
P02 SEGL 2023	BTB4006	5	05/02/2020	Sand	PBTC-C2			<1	<1	10	<0.1		<1	3.9		<1	<0.5
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11			<1	2.2	4.3	<0.1		<1	7.1		4.4	<0.5
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11			<1	<1	3.4	<0.1		<1	3.1		<1	<0.5
P02 SEGL 2023	BTB4007A	2	17/03/2020	Silt	PBTC-C11			<1	<1	3.7	<0.1		<1	2.8		<1	<0.5
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11			<1	1.1	9.8	<0.1		<1	2.5		<1	<0.5
P02 SEGL 2023	BTB4008A	1	17/05/2021	Made Ground	PBTC-C1, PBTC-C11			1.7	4.7	7	0.69		1.5	5.5		5.8	<0.05
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-			<1	1.8	29	<0.1		<1	1.7		<1	<0.5
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-			<1	<1	4.6	<0.1		<1	1.6		<1	<0.5
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-			<1	1.1	13	<0.1		<1	1.3		<1	<0.5
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22			3.3	<1	12	<0.1		<1	5.5		3.6	<0.5
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22			<1	<1	3.6	<0.1		<1	<1		2.1	<0.5
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22			<1	<1	4.6	<0.1		<1	<1		<1	<0.5
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49			0.7	0.5	22	<0.11		<0.5	1		<0.5	<0.05
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49			<0.5	0.5	<5	<0.11		<0.5	2.1		<0.5	<0.05
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49			120	25	18	1.8		1.6	37		25	<0.5
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49			180	5.2	5.3	0.62		<1	15		3.3	0.85
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2			<1	<1	3.4	<0.1		<1	2.4		<1	<0.5
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2			<1	1.2	11	<0.1		1.8	2.4		<1	<0.5
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1			15	1.3	59	<0.1		<1	3.5		2.1	<0.5
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2			<1	<1	31	<0.1		<1	2.3		<1	1.6
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2			<1	1.7	14	<0.1		<1	2.5		<1	<0.5
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-			3.4	1.5	20	<0.1		<1	2.7		<1	<0.5
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-			<1	1.4	17	<0.1		2.1	4.2		3.4	<0.5
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-			0.6	1.6	7	<0.11		1.8	16		3.3	<0.05
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand	-			<1	1.1	12	<0.1		<1	10		1.4	<0.5
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-			0.6	1.7	<5	<0.11		2.1	10		4.9	<0.05
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1			<1	<1	5.7	<0.1		<1	2		<1	<0.5
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1			1.8	1.3	27	<0.11		<0.5	5.7		2	<0.05
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22			<1	1.6	4.7	<0.1		1.6	5.4		4.7	<0.5
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22			1.5	3.1	13	<0.11		2.8	21		13	<0.05
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22			2.7	<1	6.2	0.58		<1	4.1		2.1	<0.5
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22			0.5	2.6	6	<0.11		1.6	2.9		3.8	<0.05
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-			<1	<1	11	<0.1		1.3	1.3		<1	<0.5
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-			<0.5	0.5	15	<0.11		<0.5	3.4		<0.5	<0.05
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49			<1	1.3	5.8	<0.1		2	8.2		1.5	<0.5
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49			0.9	2.6	10	<0.11		3	17		13	<0.05
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49			2.6	3.2	8.1	<0.1		4.9	8.4		6	<0.5
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49			3.1	10	13	<0.1		5.7	10		6.6	<0.5
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49			<1	4.8	11	<0.1		<1	22		5.2	<0.5
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49			<1	<1	7.8	<0.1		<1	4.2		<1	<0.5
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1			<1	<1	5.9	0.15		<1	2.4		<1	<0.5
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1			<1	<1	14	<0.1		<1	1.4		<1	<0.5
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1			0.7	1	20	0.21		1.8	7.7		2.9	<0.05
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1			<1	<1	3.8	<0.1		<1	1.5		<1	<0.5
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2			<1	<1	15	<0.1		<1	5.5		3.2	<0.5
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-			2	2.8	14	<0.1		<1	3.1		7.3	<0.5
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-			1.2	2.6	22	<0.1		<1	5.8		12	<0.5
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-			1.2	1.6	7.4	<0.1		<1	3.9		1.8	<0.5
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2			<1	2.2	15	<0.1		<1	4.7		3.9	<0.5
P02 SEGL 2023	BTT4020A	0.3	17/05/2021	Made Ground	PBTC-C2			<0.5	1.6	16	<0.11		<0.5	4.2		0.8	<0.05
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-			<1	1.4	6.4	<0.1		<1	4.5		1.5	<0.5
P02 SEGL 2023	BTT4024	0.3	05/03/2020	Made Ground	PBTC-C15			<1	1.1	24	0.1		1.1	14		3.4	<0.5
P02 SEGL 2023	BTT4025	1.6	05/03/2020	Sand	PBTC-C15			<1	<1	5.3	<0.1		<1	1.6		<1	<0.5
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15			2.6	3.1	11	<0.11		2.5	25	</		

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.12: Assessment of Risks to Groundwater and Surface Waters -
 Soil Leachate

						Analyte Group	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols
						Analyte	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc	Phenol	Methylphenols (Total Cresols)	Xylenols	Phenol (Monohydric - Total by HPLC)	Phenol Index
						Unit	ug/l	ug/l	ug/l	ug/l	ug/l						
						Freshwater EQS Resource Protection Value	4	20	10	25	20	10.9	7.7				
GI Reference	Location Reference	Depth of Sample (mbgl)	Date Sampled	Sample Lithology	Contaminative Source ID(s)												
P02 Fugro 2016-A	BH18500	0.5	18/09/2015	Made Ground	PBTC-C2			3.8	<0.25			6.29					
P03 Fugro 2016-B	BH22900	0.35	14/11/2015	Gravel	-			<0.5	0.27			1.38					
P03 Fugro 2016-B	BH23200A	0.5	05/11/2015	Made Ground	-			<0.5	0.39			<1.3					
P02 SEGL 2015	BHBT184-1	2	20/10/2014	Sand	PBTC-C1, PBTC-C2			0.788	0.909	<0.36	<0.24	0.638	<2	<6	<8	<16	
P02 SEGL 2019	BTB1005A	1	25/04/2019	Sand	PBTC-C1		<5	2	<0.5			7				<100	
P03 Fugro 2019	BTB2007	0.5	26/03/2018	Made Ground	PBTC-C1		13	0.5	1			1.9					<100
P03 Fugro 2019	TBB2004	1	22/02/2018	Gravel	PBTC-C1		<1.1	1.1	<0.25			6.4					<100
P03 Fugro 2019	TBB2008	0.5	27/03/2018	Sand	-		1.6	<0.5	0.28			<1.3					<100
P03 Fugro 2018	BTB1003	0.3	24/10/2016	Made Ground	-		1.8	0.5	0.45			2.1					<100
P03 Fugro 2018	BTB1003	0.5	24/10/2016	Made Ground	-		<1.1	<0.5	0.3			1.4					<100
P03 Fugro 2018	BTT1003	0.5	13/10/2016	Sand	PBTC-C1		<1.1	0.8	<0.25			3.4					<100
P03 Fugro 2018	TBT1001	1	10/11/2016	Made Ground	PBTC-C1		2.2	1.3	<0.25			3.2					<100
P02 SEGL 2023	BTB4006	0.2	04/02/2020	Made Ground	PBTC-C2		<1	<1	1.6			1.5					<30
P02 SEGL 2023	BTB4006	1	05/02/2020	Made Ground	PBTC-C2		10	<1	1.2			1.9					260
P02 SEGL 2023	BTB4006	5	05/02/2020	Sand	PBTC-C2		6.1	<1	<1			<1					<30
P02 SEGL 2023	BTB4007	1	17/03/2020	Silt	PBTC-C11		<1	2.5	<1			7.8					<30
P02 SEGL 2023	BTB4007A	0.5	17/03/2020	Silt	PBTC-C11		<1	<1	<1			5					<30
P02 SEGL 2023	BTB4007A	2	17/03/2020	Silt	PBTC-C11		<1	<1	<1			1.6					<30
P02 SEGL 2023	BTB4008	1	13/03/2020	Made Ground	PBTC-C1, PBTC-C11		2.2	1	<1			<1					<30
P02 SEGL 2023	BTB4008A	1	17/05/2021	Made Ground	PBTC-C1, PBTC-C11		1.5	1.8	2.5			<2.5					<30
P02 SEGL 2023	BTB4016	0.1	24/02/2020	Made Ground	-		1.3	<1	<1			1.5					4000
P02 SEGL 2023	BTB4016	1	24/02/2020	Made Ground	-		4.6	<1	<1			<1					1200
P02 SEGL 2023	BTB4018	1	24/02/2020	Made Ground	-		2.7	<1	<1			<1					15000
P02 SEGL 2023	BTB4028	0.5	07/02/2020	Gravel	PBTC-C22		<1	<1	<1			<1					<30
P02 SEGL 2023	BTB4029	0.5	06/02/2020	Made Ground	PBTC-C22		<1	<1	<1			3.7					<30
P02 SEGL 2023	BTB4029	1.5	07/02/2020	Made Ground	PBTC-C22		<1	<1	<1			<1					<30
P02 SEGL 2023	BTB4034A	0.3	19/05/2021	Made Ground	PBTC-C49		1.9	<0.5	0.8			<2.5					<30
P02 SEGL 2023	BTB4034A	1	19/05/2021	Sand	PBTC-C49		1.6	<0.5	0.6			<2.5					<30
P02 SEGL 2023	BTB4035	0.5	03/03/2020	Made Ground	PBTC-C49		4.4	<1	3.7			240					<30
P02 SEGL 2023	BTB4035	1	03/03/2020	Gravel	PBTC-C49		15	<1	2.4			66					<30
P02 SEGL 2023	BTB4042	0.5	13/03/2020	Sand/Gravel	PBTC-C1, PBTC-C2		5.2	1.2	<1			<1					130
P02 SEGL 2023	BTB4043	0.5	10/03/2020	Sand	PBTC-C1, PBTC-C2		4.3	<1	<1			3.2					<30
P02 SEGL 2023	BTB4058	0.3	27/02/2020	Made Ground	PBTC-C1		4.3	<1	1.5			45					<30
P02 SEGL 2023	BTB4059	0.3	11/03/2020	Gravel	PBTC-C1, PBTC-C2		1.4	<1	<1			10					<30
P02 SEGL 2023	BTB4060	0.5	27/02/2020	Made Ground	PBTC-C1, PBTC-C2		4.3	<1	<1			5.7					<30
P02 SEGL 2023	BTB4070	0.5	09/03/2020	Made Ground	-		7.6	<1	<1			1.2					<30
P02 SEGL 2023	BTH4000	1	04/03/2020	Gravel	-		<1	1.3	1			7.1					<30
P02 SEGL 2023	BTH4000A	1	17/05/2021	Sand	-		0.6	2.4	0.6			8					<30
P02 SEGL 2023	BTH4002	1	04/03/2020	Sand	-		1.5	1	1.2			1.4					<30
P02 SEGL 2023	BTH4002A	1	17/05/2021	Sand	-		0.2	1.5	1			3					<30
P02 SEGL 2023	BTH4003	1	04/03/2020	Sand	PBTC-C1		1.2	<1	<1			<1					<30
P02 SEGL 2023	BTH4003A	1	17/05/2021	Sand	PBTC-C1		4.7	0.8	1			<2.5					<30
P02 SEGL 2023	BTH4004	0.6	04/03/2020	Made Ground	PBTC-C22		<1	<1	<1			11					<30
P02 SEGL 2023	BTH4004A	0.6	19/05/2021	Made Ground	PBTC-C22		0.2	2.6	1.2			36					<30
P02 SEGL 2023	BTH4005	0.5	04/03/2020	Made Ground	PBTC-C22		<1	3.7	<1			1700					<30
P02 SEGL 2023	BTH4005A	0.5	19/05/2021	Made Ground	PBTC-C22		<0.2	0.6	0.9			5					<30
P02 SEGL 2023	BTH4007	0.5	05/03/2020	Made Ground	-		1.9	<1	<1			<1					<30
P02 SEGL 2023	BTH4007A	0.5	17/05/2021	Made Ground	-		0.9	<0.5	0.6			<2.5					<30
P02 SEGL 2023	BTH4009	0.6	05/03/2020	Gravel	PBTC-C49		<1	2.4	<1			3.1					<30
P02 SEGL 2023	BTH4009A	0.6	17/05/2021	Sand	PBTC-C49		0.3	1.9	1.2			6					<30
P02 SEGL 2023	BTH4010	0.25	09/03/2020	Made Ground	PBTC-C49		5.7	2.4	1.2			9.3					<30
P02 SEGL 2023	BTH4010	0.4	09/03/2020	Made Ground	PBTC-C49		9.4	3.5	2.2			8.1					<30
P02 SEGL 2023	BTH4010	1	09/03/2020	Sand	PBTC-C49		3.3	2.5	1.3			13					<30
P02 SEGL 2023	BTH4011	0.5	09/03/2020	Made Ground	PBTC-C49		4.6	<1	<1			1.6					<30
P02 SEGL 2023	BTH4012	0.3	05/02/2020	Topsoil	PBTC-C1		<1	<1	<1			14					<30
P02 SEGL 2023	BTH4013	0.5	05/03/2020	Gravel	PBTC-C1		<1	<1	<1			6.5					<30
P02 SEGL 2023	BTH4013A	0.5	17/05/2021	Gravel	PBTC-C1		<0.2	3.3	0.7			28					<30
P02 SEGL 2023	BTH4015	0.5	05/02/2020	Sand	PBTC-C1		<1	<1	<1			3.2					170
P02 SEGL 2023	BTT4016	0.3	19/02/2020	Made Ground	PBTC-C2		1.3	<1	<1			2.2					<30
P02 SEGL 2023	BTT4017	0.5	28/02/2020	Made Ground	-		<1	<1	<1			8.7					<30
P02 SEGL 2023	BTT4017	1.8	28/02/2020	Made Ground	-		<1	<1	<1			10					<30
P02 SEGL 2023	BTT4017	2.8	28/02/2020	Made Ground	-		<1	<1	<1			6.2					<30
P02 SEGL 2023	BTT4018	0.3	19/02/2020	Made Ground	PBTC-C2		<1	<1	<1			2.7					<30
P02 SEGL 2023	BTT4020A	0.3	17/05/2021	Made Ground	PBTC-C2		1.7	0.6	1			<2.5					<30
P02 SEGL 2023	BTT4022	1	19/02/2020	Made Ground	-		<1	<1	<1			2.2					<30
P02 SEGL 2023	BTT4024	0.3	05/03/2020	Made Ground	PBTC-C15		<1	3.7	<1			38					<30
P02 SEGL 2023	BTT4025	1.6	05/03/2020	Sand	PBTC-C15		<1	<1	<1			<1					<30
P02 SEGL 2023	BTT4025A	0.3	18/05/2021	Made Ground	PBTC-C15		0.3	2.4	1			29					<30
P02 SEGL 2023	BTT4026	0.3	17/02/2020	Made Ground	PBTC-C1		6.2	<1	1.4			<1					<30
P02 SEGL 2023	BTT4037	1	20/02/2020	Made Ground	PBTC-C1				<1			<1					<30
P02 SEGL 2023	BTT4042	0.5	09/03/2020	(Possible Made Gro	PBTC-C1, PBTC-C2		18	<1	<1			4.3					<30

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics			
Analyte				Conductivity-Electrical 20deg	pH	Biological Oxygen Demand	Chemical Oxygen Demand	Cyanide (Total)	Cyanide (Free)	Thiocyanate	Hardness	Hardness (Total as CaCO3)	Ammoniacal Nitrogen as N	Ammonia Free As N	Chloride	Phosphorus	Ortho Phosphate as PO4	Nitrite as N	Nitrite as NO2	Nitrate as N	Nitrate as NO3	Sulphate	
Unit				us/cm	pH UNITS	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Freshwater EQS Resource Protection Value									50						250			0.5		50		400	
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 Fugro 2016-A	BH17440	04/07/2016	-	155	8	2.2	<10	<40			33.5		<0.015		23			<0.035		0.29		6.3	
P02 Fugro 2016-A	BH17440	24/08/2016	-	141	7.5	2.7	<10	<40			45.2		0.6		22			<0.035		0.79		8.1	
P02 Fugro 2016-A	BH17440	01/12/2016	-	166	7.2	<1	230	<40			35.4		<0.015		21			<0.1			1.5	8.3	
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22	255	7	1.6	<10	<40			79.7		<0.015		12			<0.035			1.6	22	
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22	242	7.2	2.5	<10	<40			85.4		<0.015		8.1			<0.035			0.32	9	
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2	135	6.7	1.7	<10	<40			35.3		<0.15		11			<0.35			1.1	8.5	
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2	127	9.3	2.3	<10	<40			45		<0.015		13			<0.035			2.6	9.7	
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2	119	7.2	2.4	<10	<40			33.3		<0.015		9.9			<0.035			1.1	8.8	
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2	2470	7.8	3.1	<10	<40			365		<0.02		600			<0.04			2.3	75	
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2	1030	6.8	2.7	<10	<40			223		<0.021		30			<0.04			3.2	4.2	
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2	423	6.8	2.3	13	<40			99.9		<0.02		43			<0.04			1.4	16	
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2	169	6.9	6.8	181	<40			181		<0.02		23			<0.1			2.5	8.6	
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1	314	8.1	<1	<10	<40			46.9		<0.02		28			<0.04			<0.1	8.2	
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1	185	6.8	2.7	10	<40			54.9		0.27		36			<0.04			1.1	11	
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1	168	6.8	3.7	<10	<40			40.7		<0.02		24			<0.04			0.49	9	
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1	486	6.5	<1	309	<40			309		<0.02		79			<0.1			6.6	15	
P03 Fugro 2016-B	BH23200D	10/08/2016	-	221.0	7.3	3.5	<10	<40			83.3		<0.02		8.7			<0.04			0.9	15.0	
P03 Fugro 2016-B	BH23200D	06/04/2017	-	212.0	7.2	<1	<10	<40			71.5		<0.02		9.6							2.3	14.0
P03 Fugro 2016-B	BH23200S	06/04/2017	-	218.0	7.2	<1	<10	<40			76.1		0.0		9.1			<0.1				2.2	14.0
P03 Fugro 2016-B	BH23200S	10/08/2016	-	229.0	7.4	<1	<10	<40			86.5		<0.02		8.5			<0.04			1.7	15.0	
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1		7.75		<50	<50	<50		1080				<0.2								22.8
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30		7.21		<50	<50			144				<0.2								16.1
P02 SEGL 2015	BHBT045	06/08/2014	-		7.03		<50	<50	<50		135				<0.2		20.7	0.0172			0.088	28.2	11.7
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	91.5	7.11	<1	55.8	50	<50	<50	54.7		<0.2		10.6		0.273	<0.05			<0.05	2.37	15.5
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	177	7.75	<1	45	<50	<50	<50	91				13.8		<0.0063	<0.05			<0.05	4.96	9
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	282		<1	85.5	<50	<50	<50	434				16.6		<0.0063	<0.05			<0.05	3.72	12.1
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	198		5.08	74	<50	<50	<50	1480				1060		<0.0063	<0.05			<0.05	5.65	12.1
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	725		<1	17.5	<50	<50	<50	495				199		<0.0063	<0.05			<0.05	11.1	12.4
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	268		<1	31.2	<50	<50	<50	743				10.3		<0.0063	<0.05			<0.05	1.64	12.6
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	123		4.71	1030	<50	<50	<50	43.9				8.2		<0.0063	<0.05			<0.05	<0.3	9.6
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22		7.9			<50	<50	<50					254						0.145	2.77	11.1
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	284		<1	159	<50	<50	<50	280				10.8		<0.0063	<0.05			0.139	28.4	9.5
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	292		7.85	<1	297	<50	<50	168				23.8		0.628	<0.05			0.188	1.15	10.7
P02 SEGL 2015	BHBT109A	10/12/2014	-	293		<1	186	<50	<50	<50	30.7				32		<0.0063	<0.05			<0.05	1.31	39
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	422		<1	89.4	<50	<50	<50	176				17.7		<0.0063	<0.05			<0.05	20.9	21.2
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	400		7.69	2.72	148	<50	<50	262				60.6		3.64	<0.05			0.667	7.62	14.2
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	575		7.73	5.65	219	<50	<50	172				133		1.2	<0.05			<0.05	<0.3	14
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	158		7.59	<2.5	93.4	<50	<50	200				9.6		<0.0063	<0.05			<0.05	12	7.1
P02 SEGL 2015	BHBT122	30/01/2015	-	185		<1	177	<50	<50	<50	99.8				23.7		<0.0063	<0.05			<0.05	5.11	9.7
P02 SEGL 2015	BHBT124	28/01/2015	-	262			2.32	122	60	<50	<50				176		25.2	5.49	<0.05		<0.05	8.21	11.8
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	295		6.9		<50	<50	<50	85.1				46.3		0.0162				<0.05	5.92	12.9
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	278		7.76	<1	44.2	<50	<50	119				35.7		<0.0063	<0.05			<0.05	4.3	12.8
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	205		7.2	<1	8.97	<50	<50	116				11.4		0.0786	<0.05			<0.05	7.25	7.6
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	157		7.04	<2.5	63.2	<50	<50	95.2				9.4		<0.0063	<0.05			<0.05	4.17	5.4
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	387		<1	56.5	<50	<50	<50	113				66.8		0.00944	<0.05			<0.05	1.96	12.6
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1		6.71			<50	<50	<50	334				<0.2						<0.05		<2
P02 SEGL 2015	BHBT155	31/07/2014	-	385			3.64	48.2	<50	<50	<50				138		66.5	<0.0063	<0.05		<0.05	2.08	13.2
P02 SEGL 2015	BHBT157A	27/08/2014	-		7.47			<50	<50	<50	137				<0.2								15.9
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	154		7.32	8.52	312	<50	<50	<50				721		8.1	<0.0063	<0.05		<0.05	1.54	9.2
P02 SEGL 2015	BHBT177	08/01/2015	-	150		7.04	7.58	187	<50	<50	239				<0.2		8.1	<0.0063	<0.05		<0.05	6.1	9
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	167		7.78	8.75	626	<50	<50	<50				512		10.4	7.25	<0.05		<0.05	<0.3	7.6
P02 SEGL 2015	BHBT189-1	27/08/2014	-		7.49			<50	<50	<50	136				20.6		0.0088				<0.05	11	15.9
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	73.7		6.67	<2.5	160	<50	<50	206				7.8		<0.0063	<0.05			<0.05	0.575	3.1
P02 SEGL 2015	BHBT204	27/08/2014	-		6.49			<50	<50	<50	132												10.7
P02 SEGL 2015	BHBT207	09/12/2014	-	196		6.65	6.7	950	<50	<50	531				7.8		<0.0063	<0.05			0.206	9.52	44.3
P02 SEGL 2015	BHBT209A	22/08/2014	-												23		0.0532				<0.05	<0.3	61.8
P02 SEGL 2015	BHBT216	22/08/2014	-								88.3				<0.2		17.4	0.0225			<0.05	0.31	35.7
P02 SEGL 2015	BHBT217	09/12/2014	PBTC-C2	455		8.24	2.42	<7	<50	<50	<50				343		49.9	<0.0063	0.078		<0.05	6.33	7.8
P02 SEGL 2015	BHBT219	09/12/2014	PBTC-C1	253		7.7	4.62	12.1	<50	<50	1210				21		<0.0063	<0.05			0.106	0.75	7.2
P02 SEGL 2015	BHBT223A	30/01/2015	PBTC-C1	253		5.04	225	<50	<50	<50	528												

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Analyte Group				UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics			
Analyte				Conductivity-Electrical 20deg	pH	Biological Oxygen Demand	Chemical Oxygen Demand	Cyanide (Total)	Cyanide (Free)	Thiocyanate	Hardness	Hardness (Total as CaCO3)	Ammoniacal Nitrogen as N	Ammonia Free As N	Chloride	Phosphorus	Ortho Phosphate as PO4	Nitrite as N	Nitrite as NO2	Nitrate as N	Nitrate as NO3	Sulphate	
Unit				us/cm	pH UNITS	mg/L	mg/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Freshwater EQS Resource Protection Value									50						250			0.5		50		400	
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	220	8.5	<4	17	<50	<50			76	0.7							<0.02		3.6	15
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2	210	8.4	<4	<10	<50	<50			98	3.7							<0.02		3.2	22.0
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	420	7.9	<4	<10	<50	<50			110	0.19							<0.02		1.7	19
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	460	8.2	<4	20	<50	<50			140	1.6							<0.02		4.5	25
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2	550	8.3	<4	<10	<50	<50			39	4.5							<0.02		12	11.0
P02 SEGL 2023	BTB4044	21/06/2021	-	290	7.9	<4	<10	<50	<50			140	0.086							0.044		<0.5	18
P02 SEGL 2023	BTB4044	13/09/2021	-	290	7.3	<4	33	<50	<50			91	0.13							0.046		<0.5	10
P02 SEGL 2023	BTB4044	31/01/2022	-	320	8.3	<4	<10	<50	<50			32	0.051							<0.02		6.1	6.3
P02 SEGL 2023	BTB4045	21/06/2021	-	190	8	<4	<10	<50	<50			77	0.15							0.034		3.3	10
P02 SEGL 2023	BTB4045	06/09/2021	-	330	8.5	9	28	<50	<50			170	0.69							0.41		0.63	13
P02 SEGL 2023	BTB4045	31/01/2022	-	320	8.1	<4	<10	<50	<50			120	<0.05							<0.02		<0.5	13.0
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	180	8.2	4.6	10	<50	<50			53	0.12							<0.02		12	7.2
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	170	8.3	<4	<10	<50	<50			65	0.19							0.046		15	11
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1	170	8.2	<4	<10	<50	<50			54	0.38							0.045		9	6.8
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	86	7.5	6	34	<50	<50			18	0.3							0.039		1.3	6.1
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1	120	8.6	<4	10	<50	<50			17	0.6							0.048		1.2	6.7
P02 SEGL 2023	BTB4053	15/07/2021	-	180	9	<4	<10	<50	<50			21	<0.05							<0.02		1.5	8.7
P02 SEGL 2023	BTB4053	07/09/2021	-	87	7.5	8	32	<50	<50			23	<0.05							<0.02		0.7	8.1
P02 SEGL 2023	BTB4053	26/01/2022	-	90	8.5	<4	<10	<50	<50			22	0.28							0.05		0.66	6.6
P02 SEGL 2023	BTB4055	16/06/2021	-	100	8.1	<4	<10	<50	<50			21	0.069							<0.02		3.7	7.1
P02 SEGL 2023	BTB4055	26/01/2022	-	90	8	<4	<10	<50	<50			22	5.3							0.038		4.5	7.6
P02 SEGL 2023	BTB4057	17/06/2021	-	210	8.4	<4	<10	<50	<50			56	0.93							<0.02		24	7.2
P02 SEGL 2023	BTB4057	07/09/2021	-	120	6.9	<4	24	<50	<50			46	<0.05							<0.02		10	6.1
P02 SEGL 2023	BTB4057	27/01/2022	-	150	8.4	<4	<10	<50	<50			40	3.6							<0.02		8.7	7.6
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	200	7.7	4	<10	<50	<50			46	0.31							0.045		<0.5	14
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	140	8	<4	<10	<50	<50			33	0.23							<0.02		<0.5	7.8
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	510	8.2	<4	<10	<50	<50			160	0.16							<0.02		8	15
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	460	7.9	8	28	<50	<50			150	<0.05							<0.02		4.3	14
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2	350	8.3	<4	<10	<50	<50			120	2.6							0.033		7	16.0
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	390	8.5	<4	15	<50	<50			95	<0.05							<0.02		2.6	12
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	290	7.9	<4	<10	<50	<50			100	0.1							<0.02		<0.5	12
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1	330	7.9	<4	<10	<50	<50			94	0.13							<0.02		2.2	14.0
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	840	8.3	4	16	<50	<50			390	5.1							<0.02		2.7	39.0
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	280	7.9	<4	<10	<50	<50			130	0.21							0.031		<0.5	12
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	190	7.9	13	<10	<50	<50			79	0.057							<0.02		2.4	9.7
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2	230	8.6	<4	<10	<50	<50			65	3.6							<0.02		2.4	14.0
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	840	8.1	4	<10	<50	<50			230	11							0.031		3.9	31.0

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

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Analyte Group				UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals			
Analyte				Sulphide	Sodium	Calcium	Total Organic Carbon	Sulphur	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium Hexavalent (Cr6+)	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	
Unit				mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Freshwater EQS									15	5	10	2000	0.05	3.4	50	1	1000	1.2		123	1		
Resource Protection Value																							
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 Fugro 2016-A	BH17440	04/07/2016	-	<0.01						0.35	0.92		<0.03		2.1	<0.4		0.14			0.02	<1.1	
P02 Fugro 2016-A	BH17440	24/08/2016	-	<0.01					0.26	0.77		<0.03		5.7	0.7		0.27				<0.01	3.1	
P02 Fugro 2016-A	BH17440	01/12/2016	-	<0.01					0.18	<0.16		<0.03		<0.25	<0.4		<0.09				<0.01	<1.1	
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22	<0.01					0.34	0.76		<0.03		0.3	0.8		0.12				0.02	<1.1	
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22	0.022					<0.17	1.4		<0.03		0.49	3.3		0.42				0.03	2.8	
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2	<0.01					0.34	0.4		<0.03		<0.25	0.4		<0.09				<0.01	<1.1	
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2	0.015					0.19	0.45		<0.03		5.5	1.1		0.12				<0.01	<1.1	
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2	0.014					<0.17	<0.16		<0.03		4	2.4		0.11				0.01	<1.1	
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2	0.012				7.22	0.51	0.2		0.1	<30	<0.25	3.5		<0.09				0.01	<1.1	
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2	<0.01					<0.17	0.67		0.04		1.3	1.9		<0.09				<0.01	<1.1	
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2	0.021					0.19	0.46		<0.03		5.3	3.2		0.24				<0.01	<1.1	
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2	<0.01					<0.17	<0.16		<0.03		0.71	1.6		<0.09				<0.01	<1.1	
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1	0.013					0.71	<0.16		<0.03		<0.25	<0.4		<0.09				<0.01	<1.1	
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1	<0.01					0.4	<0.16		<0.03		0.28	0.8		0.98				0.02	<1.1	
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1	0.011					<0.17	<0.16		<0.03		1.1	1.2		0.26				0.03	<1.1	
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1	<0.01					0.3	0.21		0.05		0.64	2.8		0.09				<0.01	<1.1	
P03 Fugro 2016-B	BH23200D	10/08/2016	-	<0.01					<0.17	0.2		0.0		4.2	0.6		0.2				<0.01	<1.1	
P03 Fugro 2016-B	BH23200D	06/04/2017	-	<0.01					<0.17	0.2		<0.03		4.9	0.5		<0.09				<0.01	1.3	
P03 Fugro 2016-B	BH23200S	06/04/2017	-	<0.01					0.3	0.9		0.05		4.9	0.5		0.3				0.3	6.4	
P03 Fugro 2016-B	BH23200S	10/08/2016	-	<0.01					<0.17	0.5		0.0		5.2	1.8		0.4				<0.01	<1.1	
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1	<0.01				7.22	5.11	0.703	16.2	0.115	<30	16.3	1.81		<19	0.143			0.0105		
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30	<0.01					0.58	0.58	<9.4	<0.1	<30	4.12	5.17		<19	0.068			0.0126		
P02 SEGL 2015	BHBT045	06/08/2014	-	<0.01	8.9	44.8		3.83	<2.9	0.447	16.6	<0.1	<30	2.05	2.22		<19	0.033	5680		241	<0.01	
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	<0.01	5.18	8.02	<3	3.26	9.22	<0.12	11.4	<0.1	<30	0.592	1.46		<19	0.028	2070		16.3	<0.01	
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	<0.01	7.66	24.5	<3	2.61	5.2	0.536	13.9	<0.1	<30	1.86	13.6		33.4	0.022	2780		7.29	<0.01	
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	<0.01	9.68	21.8	5.72	3.74	<2.9	0.188	28.4	<0.1	<30	<0.22	1.02		<19	<0.02	5400		43.3	<0.01	
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	<0.01	4.79	14.9	14.3	3.38	<2.9	0.309	29.2	3.25	<30	<0.22	1.59		91.4	0.571	18200		2960	<0.01	
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	<0.01	55.2	59.1	17.5	33.7	<2.9	3.57	<2.9	33.7	<0.1	<30	<0.22	2.46		<19	0.334	12700		329	<0.01
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	<0.01	7.77	35.7	27.8	3.87	<2.9	0.58	16.6	<0.1	<30	<0.22	2.22		<19	0.026	8230		462	<0.01	
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	<0.01	5.96	11.4	<3	2.89	<2.9	<0.12	<9.4	<0.1	<30	<0.22	1.53		<19	0.029	3740		210	<0.01	
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22	<0.01	11.9	33.5		3.62	2.95	0.368	24.6	<0.1	<30	3.24	2.75		<19	<0.02	12900		1100	<0.01	
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	<0.01	17.5	27.7	<3	2.93	32.8	10.9	24.2	<0.1	<30	3.48	6.51		<19	0.078	6600		4.6	<0.01	
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	<0.01	20.1	28.3	<3	3.99	3.61	0.39	55.8	<0.1	<30	1.32	<0.85		<19	<0.02	6300		2310	<0.01	
P02 SEGL 2015	BHBT109A	10/12/2014	-	<0.01	53.6	7.74	4.92	12.4	116	1.15	19.5	<0.1	<30	0.549	6.29		880	1.01	2750		259	<0.01	
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	<0.01	16.7	60.6	3.28	5.81	<2.9	1.04	81.6	<0.1	<30	<0.22	5.34		<19	0.038	5870		160	<0.01	
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	<0.01	42	32.8	<3	4.82	<2.9	0.5	72.3	<0.1	<30	1.49	<0.85		<19	<0.02	6810		3300	<0.01	
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	<0.01	85.4	26.4	<3	5.75	4.09	0.291	23.7	<0.1	<30	1.18	<0.85		<19	0.033	4670		6740	<0.01	
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	<0.1	9.22	18.5	<3	2.26	<2.9	0.38	35	<0.1	<30	1.65	11.6		<19	<0.02	3370		21.7	<0.01	
P02 SEGL 2015	BHBT122	30/01/2015	-	<0.01	18.3	13.3	<3	3.08	5.67	22.4	0.559	18.3	<0.1	<30	1.1	140	0.973	<19	<0.02	2160		140	<0.01
P02 SEGL 2015	BHBT124	28/01/2015	-	<0.01	25.9	26.1	<3	4	12.4	0.541	78	<0.1	<30	4.76	30.9		<19	1.3	3360		5.92	<0.01	
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	<0.01	32.3	17.3	<3	4.32	<2.9	0.159	40.2	<0.1	<30	<0.22	0.916		<19	0.022	3720		580	<0.01	
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	<0.05	25.3	26	<3	3.69	<2.9	0.137	<9.4	<0.1	<30	0.866	5.55		<19	<0.02	4340		58.4	<0.01	
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	<0.01	8.14	28.2	<3	2.59	<2.9	0.201	<9.4	<0.1	<30	1.38	<0.85		<19	<0.02	5310		40.7	<0.01	
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	<0.05	12.6	16.2	<3	2.42	<2.9	0.242	9.48	0.201	<30	0.972	6.7		<19	<0.02	3180		307	<0.01	
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	<0.01	53.4	21.7	<3	3.7	7.15	0.226	16.4	<0.1	<30	1.08	2.2		43.7	0.031	2300		29.5	<0.01	
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1	<0.01				1.75	<0.1	0.143	<9.4	<0.1	<30	15.1	<0.85		<19	0.042				<0.01	
P02 SEGL 2015	BHBT155	31/07/2014	-	<0.01	54	21.9	<3	3.73	<2.9	0.259	14.1	<0.1	<30	1.08	2.62		53	<0.02	2300		39.3	<0.01	
P02 SEGL 2015	BHBT157A	27/08/2014	-	<0.01				5.14	<0.1	0.512	29.1	<0.1	<30	2.48	1.96		<19	0.045				<0.01	
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	<0.01	4.3	17	<3	2.95	12.9	0.355	14.4	<0.1	<30	<0.22	<0.85		23.3	<0.02	4150		1360	<0.01	
P02 SEGL 2015	BHBT177	08/01/2015	-	<0.01	5.58	16.3	<3	3.23	<2.9	0.291	<9.4	<0.1	<30	<0.22	<0.85		<19	<0.02	3780		371	<0.01	
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	<0.01	5.92	18.1	3.76	2.34	61.7	2.57	<9.4	<0.1	<30	1.06	4.24		92.9	0.132	5200		684	<0.01	
P02 SEGL 2015	BHBT189-1	27/08/2014	-	<0.01	10	44.2	0.526	5.13	3.38	0.27	27.1	<0.1	<30	2.28	1.58		<19	0.034	6080		4.1	<0.01	
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	<0.01	4.65	6.12	<3	1.68	5.6	0.502	15.5	0.212	<30	0.499	<0.85		<19	0.238	2300		518	<0.01	
P02 SEGL 2015	BHBT204	27/08/2014	-	<0.01				3.4	0.345	0.223	22.3	<0.1	<30	1.14	1.39		<19	0.076				<0.01	
P02 SEGL 2015	BHBT207	09/12/2014	-	<0.01	5.32	17.4	<3	13.2	<2.9	1.11	20.8	0.12	<30	0.507	<0.85		1320	0.14	9350		180	<0.01	
P02 SEGL 2015	BHBT209A	22/08/2014	-																				

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Inorganics	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals			
Analyte				Sulphide	Sodium	Calcium	Total Organic Carbon	Sulphur	Aluminium	Antimony	Arsenic	Boron	Cadmium	Chromium Hexavalent (Cr6+)	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	
Unit				mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value									15	5	50	2000	0.05	3.4	50	1	1000	1.2		123	1		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.05			<2				<0.2		<0.11	<20	6.1	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2	<0.05			<2				1.8		<0.11	<20	0.88	12		6.1				<0.05	
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.05			20				<0.2		<0.11	<20	<0.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.05			2.2				0.36		<0.11	<20	8.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2	<0.05			<2				<0.2		<0.11	<20	0.82	0.8		<0.5				<0.05	
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.05			6.1				0.44		<0.11	<20	18	1.2		<0.5				<0.05	
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.05			16000				0.5		0.13	<20	6.4	75		0.67				0.11	
P02 SEGL 2023	BTB4044	31/01/2022	-	<0.05			9.6				2.4		0.23	<20	8.8	19		2.9				0.11	
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.05			8				0.3		<0.11	<20	23	2.7		<0.5				<0.05	
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.05			17				1.9		<0.11	<20	20	1.5		<0.5				<0.05	
P02 SEGL 2023	BTB4045	31/01/2022	-	<0.05			35				1.8		<0.11	<20	7.8	2.2		1.3				<0.05	
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.05			<2				0.49		<0.11	<20	1.7	2.1		<0.5				<0.05	
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.05			6.7				0.45		<0.11	<20	10	7.9		<0.5				<0.05	
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1	<0.05			<2				0.63		<0.11	<20	0.51	2.9		<0.5				<0.05	
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.05			5.5				0.21		<0.11	<20	18	2.6		0.61				<0.05	
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1	<0.05			2.4				0.28		<0.11	<20	<0.5	1.8		<0.5				<0.05	
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.05			<2				<0.2		<0.11	<20	<0.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.05			4.7				<0.2		<0.11	<20	20	1.6		0.5				<0.05	
P02 SEGL 2023	BTB4053	26/01/2022	-	<0.05			2.1				<0.2		<0.11	<20	0.65	3.4		2.3				<0.05	
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.05			<2				<0.2		<0.11	<20	1.6	0.73		<0.5				<0.05	
P02 SEGL 2023	BTB4055	26/01/2022	-	<0.05			<2				<0.2		<0.11	<20	<0.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.05			<2				<0.2		<0.11	<20	1.5	12		<0.5				<0.05	
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.05			9.6				<0.2		<0.11	<20	24	1.4		<0.5				<0.05	
P02 SEGL 2023	BTB4057	27/01/2022	-	<0.05			<2				<0.2		<0.11	<20	<0.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.05			9.1				0.63		<0.11	<20	7.1	0.7		<0.5				<0.05	
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.05			11				0.26		<0.11	<20	<0.5	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.05			9.4				0.29		<0.11	<20	1.9	3.2		<0.5				<0.05	
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.05			13				0.39		<0.11	<20	20	2.5		<0.5				<0.05	
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2	<0.05			<2				0.48		<0.11	<20	1.1	0.96		<0.5				<0.05	
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.05			<2				0.46		<0.11	<20	1.4	<0.5		<0.5				<0.05	
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.05			11000				0.44		<0.11	<20	8.6	4.2		<0.5				<0.05	
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1	<0.05			22				1.1		<0.11	<20	1.8	5.7		<0.5				<0.05	
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.05			3.9				0.21		<0.11	<20	1.3	1.7		<0.5				<0.05	
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.05			<2				0.5		<0.11	<20	21	1.1		<0.5				<0.05	
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.05			9.3				<0.2		<0.11	<20	12	1.5		<0.5				<0.05	
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2	<0.05			<2				<0.2		<0.11	<20	6.4	1.3		<0.5				<0.05	
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.05			<2				<0.2		<0.11	<20	0.56	1.4		<0.5				<0.05	

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Metals	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG									
Analyte				Nickel	Potassium	Selenium	Tin	Vanadium	Zinc	TPH Aliphatic >C5-C6	TPH Aliphatic >C6-C8	TPH Aliphatic >C8-C10	TPH Aliphatic >C10-C12	TPH Aliphatic >C12-C16	TPH Aliphatic >C16-C21	TPH Aliphatic >C21-C35	TPH Aliphatic >C35-C44	TPH Aliphatic >C45-C55	TPH Aromatic >C5-C7	TPH Aromatic >C7-C9	TPH Aromatic >C9-C11	TPH Aromatic >C11-C13	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l						
Freshwater EQS				4		10	25	20	10.9														
Resource Protection Value				20																			
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 Fugro 2016-A	BH17440	04/07/2016	-	0.6		0.34		0.7	37	<0.01	<0.01	7.1	<1	<1	<1	<1	<10	<0.01		<0.01		5.1	
P02 Fugro 2016-A	BH17440	24/08/2016	-	<0.5		3.2		1.8	5.7	<0.01	<0.01	<0.01	<1	<1	<1	<1	<10	<0.01		<0.01		<0.01	
P02 Fugro 2016-A	BH17440	01/12/2016	-	<0.5		<0.25		0.8	2.4	<0.01	<0.01	<0.01	<1	<1	<1	<1	<10	<0.01		<0.01		<0.01	
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22	0.7		<0.25		2.5	51	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22	2.4		1.1		3.4	3.4	<0.1	0.64	<0.1	<1	1.7	<1	13	15	<0.1		<0.1		<0.1	
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2	<0.5		<0.25		<0.6	7	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2	1.6		1.6		3	2.7	<0.1	0.35	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2	1.1		0.56		<0.6	4.4	<0.1	0.56	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2	1.5		<0.25		<0.6	9	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2	2.3		0.34		2.8	12	<0.1	0.34	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2	0.8		0.59		0.8	3.5	<0.1	0.8	<0.1	<1	2.1	9.1	11	22	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2	0.6		<0.25		0.9	3.8	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1	<0.5		<0.25		<0.6	7	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1	<0.5		0.42		2.1	49	<0.1	0.42	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1	<0.5		1		<0.6	6	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1	3.1		<0.25		0.9	10	<0.1	<0.1	<0.1	<1	<1	<1	6.7	6	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH23200D	10/08/2016	-	0.9		<0.25		<0.6	3.8	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH23200D	06/04/2017	-	<0.5		4.25		0.7	19.7	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH23200S	06/04/2017	-	0.8		<0.1		0.7	16	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P03 Fugro 2016-B	BH23200S	10/08/2016	-	<0.5		<0.25		0.7	4.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<10	<0.1		<0.1		<0.1	
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1	1.94		0.989	1.63	0.439	3.81	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30	7.74		<0.39	0.563	<0.24	6.54	<10	<10	<10	<10	216	380	232		<10		<10		<10	
P02 SEGL 2015	BHBT045	06/08/2014	-	3.14	2870	<0.39	0.916	0.672	13.8	<10	<10	<10	<10	<10	<10	<10		<10		<10		<10	
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	0.521	<1000	<0.39	<0.36	<0.24	11.9	<10	<10	<10	<10	<10	<10	<10		<10		<10		<10	
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	1.1	2050	1.87	0.816	0.358	4.5	<10	<10	<10	<10	<10	<10	<10	60	<10		<10		<10	
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	1.43	2460	<0.39	<0.36	<0.24	<0.41	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	10.6	9910	0.697	<0.36	<0.24	0.499	<10	<10	<10	<10	<10	<10	208	9810	<10		<10		<10	
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	3.78	4400	2.15	<0.36	<0.24	0.678	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	2.3	3750	7.71	<0.36	<0.24	0.472	<10	<10	<10	<10	<10	<10	34	58	389	<10		<10	<10	
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	3.2	<1000	<0.39	<0.36	<0.24	<0.41	<10	<10	<10	<10	<10	<10	<10	44	<10		<10		<10	
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22	6.28	4160	1.37	<0.36	0.864	<0.41	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	4.14	3740	3.06	0.564	26	7.77	<10	<10	<10	<10	<10	<10	41	223	<10		<10		<10	
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	7.77	5100	0.586	<0.36	0.453	0.689	<10	<10	<10	<10	11	55	803	<10		<10		<10	<10	
P02 SEGL 2015	BHBT109A	10/12/2014	-	1.74	2170	0.613	<0.36	0.509	<0.41	<10	<10	<10	<10	31	19	39	<10		<10		<10	<10	
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	8.15	4960	0.593	<0.36	<0.24	<0.41	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	5.33	4550	1.04	<0.36	0.505	0.506	<10	<10	<10	<10	<10	<10	87	<10		<10		<10	<10	
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	7.02	2960	0.655	<0.36	0.352	0.441	<10	<10	<10	<10	13	138	1930	<10		<10		<10	<10	
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	1.99	3080	0.85	0.781	0.325	5.42	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT122	30/01/2015	-	1.38	1290	0.757	0.451	0.271	0.796	<10	<10	<10	<10	<10	<10	52	347	<10		<10		<10	
P02 SEGL 2015	BHBT124	28/01/2015	-	2.04	1400	1.94	0.399	0.565	52.1	<10	<10	<10	<10	<10	<10	<10	36	<10		<10		<10	
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	7.05	2170	<0.39	<0.36	<0.24	2.06	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	2.07	1400	0.636	<0.36	<0.24	3.67	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	1.17	2200	0.427	<0.36	0.387	5.07	<10	<10	<10	<10	<10	<10	<10	16	<10		<10		<10	
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	4.4	2560	0.503	0.446	0.902	3.3	<10	<10	<10	<10	<10	<10	<10	270	<10		<10		<10	
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	1.61	2430	<0.39	<0.36	<0.24	4.83	<10	<10	<10	<10	<10	<10	<10	113	<10		<10		<10	
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1	0.46	<0.39	0.701	<0.24	1.96		<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT155	31/07/2014	-	1.75	2070	<0.39	<0.36	<0.24	7.2	<10	<10	<10	<10	<10	<10	<10	248	<10		<10		<10	
P02 SEGL 2015	BHBT157A	27/08/2014	-	1.88	<0.39	1.56	0.574	2.58		<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	1.58	1910	<0.39	<0.36	<0.24	<0.41	<10	<10	<10	<10	<10	<10	41	1440	<10		<10		<10	
P02 SEGL 2015	BHBT177	08/01/2015	-	1.89	1530	0.448	0.826	<0.41	<0.41	<10	<10	<10	<10	<10	<10	<10	400	<10		<10		<10	
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	4.75	6910	<0.39	<0.36	0.624	<0.41	<10	<10	<10	<10	<10	<10	14	470	<10		<10		<10	
P02 SEGL 2015	BHBT189-1	27/08/2014	-	1.8	2360	0.592	0.876	0.638	2.46	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10		<10	
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	4.05	227																		

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-Metals	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG		
Analyte				Nickel	Potassium	Selenium	Tin	Vanadium	Zinc	TPH Aliphatic >C5-C6	TPH Aliphatic >C6-C8	TPH Aliphatic >C8-C10	TPH Aliphatic >C10-C12	TPH Aliphatic >C12-C16	TPH Aliphatic >C16-C21	TPH Aliphatic >C21-C35	TPH Aliphatic >C35-C44	TPH Aliphatic >C5-C35	TPH Aromatic >C5-C7	TPH Aromatic >C6-C7	TPH Aromatic >C7-C8	TPH Aromatic >C8-C10
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l						
Freshwater EQS				4		10	25	20	10.9													
Resource Protection Value				20																		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	1.1		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2	5.6		1.8			62	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.5		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	8.4		0.55			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2	1.1		<0.5			21	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4044	21/06/2021	-	7.5		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4044	13/09/2021	-	44		<0.5			50	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4044	31/01/2022	-	25		<0.5			670	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4045	21/06/2021	-	7.6		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4045	06/09/2021	-	7.9		0.7			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4045	31/01/2022	-	2.5		<0.5			160	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	0.78		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	0.55		<0.5			6.1	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1	0.69		<0.5			6.8	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	7.8		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1	0.61		<0.5			7.7	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4053	15/07/2021	-	0.54		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4053	07/09/2021	-	7.9		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4053	26/01/2022	-	<0.5		1.6			31	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4055	16/06/2021	-	0.58		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4055	26/01/2022	-	<0.5		<0.5			2.7	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4057	17/06/2021	-	1.8		<0.5			15	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4057	07/09/2021	-	8.2		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4057	27/01/2022	-	0.83		<0.5			6.9	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	4.5		<0.5			67	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	0.82		<0.5			8.8	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	0.57		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	6.9		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2	<0.5		<0.5			9.9	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	0.97		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	1		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1	1.9		<0.5			110	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	0.81		<0.5			4	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	7.2		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	2.7		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2	0.7		<0.5			25	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	1.5		<0.5			<2.5	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-TPHCWG	UK&I-RA-Other TPH	UK&I-RA-Other TPH	UK&I-RA-Other TPH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH	UK&I-RA-PAH
Analyte				TPH Aromatic >C10-C12	TPH Aromatic >C12-C16	TPH Aromatic >C16-C21	TPH Aromatic >C21-C35	TPH Aromatic >C35-C44	TPH Aliphatic & Aromatic >C5-35	Total Aromatic Hydrocarbons	Total Aliphatic Hydrocarbons	TPH Aliphatic & Aromatic >C10-C40	Total Petroleum Hydrocarbons	TPH Aromatics >C12-C35	TPH Aliphatics >C12-C35	GRO >C5-12	Naphthalene	Fluorene	Acenaphthylene	Acenaphthene	Anthracene	Phenanthrene	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value																		2			0.1		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4044	31/01/2022	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4045	31/01/2022	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4053	26/01/2022	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4055	26/01/2022	-	<0.1	<0.1	<0.1	260	<0.1	260	210		470					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4057	27/01/2022	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1		<2					<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC		
Analyte				Total BTEX	Methyl Tert-Butyl Ether	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trichlorobenzene	1,3,5-Trimethylbenzene	1,3-Dichloropropane
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS							140	100	400	5	7	20				0.2	400	3	5			
Resource Protection Value																						
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 Fugro 2016-A	BH17440	04/07/2016	-																			
P02 Fugro 2016-A	BH17440	24/08/2016	-																			
P02 Fugro 2016-A	BH17440	01/12/2016	-																			
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22																			
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22																			
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2																			
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2																			
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2																			
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1																			
P03 Fugro 2016-B	BH23200D	10/08/2016	-																			
P03 Fugro 2016-B	BH23200D	06/04/2017	-																			
P03 Fugro 2016-B	BH23200S	06/04/2017	-																			
P03 Fugro 2016-B	BH23200S	10/08/2016	-																			
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT045	06/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT109A	10/12/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT122	30/01/2015	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT124	28/01/2015	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT155	31/07/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT157A	27/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT177	08/01/2015	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT189-1	27/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT204	27/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT207	09/12/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT209A	22/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT216	22/08/2014	-	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT217	09/12/2014	PBTC-C2	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT219	09/12/2014	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT223A	30/01/2015	PBTC-C1	<28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2023	BTB4001	15/06/2021	-	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.5	<0.5	<0.2	<0.1	<0.1	<0.1	<0.1	<0.2
P02 SEGL 2023	BTB4001	14/09/2021	-	<																		

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC			
Analyte				Total BTEX	Methyl Tert-Butyl Ether	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trichlorobenzene	1,3,5-Trimethylbenzene	1,3-Dichloropropane	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value							140	100	400	5	7	20				0.2	400	10	3	5			
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4044	21/06/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4044	13/09/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4044	31/01/2022	-																				
P02 SEGL 2023	BTB4045	21/06/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4045	06/09/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4045	31/01/2022	-																				
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4053	15/07/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4053	07/09/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4053	26/01/2022	-																				
P02 SEGL 2023	BTB4055	16/06/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4055	26/01/2022	-																				
P02 SEGL 2023	BTB4057	17/06/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4057	07/09/2021	-		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4057	27/01/2022	-																				
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2		<0.1	<0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<5	<0.1	<5	<0.5	<0.2	<0.1		<0.1	<0.2	

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC			
Analyte				2,2-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	4-Isopropyltoluene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromomethane	Carbon Disulfide	Chlorobenzene	Chloroethane	Chloromethane	cis 1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoroethane	Dichloromethane	Isopropylbenzene	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Freshwater EQS Resource Protection Value												100				50						20	5
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4044	21/06/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4044	13/09/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4044	31/01/2022	-																				
P02 SEGL 2023	BTB4045	21/06/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4045	06/09/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4045	31/01/2022	-																				
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4053	15/07/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4053	07/09/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4053	26/01/2022	-																				
P02 SEGL 2023	BTB4055	16/06/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4055	26/01/2022	-																				
P02 SEGL 2023	BTB4057	17/06/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4057	07/09/2021	-		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4057	27/01/2022	-																				
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	0.21	0.11	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2		<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<2		<0.1	<0.2	<0.1	<0.1	<1	<1	<0.1	<0.1		<0.1	

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC			
Analyte				Hexachlorobutadiene	N-Butylbenzene	N-Propylbenzene	Sec-Butylbenzene	Styrene	Tert-amyl methyl ether	Tert-Butylbenzene	Tetrachloroethene	Tetrachloromethane	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Tribromomethane	Trichloroethene	Trichlorofluoromethane	Trichloromethane	Vinyl Chloride	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				0.1				50 20			10	12 3	50			10		2.5	0.5	70	600	
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 Fugro 2016-A	BH17440	04/07/2016	-																			
P02 Fugro 2016-A	BH17440	24/08/2016	-																			
P02 Fugro 2016-A	BH17440	01/12/2016	-																			
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22																			
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22																			
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2																			
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2																			
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2																			
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2																			
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1																			
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1																			
P03 Fugro 2016-B	BH23200D	10/08/2016	-																			
P03 Fugro 2016-B	BH23200D	06/04/2017	-																			
P03 Fugro 2016-B	BH23200S	06/04/2017	-																			
P03 Fugro 2016-B	BH23200S	10/08/2016	-																			
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT045	06/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT109A	10/12/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT122	30/01/2015	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT124	28/01/2015	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT155	31/07/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT157A	27/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT177	08/01/2015	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT189-1	27/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT204	27/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT207	09/12/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT209A	22/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT216	22/08/2014	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT217	09/12/2014	PBTC-C2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT219	09/12/2014	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2015	BHBT223A	30/01/2015	PBTC-C1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
P02 SEGL 2023	BTB4001	15/06/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4001	14/09/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05
P																						

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-VOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC			
Analyte				Hexachlorobutadiene	N-Butylbenzene	N-Propylbenzene	Sec-Butylbenzene	Styrene	Tert-amyl methyl ether	Tert-Butylbenzene	Tetrachloroethene	Tetrachloromethane	Trans-1,2-Dichloroethene	Trans-1,3-Dichloropropene	Tribromomethane	Trichloroethene	Trichlorofluoromethane	Trichloromethane	Vinyl Chloride	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Freshwater EQS Resource Protection Value				0.1				50 20			10	12 3	50			10		2.5	0.5	70	600		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4044	31/01/2022	-																				
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4045	31/01/2022	-																				
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4053	26/01/2022	-																				
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4055	26/01/2022	-																				
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4057	27/01/2022	-																				
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	0.17	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC
Analyte				1,4-Dichlorobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	2-Chloronaphthalene	2-Methylnaphthalene	2-Nitroaniline	3-Nitroaniline	4-Bromophenyl Ether	4-Chloroaniline	4-Chlorophenyl ether	4-Nitroaniline	Azobenzene	Bis(2-Chloroethoxy)Methane	Bis-(2-Chloroethyl)Ether	Bis(2-Chloroisopropyl)Ether	Bis(2-Ethylhexyl)Phthalate	Butylbenzyl Phthalate	Carbazole	Dibenzofuran
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				80															1.3	7.5		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4044	31/01/2022	-																			
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4045	31/01/2022	-																			
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4053	26/01/2022	-																			
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4055	26/01/2022	-																			
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4057	27/01/2022	-																			
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	
Analyte				Diethyl Phthalate	Dimethylphthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodi-N-propylamine	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-Chloro-3-Methylphenol		
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Freshwater EQS				200	800	8	20	0.1								200			50	100			40	
Resource Protection Value																								
GI Reference	Location Reference	Sample Date	Contaminative Source ID																					
P02 Fugro 2016-A	BH17440	04/07/2016	-																					
P02 Fugro 2016-A	BH17440	24/08/2016	-																					
P02 Fugro 2016-A	BH17440	01/12/2016	-																					
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22																					
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22																					
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2																					
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2																					
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2																					
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2																					
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2																					
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2																					
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2																					
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1																					
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1																					
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1																					
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1																					
P03 Fugro 2016-B	BH23200D	10/08/2016	-																					
P03 Fugro 2016-B	BH23200D	06/04/2017	-																					
P03 Fugro 2016-B	BH23200S	06/04/2017	-																					
P03 Fugro 2016-B	BH23200S	10/08/2016	-																					
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1																					
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30																					
P02 SEGL 2015	BHBT045	06/08/2014	-																					
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1	<1	<1	2.15	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22																					
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT109A	10/12/2014	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT122	30/01/2015	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT124	28/01/2015	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	<1	<1	2.55	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1																					
P02 SEGL 2015	BHBT155	31/07/2014	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT157A	27/08/2014	-																					
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	<1	<1	<1	<5	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT177	08/01/2015	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT189-1	27/08/2014	-																					
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT204	27/08/2014	-																					
P02 SEGL 2015	BHBT207	09/12/2014	-	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT209A	22/08/2014	-																					
P02 SEGL 2015	BHBT216	22/08/2014	-																					
P02 SEGL 2015	BHBT217	09/12/2014	PBTC-C2	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT219	09/12/2014	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2015	BHBT223A	30/01/2015	PBTC-C1	<1	<1	<1	<5	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
P02 SEGL 2023	BTB4001	15/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4001	14/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
P02 SEGL 2023	BTB4001	25																						

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-SVOC	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	
Analyte				Diethyl Phthalate	Dimethylphthalate	Di-N-Butyl Phthalate	Di-N-Octyl Phthalate	Hexachlorobenzene	Hexachlorocyclopentadiene	Hexachloroethane	Isophorone	Nitrobenzene	N-Nitrosodimethylamine	N-Nitrosodi-N-propylamine	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-Chloro-3-Methylphenol
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				200	800	8	20	0.1								200	4.2		50	100		40
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4044	31/01/2022	-																			
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4045	31/01/2022	-																			
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4053	26/01/2022	-																			
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4055	26/01/2022	-																			
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4057	27/01/2022	-																			
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-Phenols	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB		
Analyte				4-Methylphenol	4-Nitrophenol	Phenol	Pentachlorophenol	2,3,5-trimethyl phenol	2-isopropylphenol	2-Methyl-4,6-Dinitrophenol	Methylphenols (Total Cresols)	Xylenols	Phenol (Monohydric - Total by HPLC)	PCB 118	PCB 77	PCB 81	PCB 105	PCB 114	PCB 123	PCB 126	PCB 156	PCB 157	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				100		7.7	0.4						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4044	21/06/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4044	13/09/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4044	31/01/2022	-																				
P02 SEGL 2023	BTB4045	21/06/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4045	06/09/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4045	31/01/2022	-																				
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4053	15/07/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4053	07/09/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4053	26/01/2022	-																				
P02 SEGL 2023	BTB4055	16/06/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4055	26/01/2022	-																				
P02 SEGL 2023	BTB4057	17/06/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4057	07/09/2021	-	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4057	27/01/2022	-																				
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2	<0.05	<0.05	<0.05	<0.05			<0.05													

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-PCB	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides													
Analyte				PCB 167	PCB 169	PCB 189	Aldrin	Alpha-Bhc	Beta-Bhc	Chlorothalonil	Alpha-Chlordane	Dieldrin	Endosulfan Sulfate	Endosulfan I	Endosulfan II	Endrin	gamma-BHC (Lindane)	2,4-DDE	2,4-DDD	2,4-DDT	4,4'-DDD	4,4'-DDE	
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				0.5	0.5	0.5		0.02	0.02	0.035						0.1	0.1						
GI Reference	Location Reference	Sample Date	Contaminative Source ID																				
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4044	21/06/2021	-																				
P02 SEGL 2023	BTB4044	13/09/2021	-																				
P02 SEGL 2023	BTB4044	31/01/2022	-																				
P02 SEGL 2023	BTB4045	21/06/2021	-																				
P02 SEGL 2023	BTB4045	06/09/2021	-																				
P02 SEGL 2023	BTB4045	31/01/2022	-																				
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1																				
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1																				
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1																				
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4053	15/07/2021	-																				
P02 SEGL 2023	BTB4053	07/09/2021	-																				
P02 SEGL 2023	BTB4053	26/01/2022	-																				
P02 SEGL 2023	BTB4055	16/06/2021	-																				
P02 SEGL 2023	BTB4055	26/01/2022	-																				
P02 SEGL 2023	BTB4057	17/06/2021	-																				
P02 SEGL 2023	BTB4057	07/09/2021	-																				
P02 SEGL 2023	BTB4057	27/01/2022	-																				
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																				
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1																				
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1																				
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																				
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2																				
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2																				
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																				
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2																				

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Pesticides			
Analyte				4,4'-DDT	Guthion (Azinphos-methyl)	Diazinon	Dichlorvos	DISULFOTON	Ethion	Fenitrothion	Fenthion	Heptachlor	Heptachlor Epoxide	Malathion	Methoxychlor	PARATHION, ETHYL	PARATHION, METHYL	Mevinphos	Pirimiphos-methyl	DIMETHOATE	Phosalone	Azinphos-ethyl
Unit				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Freshwater EQS Resource Protection Value				0.01	0.01	0.01	0.000600			0.01	0.1	0.000000200	0.000000200	0.01	0.1	0.1	0.1	0.1	0.015	0.48		
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4044	21/06/2021	-																			
P02 SEGL 2023	BTB4044	13/09/2021	-																			
P02 SEGL 2023	BTB4044	31/01/2022	-																			
P02 SEGL 2023	BTB4045	21/06/2021	-																			
P02 SEGL 2023	BTB4045	06/09/2021	-																			
P02 SEGL 2023	BTB4045	31/01/2022	-																			
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1																			
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4053	15/07/2021	-																			
P02 SEGL 2023	BTB4053	07/09/2021	-																			
P02 SEGL 2023	BTB4053	26/01/2022	-																			
P02 SEGL 2023	BTB4055	16/06/2021	-																			
P02 SEGL 2023	BTB4055	26/01/2022	-																			
P02 SEGL 2023	BTB4057	17/06/2021	-																			
P02 SEGL 2023	BTB4057	07/09/2021	-																			
P02 SEGL 2023	BTB4057	27/01/2022	-																			
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1																			
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2																			
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2																			
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2																			

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Pesticides																		
Analyte				Chlorpyrifos	Propetamphos	o,p-DDE	Etrimpfos	Pendimethalin	Isodrin	Chlorfenvinphos	o,p-DDD	Trithion	o,p-DDT	Tecnazene	Trifluralin	Triallate	Triazophos	Traidimefon	trans-Permethrin	Chlorpyrifos-methyl	Permethrin	Cypermethrin
Unit				ug/l	ug/l	ug/l																
Freshwater EQS				0.03	0.03			0.3			0.1											
Resource Protection Value				0.1						0.1				1	0.03	0.25	0.005		0.1		0.001	0.0000800
GI Reference	Location Reference	Sample Date	Contaminative Source ID																			
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4044	21/06/2021	-																			
P02 SEGL 2023	BTB4044	13/09/2021	-																			
P02 SEGL 2023	BTB4044	31/01/2022	-																			
P02 SEGL 2023	BTB4045	21/06/2021	-																			
P02 SEGL 2023	BTB4045	06/09/2021	-																			
P02 SEGL 2023	BTB4045	31/01/2022	-																			
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1																			
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4053	15/07/2021	-																			
P02 SEGL 2023	BTB4053	07/09/2021	-																			
P02 SEGL 2023	BTB4053	26/01/2022	-																			
P02 SEGL 2023	BTB4055	16/06/2021	-																			
P02 SEGL 2023	BTB4055	26/01/2022	-																			
P02 SEGL 2023	BTB4057	17/06/2021	-																			
P02 SEGL 2023	BTB4057	07/09/2021	-																			
P02 SEGL 2023	BTB4057	27/01/2022	-																			
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2																			
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1																			
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1																			
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1																			
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2																			
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2																			
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2																			
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2																			

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
 Table A13.1.13: Assessment of Risks to Groundwater and Surface Waters - Groundwater

Analyte Group				UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides
Analyte				Deltamethrin	ALDRIN+DIELDRIN	Atrazine	Prometryne	Propazine	Simazine	Terbutryn	Pentachloronitrobenzene	Alachlor	Propachlor
Unit				ug/l	ug/l	ug/l							
Freshwater EQS Resource Protection Value					0.03	0.6	0.1		1	0.065		0.3	0.1
GI Reference	Location Reference	Sample Date	Contaminative Source ID										
P02 Fugro 2016-A	BH17440	04/07/2016	-										
P02 Fugro 2016-A	BH17440	24/08/2016	-										
P02 Fugro 2016-A	BH17440	01/12/2016	-										
P02 Fugro 2016-A	BH18100	11/08/2016	PBTC-C2, PBTC-C22										
P02 Fugro 2016-A	BH18100	08/11/2016	PBTC-C2, PBTC-C22										
P02 Fugro 2016-A	BH18500	17/05/2016	PBTC-C2										
P02 Fugro 2016-A	BH18500	04/08/2016	PBTC-C2										
P02 Fugro 2016-A	BH18500	08/11/2016	PBTC-C2										
P03 Fugro 2016-B	BH21550	17/05/2016	PBTC-C1, PBTC-C2										
P03 Fugro 2016-B	BH21550	04/08/2016	PBTC-C1, PBTC-C2										
P03 Fugro 2016-B	BH21550	08/11/2016	PBTC-C1, PBTC-C2										
P03 Fugro 2016-B	BH21550	22/02/2017	PBTC-C1, PBTC-C2										
P03 Fugro 2016-B	BH22260	17/05/2016	PBTC-C1										
P03 Fugro 2016-B	BH22260	05/08/2016	PBTC-C1										
P03 Fugro 2016-B	BH22260	15/11/2016	PBTC-C1										
P03 Fugro 2016-B	BH22260	22/02/2017	PBTC-C1										
P03 Fugro 2016-B	BH23200D	10/08/2016	-										
P03 Fugro 2016-B	BH23200D	06/04/2017	-										
P03 Fugro 2016-B	BH23200S	06/04/2017	-										
P03 Fugro 2016-B	BH23200S	10/08/2016	-										
P02 SEGL 2015	BHBT001	17/07/2014	PBTC-C1										
P02 SEGL 2015	BHBT010	17/07/2014	PBTC-C30										
P02 SEGL 2015	BHBT045	06/08/2014	-										
P02 SEGL 2015	BHBT059A	10/02/2015	PBTC-C1										
P02 SEGL 2015	BHBT061	09/12/2014	PBTC-C2	<0.5	<0.02	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT090	18/12/2014	PBTC-C2	<0.1	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT091B	18/12/2014	PBTC-C1, PBTC-C2	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT094	18/12/2014	PBTC-C1, PBTC-C2	<0.1	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT098A	18/12/2014	PBTC-C22	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT100	13/12/2014	PBTC-C22	<0.5	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT103	10/12/2014	PBTC-C2, PBTC-C22										
P02 SEGL 2015	BHBT105	28/01/2015	PBTC-C1	<0.1	<0.02	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107
P02 SEGL 2015	BHBT106	09/02/2015	PBTC-C1	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT109A	10/12/2014	-	<0.5	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT114	11/12/2014	PBTC-C2, PBTC-C22	<0.5	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT115	09/02/2015	PBTC-C1	<0.1	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT116	09/02/2015	PBTC-C1	<0.1	<0.02	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123	<0.0123
P02 SEGL 2015	BHBT120	09/12/2014	PBTC-C2	<0.5	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT122	30/01/2015	-	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT124	28/01/2015	-	<0.1	<0.02	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0114
P02 SEGL 2015	BHBT129	03/12/2014	PBTC-C33										
P02 SEGL 2015	BHBT135	09/12/2014	PBTC-C1	<0.5	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT138	10/02/2015	PBTC-C49	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT139A	09/12/2014	PBTC-C49	<0.5	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT141	17/12/2014	PBTC-C1	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT144	17/07/2014	PBTC-C1										
P02 SEGL 2015	BHBT155	31/07/2014	-	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT157A	27/08/2014	-										
P02 SEGL 2015	BHBT169	08/01/2015	PBTC-C1	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT177	08/01/2015	-	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2015	BHBT179	10/02/2015	PBTC-C1	<0.1	<0.02	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107	<0.0107
P02 SEGL 2015	BHBT189-1	27/08/2014	-										
P02 SEGL 2015	BHBT202-1	11/12/2014	PBTC-C2	<0.5	<0.02						<0.01		
P02 SEGL 2015	BHBT204	27/08/2014	-										
P02 SEGL 2015	BHBT207	09/12/2014	-	<0.5	<0.02						<0.01		
P02 SEGL 2015	BHBT209A	22/08/2014	-										
P02 SEGL 2015	BHBT216	22/08/2014	-										
P02 SEGL 2015	BHBT217	09/12/2014	PBTC-C2	<0.5	<0.02						<0.01		
P02 SEGL 2015	BHBT219	09/12/2014	PBTC-C1	<0.5	<0.02						<0.01		
P02 SEGL 2015	BHBT223A	30/01/2015	PBTC-C1	<0.1	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P02 SEGL 2023	BTB4001	15/06/2021	-										
P02 SEGL 2023	BTB4001	14/09/2021	-										
P02 SEGL 2023	BTB4001	25/01/2022	-										
P02 SEGL 2023	BTB4002	15/07/2021	PBTC-C1										
P02 SEGL 2023	BTB4002	14/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4002	25/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4008	16/06/2021	PBTC-C1, PBTC-C11										
P02 SEGL 2023	BTB4008	25/01/2022	PBTC-C1, PBTC-C11										
P02 SEGL 2023	BTB4014	17/06/2021	PBTC-C1										
P02 SEGL 2023	BTB4014	13/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4014	25/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4016	25/01/2022	-										
P02 SEGL 2023	BTB4025	13/07/2021	PBTC-C18										
P02 SEGL 2023	BTB4025	15/09/2021	PBTC-C18										
P02 SEGL 2023	BTB4025	26/01/2022	PBTC-C18										
P02 SEGL 2023	BTB4027	25/01/2022	PBTC-C2, PBTC-C22										
P02 SEGL 2023	BTB4028	31/01/2022	PBTC-C22										
P02 SEGL 2023	BTB4029	17/06/2021	PBTC-C22										
P02 SEGL 2023	BTB4029	08/09/2021	PBTC-C22										
P02 SEGL 2023	BTB4029	31/01/2022	PBTC-C22										
P02 SEGL 2023	BTB4032	14/07/2021	PBTC-C2										
P02 SEGL 2023	BTB4032	14/09/2021	PBTC-C2										
P02 SEGL 2023	BTB4032	31/01/2022	PBTC-C2										
P02 SEGL 2023	BTB4038	16/06/2021	-										
P02 SEGL 2023	BTB4038	13/09/2021	-										
P02 SEGL 2023	BTB4038	31/01/2022	-										
P02 SEGL 2023	BTB4039	16/06/2021	PBTC-C1										
P02 SEGL 2023	BTB4039	13/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4039	31/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4042	14/07/2021	PBTC-C1, PBTC-C2										

A9 Dualling: Pass of Birnam to Tay Crossing
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Analyte Group				UK&I-RA-Pesticides	UK&I-RA-Pesticides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	UK&I-RA-Herbicides	
Analyte				Deltamethrin	ALDRIN+DIELDRIN	Atrazine	Prometryne	Propazine	Simazine	Terbutryn	Pentachloronitrobenzene	Alachlor	Propachlor
Unit				ug/l	ug/l	ug/l							
Freshwater EQS Resource Protection Value					0.03	0.6	0.1		1	0.065		0.3	0.1
GI Reference	Location Reference	Sample Date	Contaminative Source ID										
P02 SEGL 2023	BTB4042	14/09/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4042	27/01/2022	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4043	14/07/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4043	14/09/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4043	27/01/2022	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4044	21/06/2021	-										
P02 SEGL 2023	BTB4044	13/09/2021	-										
P02 SEGL 2023	BTB4044	31/01/2022	-										
P02 SEGL 2023	BTB4045	21/06/2021	-										
P02 SEGL 2023	BTB4045	06/09/2021	-										
P02 SEGL 2023	BTB4045	31/01/2022	-										
P02 SEGL 2023	BTB4050	16/06/2021	PBTC-C1										
P02 SEGL 2023	BTB4050	06/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4050	26/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4052	06/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4052	26/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4053	15/07/2021	-										
P02 SEGL 2023	BTB4053	07/09/2021	-										
P02 SEGL 2023	BTB4053	26/01/2022	-										
P02 SEGL 2023	BTB4055	16/06/2021	-										
P02 SEGL 2023	BTB4055	26/01/2022	-										
P02 SEGL 2023	BTB4057	17/06/2021	-										
P02 SEGL 2023	BTB4057	07/09/2021	-										
P02 SEGL 2023	BTB4057	27/01/2022	-										
P02 SEGL 2023	BTB4061B	07/09/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4061B	31/01/2022	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4063	17/06/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4063	07/09/2021	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4063	27/01/2022	PBTC-C1, PBTC-C2										
P02 SEGL 2023	BTB4065	17/06/2021	PBTC-C1										
P02 SEGL 2023	BTB4065	13/09/2021	PBTC-C1										
P02 SEGL 2023	BTB4065	31/01/2022	PBTC-C1										
P02 SEGL 2023	BTB4066	27/01/2022	PBTC-C2										
P02 SEGL 2023	BTB4068	21/06/2021	PBTC-C2										
P02 SEGL 2023	BTB4068	08/09/2021	PBTC-C2										
P02 SEGL 2023	BTB4068	27/01/2022	PBTC-C2										
P02 SEGL 2023	BTB4069	27/01/2022	PBTC-C1, PBTC-C2										

XX	Exceedance of Freshwater EQS value
XX	Exceedance of RPV value

A9 Dualling: Pass of Birnam to Tay Crossing
Table A13.1.14: Ground Gas Data Assessment

Investigation Phase	Location Reference	Number of monitoring rounds	Number of times flooded	Contamination Source	Atmospheric Pressure		Peak Methane (CH4)				Steady Methane (CH4)				Steady Carbon Dioxide (CO2)			
					Min	Max	Min	Max	safety threshold 20% LEL	safety threshold 100% LEL (explosive range)	Min	Max	safety threshold 20% LEL	safety threshold 100% LEL (explosive range)	Min	Max	Long term	Short term
					mbar	mbar	%v/v	%v/v	> 1%	>5%	%v/v	%v/v	> 1%	>5%	%v/v	%v/v	> 0.5%	> 1.5%
P02 Fugro 2016-A	BH16650	13	0	PBTC-C1	978	1606	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1	2	0
P02 Fugro 2016-A	BH17440	13	0	-	978	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	2	10	3
P02 Fugro 2016-A	BH17600	12	8	-	978	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	0.6	4.3	12	11
P02 Fugro 2016-A	BH18100	12	0	PBTC-C2, PBTC-C22	989	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.1	0	0
P02 Fugro 2016-A	BH18500	12	0	PBTC-C2	987	1022	<0.1	<0.1	0	0	<0.1	0.1	0	0	<0.1	1.7	1	1
P02 Fugro 2016-A	BH18720	17	0	PBTC-C1	978	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	0.1	3.6	11	6
P02 SEGL 2015	BHBT001	24	0	PBTC-C1	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	4.1	20	16
P02 SEGL 2015	BHBT010	24	0	-	984	1028	<0.1	0.3	0	0	<0.1	<0.1	0	0	<0.1	1.2	8	0
P02 SEGL 2015	BHBT017	27	0	-	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	1	17	0
P02 SEGL 2015	BHBT020B	26	0	-	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.8	10	0
P02 SEGL 2015	BHBT021A	19	0	-	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.7	7	0
P02 SEGL 2015	BHBT022	19	0	PBTC-C1	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.6	2	0
P02 SEGL 2015	BHBT023	24	0	-	984	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	2	0
P02 SEGL 2015	BHBT025	23	0	-	984	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.9	6	0
P02 SEGL 2015	BHBT026	24	0	-	984	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	1	0
P02 SEGL 2015	BHBT034	24	0	-	984	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	3.6	6	1
P02 SEGL 2015	BHBT038	14	0	PBTC-C2	984	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.5	0	0
P02 SEGL 2015	BHBT041	8	0	PBTC-C1	985	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.9	4	0
P02 SEGL 2015	BHBT043A	8	0	-	984	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	2.8	6	1
P02 SEGL 2015	BHBT045	21	0	-	985	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	4.9	17	16
P02 SEGL 2015	BHBT049	9	0	-	984	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.6	3	0
P02 SEGL 2015	BHBT050	10	0	-	984	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.9	3	0
P02 SEGL 2015	BHBT052	8	0	-	984	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.5	0	0
P02 SEGL 2015	BHBT059A	3	0	PBTC-C1	998	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.5	0	0
P02 SEGL 2015	BHBT061	16	0	PBTC-C2	988	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.7	3	0
P02 SEGL 2015	BHBT067	14	0	-	988	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.7	2	0
P02 SEGL 2015	BHBT074	2	0	PBTC-C1, PBTC-C2	998	1001	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT083	4	0	PBTC-C1, PBTC-C2	997	1001	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.8	1	0
P02 SEGL 2015	BHBT087	11	0	PBTC-C1, PBTC-C2	985	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	2.2	5	5
P02 SEGL 2015	BHBT090	4	0	PBTC-C2	998	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.4	0	0
P02 SEGL 2015	BHBT091B	11	0	PBTC-C1, PBTC-C2	985	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.3	0.9	2	0
P02 SEGL 2015	BHBT094	5	0	PBTC-C1, PBTC-C2	990	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	0.5	0	0
P02 SEGL 2015	BHBT098A	4	0	PBTC-C22	998	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.8	1.1	4	0
P02 SEGL 2015	BHBT100	8	0	PBTC-C22	995	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.9	3	0
P02 SEGL 2015	BHBT103	20	0	PBTC-C2, PBTC-C22	987	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	5.4	10	6
P02 SEGL 2015	BHBT105	3	0	PBTC-C1	998	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.5	0	0
P02 SEGL 2015	BHBT106	1	0	PBTC-C1	1029	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT109A	8	0	-	995	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	1.3	7	0
P02 SEGL 2015	BHBT114	18	18	PBTC-C2, PBTC-C22	991	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	1	6	0
P02 SEGL 2015	BHBT115	1	0	PBTC-C1	1029	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT116	1	0	PBTC-C1	1029	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.4	0	0
P02 SEGL 2015	BHBT120	14	0	PBTC-C2	990	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.9	3	0
P02 SEGL 2015	BHBT122	1	0	-	1030	1030	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.6	0.6	1	0
P02 SEGL 2015	BHBT124	3	0	-	1004	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	1.1	1.6	3	2
P02 SEGL 2015	BHBT129	14	0	PBTC-C33	988	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	2.1	8	2
P02 SEGL 2015	BHBT135	20	0	PBTC-C1	993	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	1.3	4.6	20	18
P02 SEGL 2015	BHBT138	1	0	PBTC-C49	1029	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	0.4	0	0
P02 SEGL 2015	BHBT139A	15	0	PBTC-C49	988	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.6	1	0
P02 SEGL 2015	BHBT141	9	0	PBTC-C1	988	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	1	3	0
P02 SEGL 2015	BHBT144	25	0	PBTC-C1	987	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	2.4	23	12
P02 SEGL 2015	BHBT153	19	0	-	990	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	3.1	6	2
P02 SEGL 2015	BHBT155A	20	0	-	993	1027	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	3.5	12	4
P02 SEGL 2015	BHBT157A	22	0	-	992	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	2.4	19	3
P02 SEGL 2015	BHBT158	26	0	PBTC-C1	991	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.7	6	0
P02 SEGL 2015	BHBT169	4	0	PBTC-C1	994	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT177	4	0	-	994	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT179	1	0	PBTC-C1	1026	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.5	0.5	0	0
P02 SEGL 2015	BHBT182	10	0	-	984	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1.1	6	0
P02 SEGL 2015	BHBT185	19	0	-	992	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.8	4	0
P02 SEGL 2015	BHBT189-1	23	0	-	992	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	2	0
P02 SEGL 2015	BHBT190	20	0	-	992	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1.5	5	0
P02 SEGL 2015	BHBT196	20	0	-	992	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	1.1	9	0
P02 SEGL 2015	BHBT202-1	18	0	PBTC-C2	985	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	2.4	12	6
P02 SEGL 2015	BHBT204	19	0	-	992	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	2.4	4	1
P02 SEGL 2015	BHBT207	20	0	-	984	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	2.6	16	7
P02 SEGL 2015	BHBT209A	18	0	-	994	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	1.2	2	0
P02 SEGL 2015	BHBT216	18	0	-	984	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	2.5	1	1
P02 SEGL 2015	BHBT217	15	0	PBTC-C2	984	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	2	11	2
P02 SEGL 2015	BHBT219	16	0	PBTC-C1	993	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	2.4	14	5
P02 SEGL 2015	BHBT223A	4	0	PBTC-C1	993	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.4	3.3	2	2
P02 SEGL 2019	BTB1004	12	0	PBTC-C1	976	1026	<0.1	0.3	0	0	<0.1	0.3	0	0	<0.1	1.4	4	0
P02 SEGL 2019	BTB1005A	12	12	PBTC-C1	976	1027	<0.1	0.3	0	0	<0.1	0.3	0	0	0.1	2.1	8	4
P02 SEGL 2019	BTB1006	12	0	-	976	1026	<0.1	0.2	0	0	<0.1	0.2	0	0	0.1	1.5	8	0
P02 SEGL 2019	BTB1007	12	0	PBTC-C1	980	1026	<0.1	0.2	0	0	<0.1	0.2	0	0	0.1	1	6	0
P02 SEGL 2023	BTB4000	12	0	-	986	1024	<0.1	0.2	0	0	<0.1	0						

A9 Dualling: Pass of Birnam to Tay Crossing
Table A13.1.14: Ground Gas Data Assessment

Investigation Phase	Location Reference	Number of monitoring rounds	Number of times flooded	Contamination Source	Atmospheric Pressure		Peak Methane (CH4)				Steady Methane (CH4)				Steady Carbon Dioxide (CO2)			
					Min	Max	Min	Max	safety threshold 20% LEL	safety threshold 100% LEL (explosive range)	Min	Max	safety threshold 20% LEL	safety threshold 100% LEL (explosive range)	Min	Max	Long term	Short term
					mbar	mbar	%v/v	%v/v	> 1%	>5%	%v/v	%v/v	> 1%	>5%	%v/v	%v/v	> 0.5%	> 1.5%
P02 SEGL 2023	BTB4006A	12	0	PBTC-C2	984	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.3	1.7	9	2
P02 SEGL 2023	BTB4007A	12	0	PBTC-C11	985	1025	<0.1	0.1	0	0	<0.1	<0.1	0	0	0.5	3.1	11	7
P02 SEGL 2023	BTB4008	12	0	PBTC-C1, PBTC-C11	986	1026	<0.1	0.3	0	0	<0.1	0.1	0	0	<0.1	3.6	6	5
P02 SEGL 2023	BTB4009	12	0	PBTC-C2	984	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.3	0.5	0	0
P02 SEGL 2023	BTB4010	12	0	PBTC-C1	984	1023	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	1.1	7	0
P02 SEGL 2023	BTB4012	12	0	-	993	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.3	0	0
P02 SEGL 2023	BTB4013	12	0	-	984	1023	<0.1	<0.1	0	0	<0.01	<0.1	0	0	<0.1	0.4	0	0
P02 SEGL 2023	BTB4014	12	0	PBTC-C1	984	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.1	0	0
P02 SEGL 2023	BTB4016	12	0	-	984	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.4	0	0
P02 SEGL 2023	BTB4017	9	0	PBTC-C1	985	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	1.5	8	0
P02 SEGL 2023	BTB4018	12	0	-	984	1024	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1.4	10	0
P02 SEGL 2023	BTB4020	12	0	-	984	1023	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	1	0
P02 SEGL 2023	BTB4022	12	0	PBTC-C1	983	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	2.4	10	10
P02 SEGL 2023	BTB4023	12	0	PBTC-C1, PBTC-C2	983	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	2.5	5	3
P02 SEGL 2023	BTB4024	12	0	PBTC-C1	983	1022	<0.1	0.1	0	0	<0.1	<0.1	0	0	0.1	2.3	11	8
P02 SEGL 2023	BTB4025	11	4	PBTC-C18	983	1026	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	4.1	10	10
P02 SEGL 2023	BTB4026A	7	7	PBTC-C1, PBTC-C2	983	1022	<0.1	0.1	0	0	<0.1	<0.1	0	0	<0.1	0.1	0	0
P02 SEGL 2023	BTB4027	12	4	PBTC-C2, PBTC-C22	983	1022	<0.1	0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	1	0
P02 SEGL 2023	BTB4028	12	12	PBTC-C22	992	1025	<0.1	0.1	0	0	<0.1	<0.1	0	0	0.1	6.6	10	9
P02 SEGL 2023	BTB4029	12	2	PBTC-C22	992	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	3.6	10.9	12	12
P02 SEGL 2023	BTB4031	12	0	-	993	1025	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	1.2	3	0
P02 SEGL 2023	BTB4032	12	0	PBTC-C2	983	1027	<0.1	0.1	0	0	<0.1	<0.1	0	0	0.1	2.5	11	7
P02 SEGL 2023	BTB4035	12	0	PBTC-C49	983	1029	<0.1	0.4	0	0	<0.1	0.4	0	0	<0.1	4.2	7	5
P02 SEGL 2023	BTB4036A	12	12	PBTC-C1	988	1029	<0.1	0.1	0	0	<0.1	0.1	0	0	0.1	2.8	10	6
P02 SEGL 2023	BTB4037	11	11	-	994	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.5	0	0
P02 SEGL 2023	BTB4038	12	12	-	988	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	1.4	9	0
P02 SEGL 2023	BTB4039	12	0	PBTC-C1	993	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.3	4.8	10	9
P02 SEGL 2023	BTB4042	12	0	PBTC-C1, PBTC-C2	989	1027	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	2.5	5	3
P02 SEGL 2023	BTB4043	12	0	PBTC-C1, PBTC-C2	988	1028	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.8	5	0
P02 SEGL 2023	BTB4044	12	12	-	988	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.9	1	0
P02 SEGL 2023	BTB4045	12	5	-	988	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.2	0	0
P02 SEGL 2023	BTB4046	12	0	-	988	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1	4	0
P02 SEGL 2023	BTB4047	12	0	-	983	1024	<0.1	0.1	0	0	<0.1	0.1	0	0	0.2	4.1	10	7
P02 SEGL 2023	BTB4048	12	0	PBTC-C1	988	1021	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.7	6	0
P02 SEGL 2023	BTB4049	12	0	-	983	1025	<0.1	0.1	0	0	<0.1	<0.1	0	0	<0.1	0.2	0	0
P02 SEGL 2023	BTB4050	12	12	PBTC-C1	977	1021	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.2	0	0
P02 SEGL 2023	BTB4052	11	8	PBTC-C1	998	1021	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.2	1.5	6	0
P02 SEGL 2023	BTB4053	12	0	-	986	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	1.2	2	12	5
P02 SEGL 2023	BTB4054	12	11	-	986	1022	<0.1	0.1	0	0	<0.1	<0.1	0	0	<0.1	2.5	3	1
P02 SEGL 2023	BTB4055	12	0	-	986	1022	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	1.6	5	1
P02 SEGL 2023	BTB4057	12	12	-	986	1022	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.6	1	0
P02 SEGL 2023	BTB4061B	12	12	PBTC-C1, PBTC-C2	986	1036	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.4	0	0
P02 SEGL 2023	BTB4062	12	12	PBTC-C1, PBTC-C2	986	1035	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	1	5	0
P02 SEGL 2023	BTB4063	12	12	PBTC-C1, PBTC-C2	986	1035	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.3	0	0
P02 SEGL 2023	BTB4065	12	12	PBTC-C1	998	1035	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.6	1	0
P02 SEGL 2023	BTB4066	12	0	PBTC-C2	989	1029	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	2.2	3	1
P02 SEGL 2023	BTB4067	12	1	-	986	1021	<0.1	0.1	0	0	<0.1	<0.1	0	0	<0.1	1.4	7	0
P02 SEGL 2023	BTB4068	12	12	PBTC-C2	989	1029	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.5	0	0
P02 SEGL 2023	BTB4069	12	0	PBTC-C1, PBTC-C2	983	1028	<0.1	0.2	0	0	<0.1	0.1	0	0	0.1	2.6	11	10
P03 Fugro 2016-B	BH21550	11	0	PBTC-C1, PBTC-C2	993	1019	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.2	0	0
P03 Fugro 2016-B	BH21900B	18	0	PBTC-C1	944	1020	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	2.8	6	6
P03 Fugro 2016-B	BH22260	18	0	PBTC-C1	988	1020	<0.1	0.2	0	0	<0.1	0.1	0	0	1	5.3	18	14
P03 Fugro 2016-B	BH22900	13	0	-	987	1018	<0.1	0.2	0	0	<0.1	0.2	0	0	<0.1	0.8	1	0
P03 Fugro 2019	BTB2001	14	0	PBTC-C1	990	1019	<0.1	0.1	0	0	<0.1	0.1	0	0	0.4	4.3	9	3
P03 Fugro 2019	BTB2002	14	0	PBTC-C1	990	1019	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.5	0	0
P03 Fugro 2019	BTB2003	14	0	PBTC-C1	990	1019	<0.1	0.1	0	0	<0.1	0.1	0	0	0.1	0.8	6	0
P03 Fugro 2019	BTB2004	8	0	-	990	1010	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.5	1	0
P03 Fugro 2019	BTB2006	12	0	-	990	1019	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.7	3	0
P03 Fugro 2019	TBB2001	13	0	PBTC-C1	990	1010	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.4	0	0
P03 Fugro 2019	TBB2003A	12	0	-	990	1010	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.8	4	0
P03 Fugro 2019	TBB2004	13	0	PBTC-C1	990	1010	<0.1	<0.1	0	0	<0.1	<0.1	0	0	<0.1	0.6	1	0
P03 Fugro 2019	TBB2006	12	0	-	990	1010	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.6	1	0
P03 Fugro 2019	TBB2008	13	0	-	990	1010	<0.1	0.1	0	0	<0.1	0.1	0	0	<0.1	0.6	3	0
P03 Fugro 2019	TBB2009	11	0	-	990	1010	<0.1	<0.1	0	0	<0.1	<0.1	0	0	0.1	0.8	2	0

x	Exceeds Safety Threshold 20% LEL and/or Safety threshold 100% LEL for Methane
x	Exceeds Long Term GAC and/or Short Term GAC for Carbon dioxide
x	Below Depleted Value and/or Mining Act Value for Oxygen
x	Exceeds Long Term GAC and/or Short Term GAC for Hydrogen sulphide
x	Exceeds Long Term GAC and/or Short Term GAC for Carbon monoxide

A9 Dualling: Pass of Birnam to Tay Crossing
Table A13.1.14: Ground Gas Data Assessment

Investigation Phase	Location Reference	Number of monitoring rounds	Number of times flooded	Contamination Source	Steady Oxygen (O2)				Steady Hydrogen Sulphide (H2S)				Steady Carbon Monoxide (CO)				Flow Rate	
					Min	Max	Depleted O2	Mining Act	Min	Max	long term	short term	Min	Max	long term	short term	Min	Max (peak)
					%v/v	%v/v	< 16%	<19%	ppm	ppm	>5	>10	ppm	ppm	>20	>100		
P02 Fugro 2016-A	BH16650	13	0	PBTC-C1	19.3	21.5	0	0	<1	<1	0	0	<1	<1	0	0	0	0.1
P02 Fugro 2016-A	BH17440	13	0	-	19.2	20.6	0	0	<1	<1	0	0	<1	4	0	0	0.1	0.1
P02 Fugro 2016-A	BH17600	12	8	-	8.8	15	11	11	<1	<1	0	0	<1	8	0	0	1.41	4.2
P02 Fugro 2016-A	BH18100	12	0	PBTC-C2, PBTC-C22	20.1	21.4	0	0	<1	<1	0	0	<1	<1	0	0	0	(-)0.1
P02 Fugro 2016-A	BH18500	12	0	PBTC-C2	19.6	20.9	0	0	<1	<1	0	0	<1	1	0	0	0	0.2
P02 Fugro 2016-A	BH18720	17	0	PBTC-C1	17	20.6	0	4	<1	<1	0	0	<1	<1	0	0	0	0.1
P02 SEGL 2015	BHBT001	24	0	PBTC-C1	18.1	21.9	0	8	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT010	24	0	-	19.9	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0	0.4
P02 SEGL 2015	BHBT017	27	0	-	19.9	22.8	0	0	<1	<1	0	0	<1	<1	0	0	0	0.3
P02 SEGL 2015	BHBT020B	26	0	-	19.5	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT021A	19	0	-	20.2	21.6	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT022	19	0	PBTC-C1	20.7	21.7	0	0	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT023	24	0	-	20.7	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.9
P02 SEGL 2015	BHBT025	23	0	-	20.4	22	0	0	<1	<1	0	0	<1	<1	0	0	0	0.4
P02 SEGL 2015	BHBT026	24	0	-	20.4	21.8	0	0	<1	<1	0	0	<1	<1	0	0	0	0.4
P02 SEGL 2015	BHBT034	24	0	-	17.4	21.8	0	1	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT038	14	0	PBTC-C2	20.2	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT041	8	0	PBTC-C1	20.2	22.3	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.9
P02 SEGL 2015	BHBT043A	8	0	-	18.7	21.1	0	1	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT045	21	0	-	16.9	22.4	0	15	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT049	9	0	-	20	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT050	10	0	-	20.3	22.2	0	0	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT052	8	0	-	21.2	22.2	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT059A	3	0	PBTC-C1	19.6	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.601
P02 SEGL 2015	BHBT061	16	0	PBTC-C2	20	22	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT067	14	0	-	20.2	22.2	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT074	2	0	PBTC-C1, PBTC-C2	21.5	21.5	0	0	<1	<1	0	0	<1	<1	0	0	0.4	0.5
P02 SEGL 2015	BHBT083	4	0	PBTC-C1, PBTC-C2	18	20.5	0	1	<1	<1	0	0	<1	<1	0	0	0.1	0.4
P02 SEGL 2015	BHBT087	11	0	PBTC-C1, PBTC-C2	18.6	22.4	0	3	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT090	4	0	PBTC-C2	21.8	22.5	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.4
P02 SEGL 2015	BHBT091B	11	0	PBTC-C1, PBTC-C2	20	22.7	0	0	<1	<1	0	0	<1	57	4	0	0	0.698
P02 SEGL 2015	BHBT094	5	0	PBTC-C1, PBTC-C2	18.9	22.5	0	1	<1	<1	0	0	<1	<1	0	0	0.1	0.698
P02 SEGL 2015	BHBT098A	4	0	PBTC-C22	19.6	20.6	0	0	<1	<1	0	0	<1	<1	0	0	0.2	0.698
P02 SEGL 2015	BHBT100	8	0	PBTC-C22	19.6	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT103	20	0	PBTC-C2, PBTC-C22	14.8	22.4	3	6	<1	<1	0	0	<1	3	0	0	0	0.799
P02 SEGL 2015	BHBT105	3	0	PBTC-C1	21.6	21.8	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.9
P02 SEGL 2015	BHBT106	1	0	PBTC-C1	21.6	21.6	0	0	<1	<1	0	0	<1	<1	0	0	0.5	0.5
P02 SEGL 2015	BHBT109A	8	0	-	19.5	20.7	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT114	18	18	PBTC-C2, PBTC-C22	19.4	21.9	0	0	<1	<1	0	0	<1	2	0	0	0	0.799
P02 SEGL 2015	BHBT115	1	0	PBTC-C1	21.5	21.5	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.1
P02 SEGL 2015	BHBT116	1	0	PBTC-C1	21.6	21.6	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.1
P02 SEGL 2015	BHBT120	14	0	PBTC-C2	19	22.1	0	0	<1	<1	0	0	<1	1	0	0	0	0.4
P02 SEGL 2015	BHBT122	1	0	-	21.2	21.2	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.1
P02 SEGL 2015	BHBT124	3	0	-	18.5	20	0	1	<1	<1	0	0	<1	<1	0	0	0.2	0.4
P02 SEGL 2015	BHBT129	14	0	PBTC-C33	19	22	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.601
P02 SEGL 2015	BHBT135	20	0	PBTC-C1	16.7	20	0	16	<1	<1	0	0	<1	3	0	0	0.1	0.799
P02 SEGL 2015	BHBT138	1	0	PBTC-C49	21.6	21.6	0	0	<1	<1	0	0	<1	<1	0	0	0.601	0.601
P02 SEGL 2015	BHBT139A	15	0	PBTC-C49	20.4	22	0	0	<1	<1	0	0	<1	<1	0	0	0	0.698
P02 SEGL 2015	BHBT141	9	0	PBTC-C1	19.7	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0	0.9
P02 SEGL 2015	BHBT144	25	0	PBTC-C1	17.7	21.7	0	5	<1	<1	0	0	<1	2	0	0	0	0.9
P02 SEGL 2015	BHBT153	19	0	-	17.7	21.8	0	1	<1	<1	0	0	<1	2	0	0	0	0.799
P02 SEGL 2015	BHBT155A	20	0	-	18.3	21.7	0	2	<1	<1	0	0	<1	2	0	0	0	1
P02 SEGL 2015	BHBT157A	22	0	-	18.8	21.7	0	2	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT158	26	0	PBTC-C1	20.2	21.5	0	0	<1	<1	0	0	<1	<1	0	0	0	0.9
P02 SEGL 2015	BHBT169	4	0	PBTC-C1	21.6	21.8	0	0	<1	<1	0	0	<1	<1	0	0	0.4	0.799
P02 SEGL 2015	BHBT177	4	0	-	21.7	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0.2	0.799
P02 SEGL 2015	BHBT179	1	0	PBTC-C1	20.4	20.4	0	0	<1	<1	0	0	91	91	1	0	0.4	0.4
P02 SEGL 2015	BHBT182	10	0	-	20.4	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0	0.698
P02 SEGL 2015	BHBT185	19	0	-	20.1	22.2	0	0	<1	<1	0	0	<1	1	0	0	0	0.601
P02 SEGL 2015	BHBT189-1	23	0	-	20.1	21.8	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT190	20	0	-	19.9	22.2	0	0	<1	<1	0	0	<1	<1	0	0	0	0.601
P02 SEGL 2015	BHBT196	20	0	-	19.9	22.3	0	0	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT202-1	18	0	PBTC-C2	18.1	21.8	0	3	<1	<1	0	0	<1	<1	0	0	0	0.698
P02 SEGL 2015	BHBT204	19	0	-	19.4	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT207	20	0	-	15.2	22.2	1	9	<1	<1	0	0	<1	<1	0	0	0	0.4
P02 SEGL 2015	BHBT209A	18	0	-	20.3	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.799
P02 SEGL 2015	BHBT216	18	0	-	20.1	22.4	0	0	<1	<1	0	0	<1	<1	0	0	0	0.5
P02 SEGL 2015	BHBT217	15	0	PBTC-C2	19.3	22.1	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.799
P02 SEGL 2015	BHBT219	16	0	PBTC-C1	19.3	21.3	0	0	<1	<1	0	0	<1	<1	0	0	0	0.698
P02 SEGL 2015	BHBT223A	4	0	PBTC-C1	20.3	22.3	0	0	<1	<1	0	0	<1	<1	0	0	0.601	0.9
P02 SEGL 2019	BTB1004	12	0	PBTC-C1	20.4	22.5	0	0	<1	<1	0	0	<1	1	0	0	0.1	0.5
P02 SEGL 2019	BTB1005A	12	12	PBTC-C1	15.4	21.1	1	2	<1	<1	0	0	<1	4	0	0	0	5.3
P02 SEGL 2019	BTB1006	12	0	-	19.9	21.7	0	0	<1	<1	0	0	<1	<1	0	0	0	0.7
P02 SEGL 2019	BTB1007	12	0	PBTC-C1	20	22.3	0	0	<1	<1	0	0	<1	4	0	0	0	0.4
P02 SEGL 2023	BTB4000	12	0	-	20.1	21.7	0	0	<1	<1	0	0	<1	1	0	0	0.1	0.4
P02 SEGL 2023	BTB4001	12	0	-	19.9	22	0	0	<1	<1	0	0	<1	1	0	0	0	2
P02 SEGL 2023	BTB4002	12	0	PBTC-C1	18.5	21.7	0	3	<1	<1	0	0	<1	2	0	0	0	0.3
P02 SEGL 2023	BTB4003	12	0	PBTC-C1	18.2	20.4	0	3	<1	<1	0	0	<1	1	0	0	0	0.3
P02 SEGL 2023	BTB4004	12	0	PBTC-C1	18.8	21.2	0	1	<1	<1	0	0	<1	2	0	0	0.1	0.4
P02 SEGL 2023	BTB4005	12																

A9 Dualling: Pass of Birnam to Tay Crossing
Table A13.1.14: Ground Gas Data Assessment

Investigation Phase	Location Reference	Number of monitoring rounds	Number of times flooded	Contamination Source	Steady Oxygen (O2)				Steady Hydrogen Sulphide (H2S)				Steady Carbon Monoxide (CO)				Flow Rate	
					Min	Max	Depleted O2	Mining Act	Min	Max	long term	short term	Min	Max	long term	short term	Min	Max (peak)
					%v/v	%v/v	< 16%	<19%	ppm	ppm	>5	>10	ppm	ppm	>20	>100		
P02 SEGL 2023	BTB4006A	12	0	PBTC-C2	17.5	21.6	0	5	<1	2	0	0	<1	1	0	0	0	0.3
P02 SEGL 2023	BTB4007A	12	0	PBTC-C11	18.4	21.2	0	2	<1	<1	0	0	<1	<1	0	0	0	0.6
P02 SEGL 2023	BTB4008	12	0	PBTC-C1, PBTC-C11	17.1	22.1	0	5	<1	2	0	0	<1	1	0	0	0	0.3
P02 SEGL 2023	BTB4009	12	0	PBTC-C2	19.5	21.7	0	0	<1	2	0	0	<1	2	0	0	0	0.3
P02 SEGL 2023	BTB4010	12	0	PBTC-C1	18.3	22.2	0	1	<1	<1	0	0	<1	2	0	0	0.1	0.3
P02 SEGL 2023	BTB4012	12	0	-	20.5	21.9	0	0	<1	2	0	0	<1	1	0	0	0.1	0.6
P02 SEGL 2023	BTB4013	12	0	-	19.9	22	0	0	<1	2	0	0	<1	47	4	0	0.1	0.5
P02 SEGL 2023	BTB4014	12	0	PBTC-C1	19.7	22.1	0	0	<1	1	0	0	<1	1	0	0	0	(-)0.3
P02 SEGL 2023	BTB4016	12	0	-	20.3	22.2	0	0	<1	<1	0	0	<1	<1	0	0	0.1	0.3
P02 SEGL 2023	BTB4017	9	0	PBTC-C1	19.9	21.4	0	0	<1	<1	0	0	<1	1	0	0	0	0.2
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x	Exceeds Safety Threshold 20% LEL and/or Safety threshold 100% LEL for Methane
x	Exceeds Long Term GAC and/or Short Term GAC for Carbon dioxide
x	Below Depleted Value and/or Mining Act Value for Oxygen
x	Exceeds Long Term GAC and/or Short Term GAC for Hydrogen sulphide
x	Exceeds Long Term GAC and/or Short Term GAC for Carbon monoxide

Supporting Figures

Appendix A13-1.1: Ground Investigation Exploratory Hole Location Plan

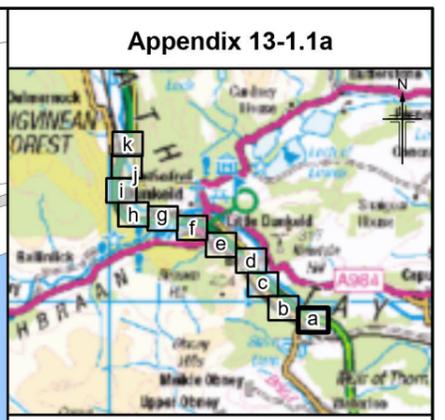
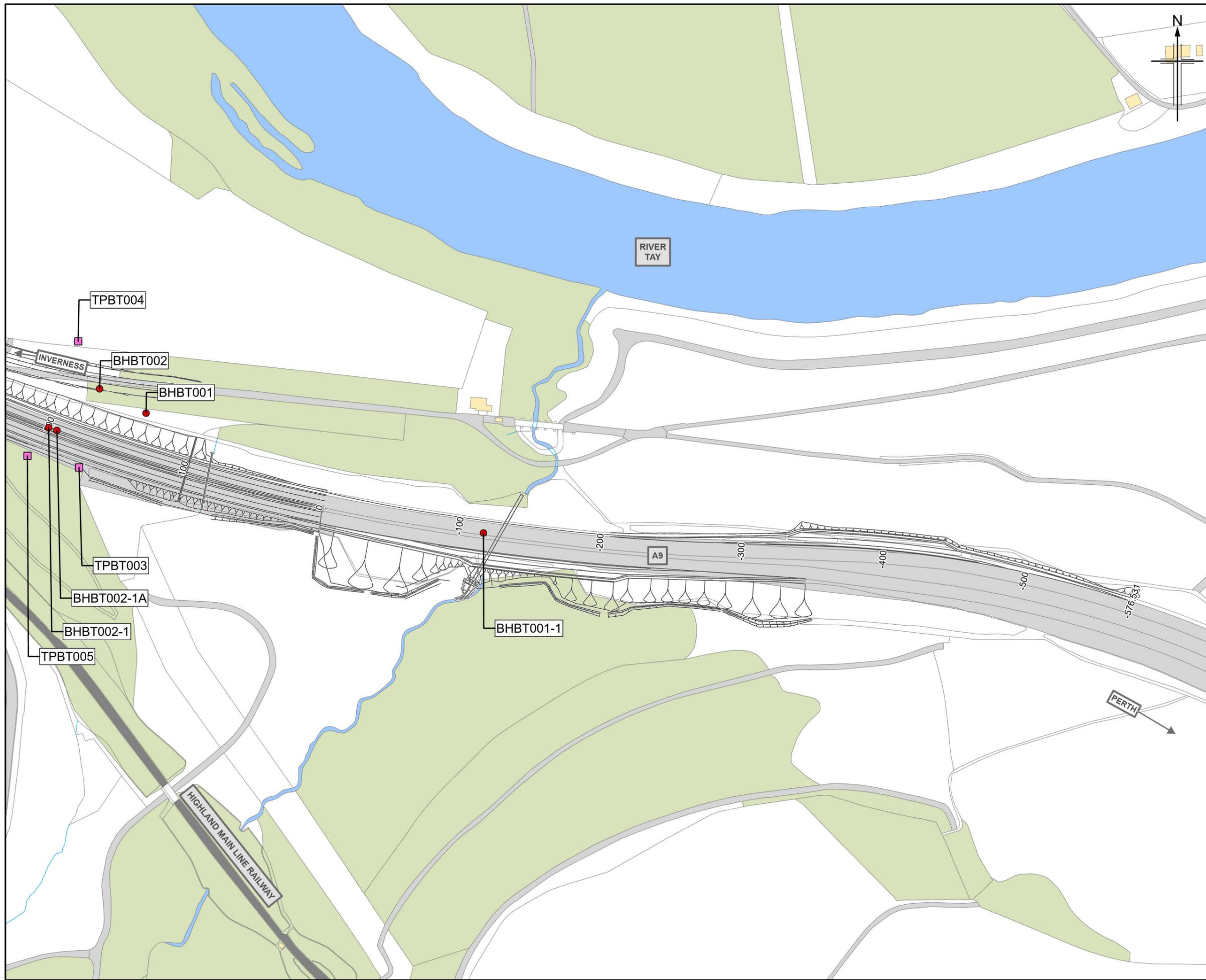
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Appendix A13-1.3: Ground Resource Protection Value (RPV) Exceedances

Appendix A13-1.4: Soil Leachate Resource Protection Value (RPV) Exceedances

Appendix A13-1.5: Groundwater – Freshwater Environmental Quality Standards (EQS) Exceedances

Appendix A13-1.6: Soil Leachate – Freshwater Environmental Quality Standards (EQS) Exceedances



Legend

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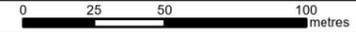
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Project
A9
DUALLING
 PASS OF BIRNAM
 TO TAY CROSSING

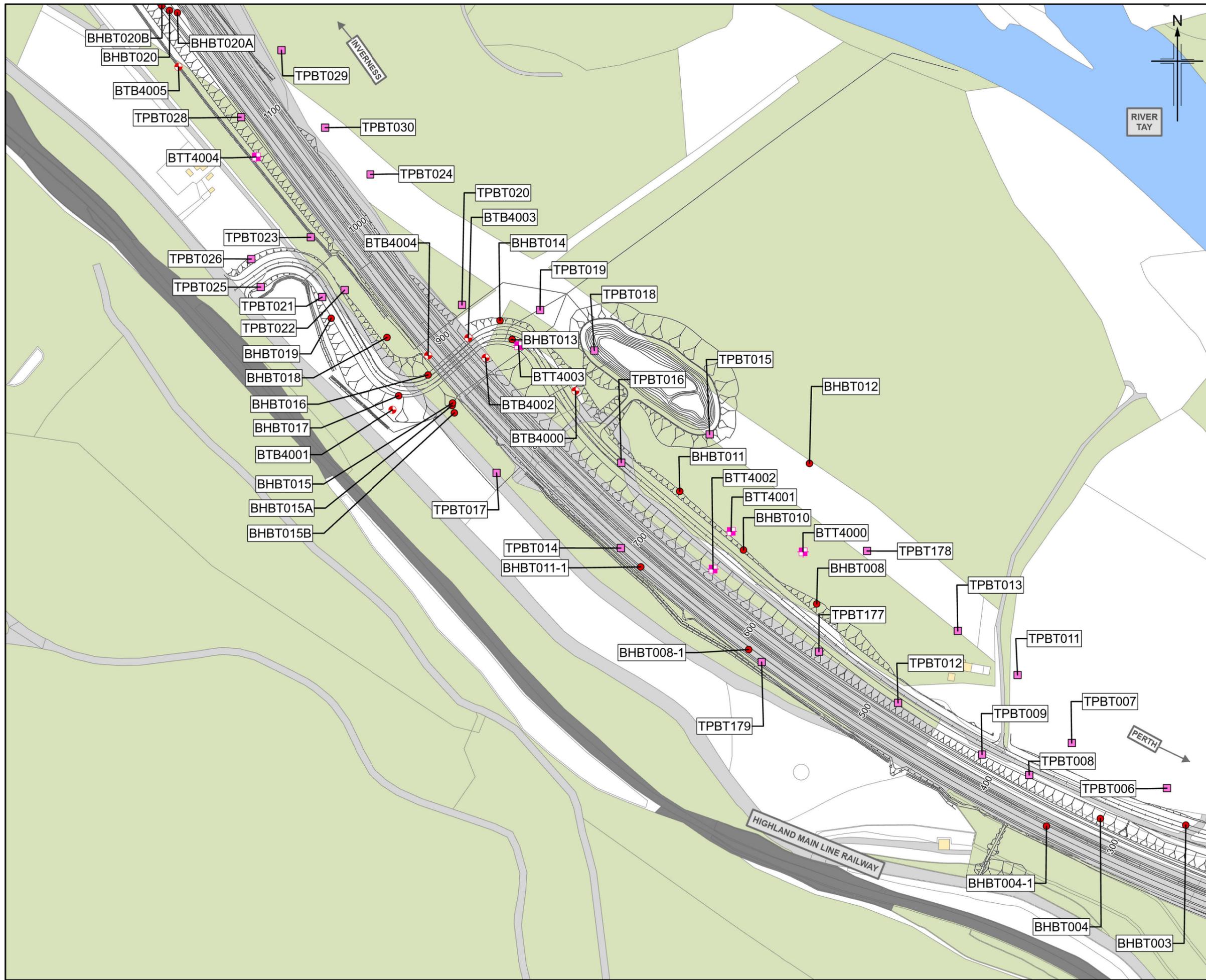
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 Ground Investigation Exploratory
 Hole Location Plan**

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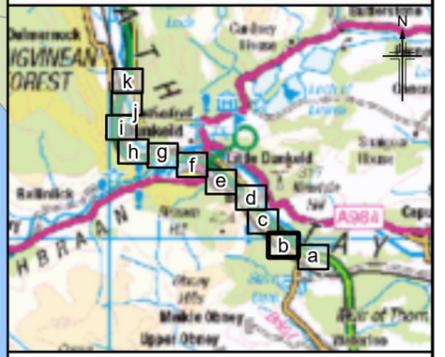
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Appendix 13-1.1b



- Legend**
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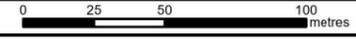
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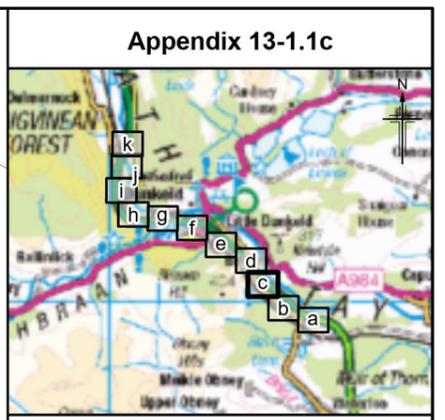
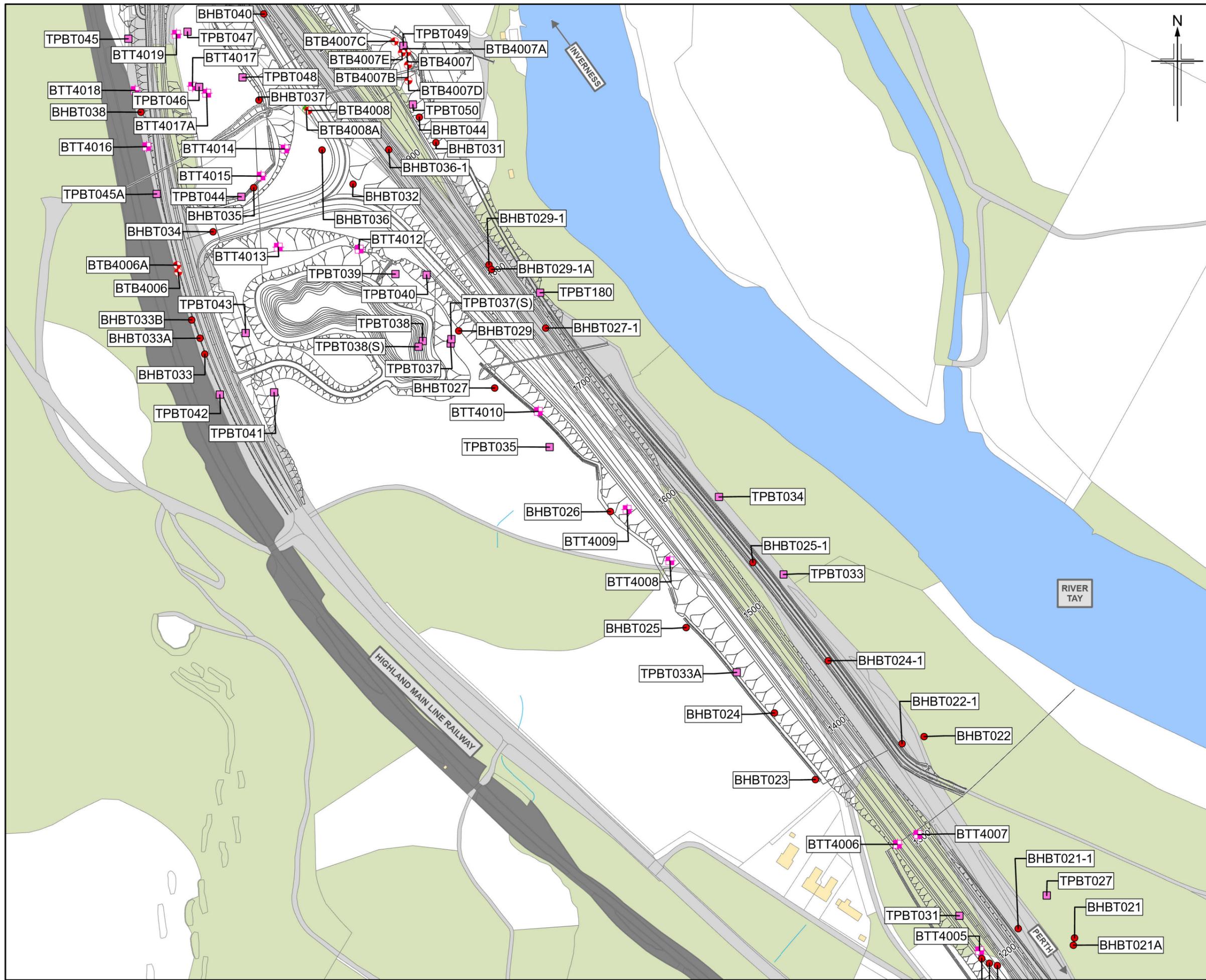
A9 DUALLING
 PASS OF BIRNAM TO TAY CROSSING

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Environmental Impact Assessment Report
Ground Investigation Exploratory
Hole Location Plan
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- Legend**
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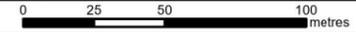


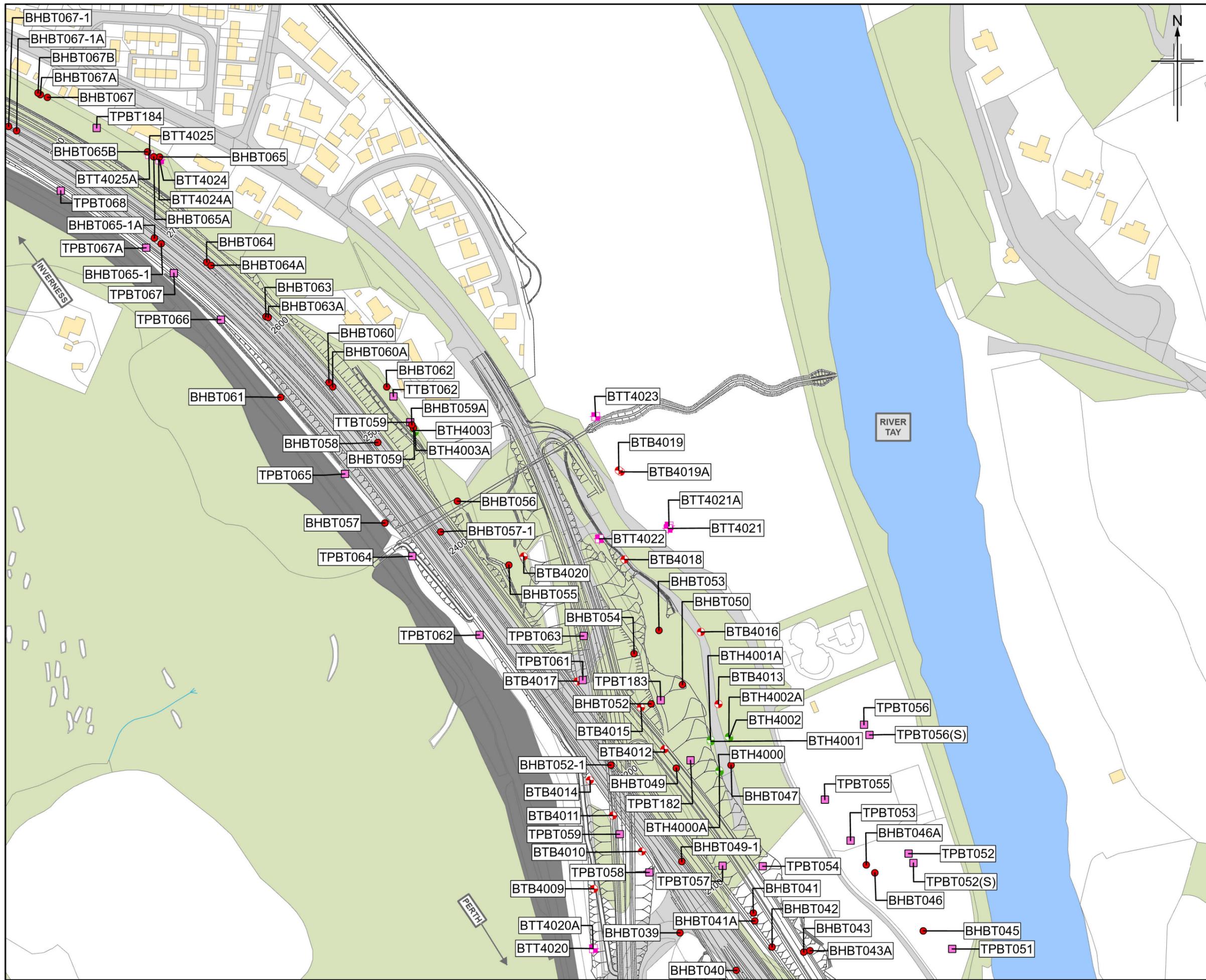
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Ground Investigation Exploratory
Hole Location Plan

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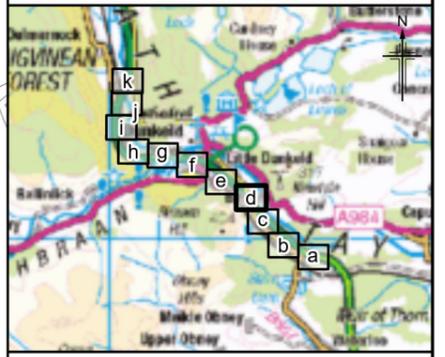
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Appendix 13-1.1d



- Legend**
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 - SuDS
 - Soil Engineering GI - BHs
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 - Supplementary Cone Penetration Test
 - As-Built Birnam Additional BHs

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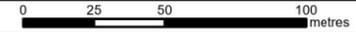
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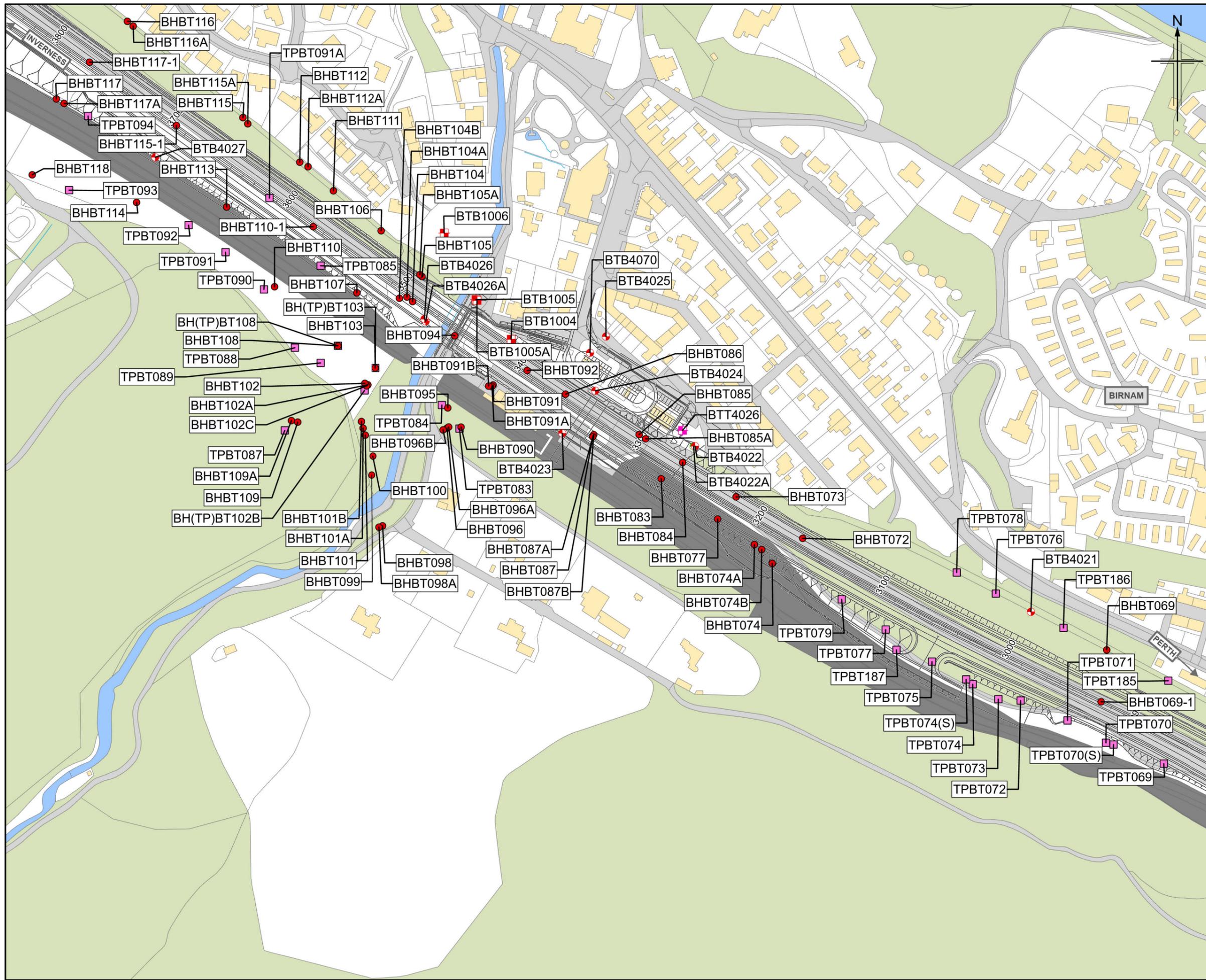
 A9
 DUALLING
 PASS OF BIRNAM
 TO TAY CROSSING

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 Ground Investigation Exploratory
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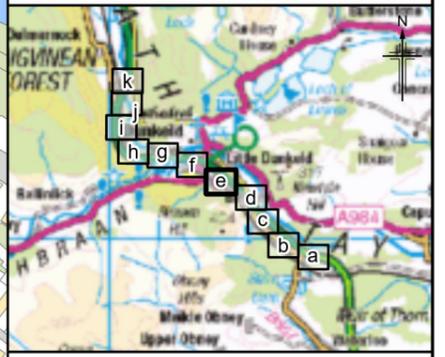
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Appendix 13-1.1e



- Legend**
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 - Supplementary Hand Pit
 - Supplementary Cone Penetration Test
 - As-Built Birnam Additional BHs

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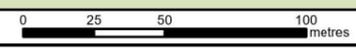
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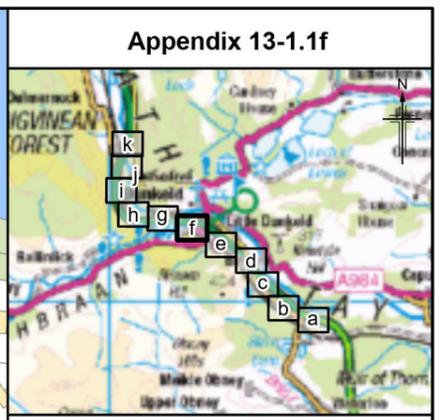
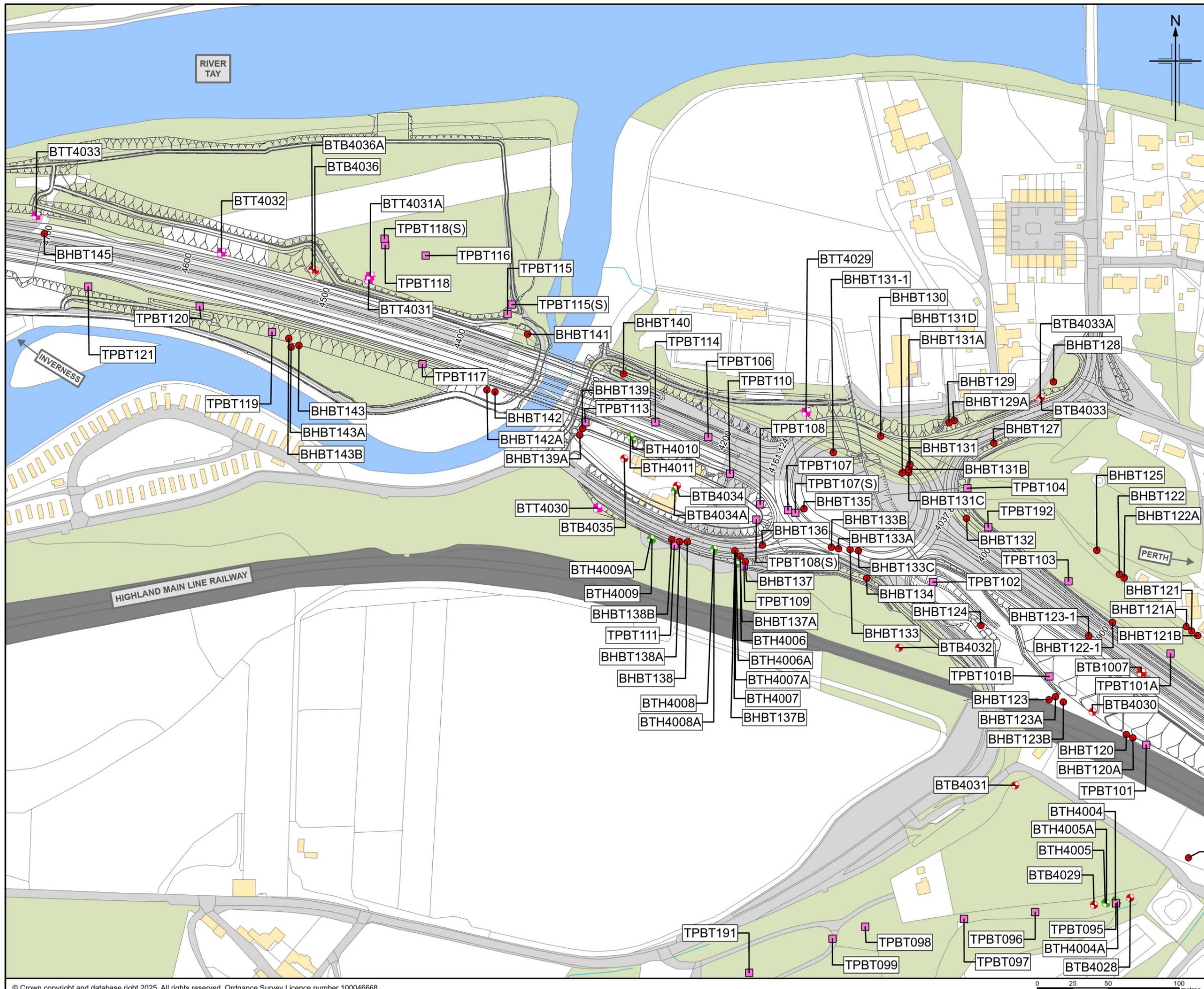
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 Ground Investigation Exploratory
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Legend

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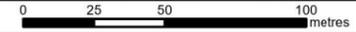
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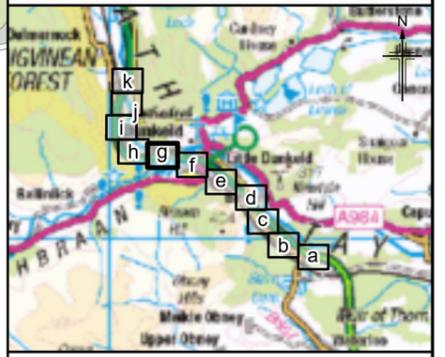
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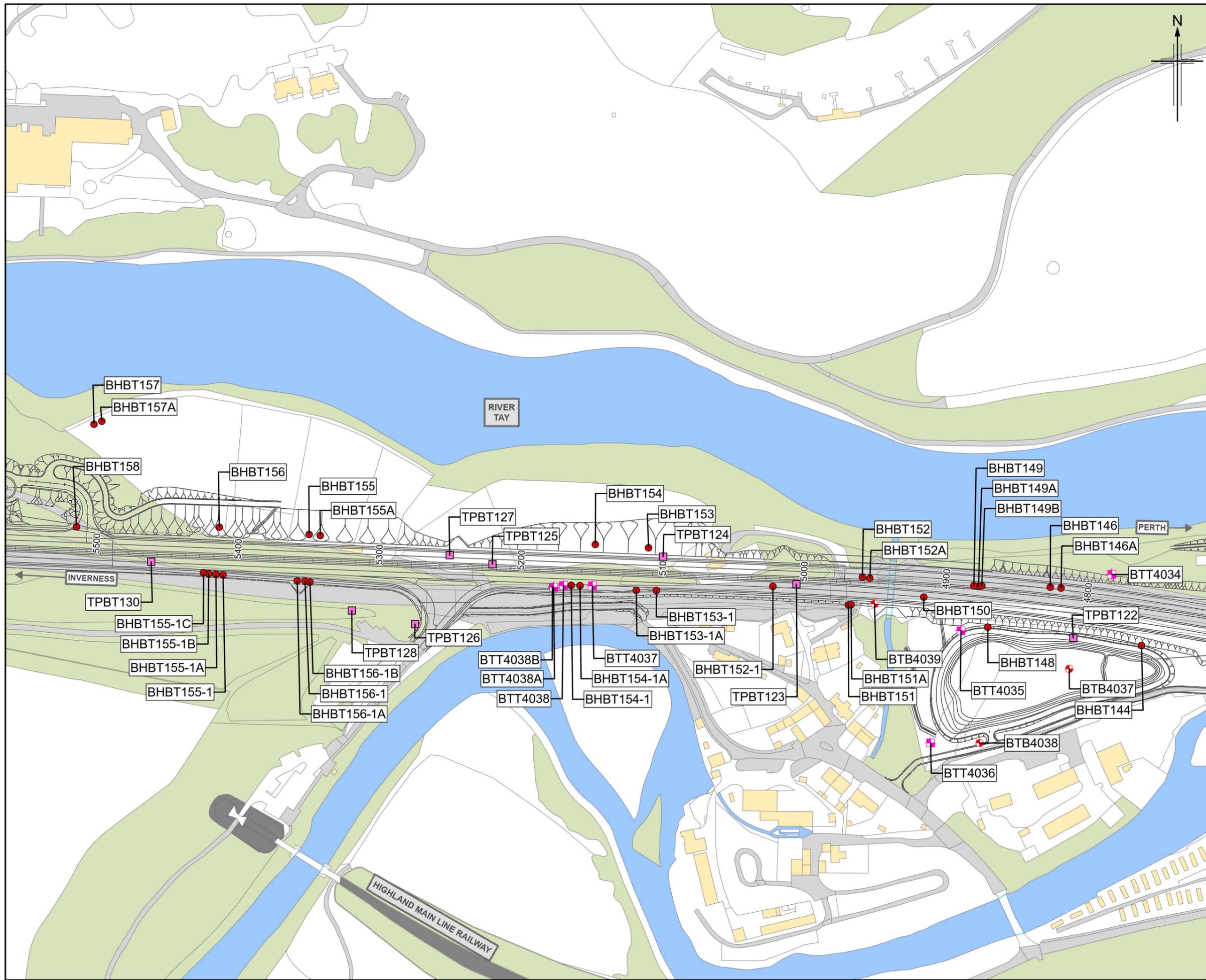
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- Legend**
- Proposed Scheme (DMRB Stage 3)
 - SuDS
 - Soil Engineering GI - BHs
 - Soil Engineering GI - TPs
 - Supplementary Borehole
 - Supplementary Trial Pit
 - Supplementary Hand Pit
 - Supplementary Cone Penetration Test
 - As-Built Birnam Additional BHs



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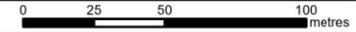
A9
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 PASS OF BIRNAM
 TO TAY CROSSING

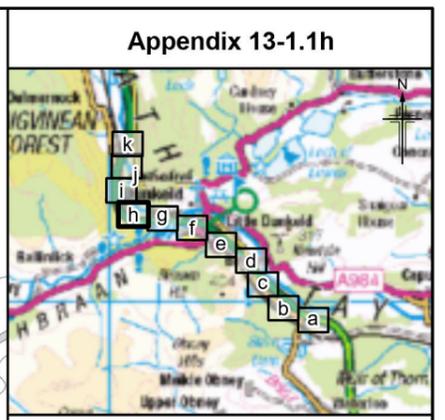
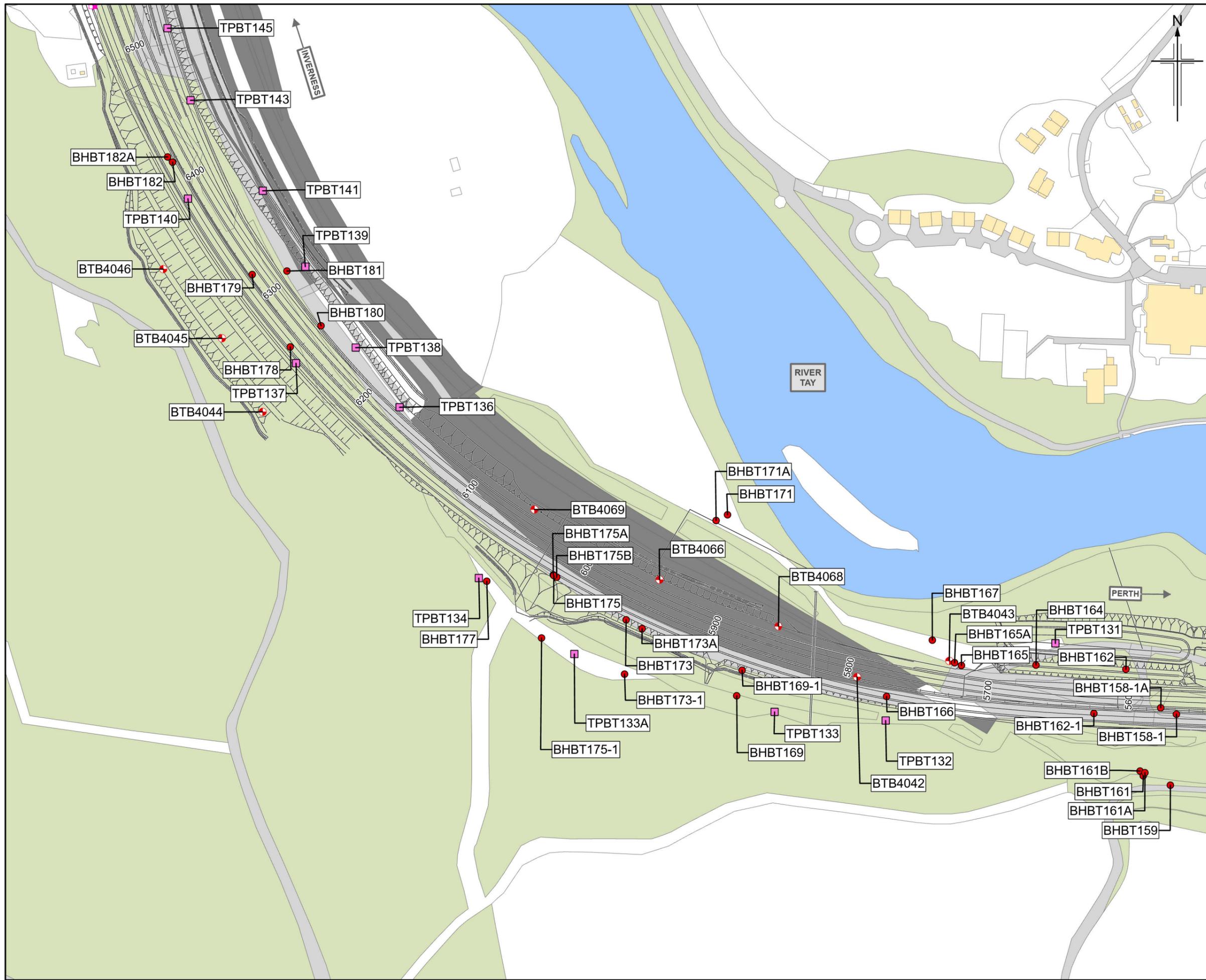
Drawing title
**Environmental Impact Assessment Report
 Ground Investigation Exploratory
 Hole Location Plan**

Sheet 7 of 11

Drawing Status	S4 - For Stage Approval	
Scale	1:2,500 @ A3	DO NOT SCALE
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 - Soil Engineering GI - BHs
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 - Supplementary Borehole
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 - Supplementary Cone Penetration Test
 - As-Built Birnam Additional BHs

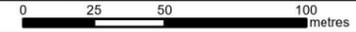
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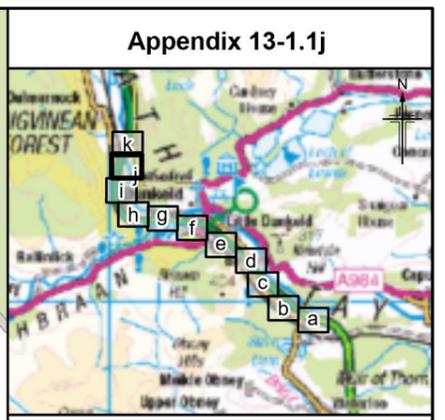
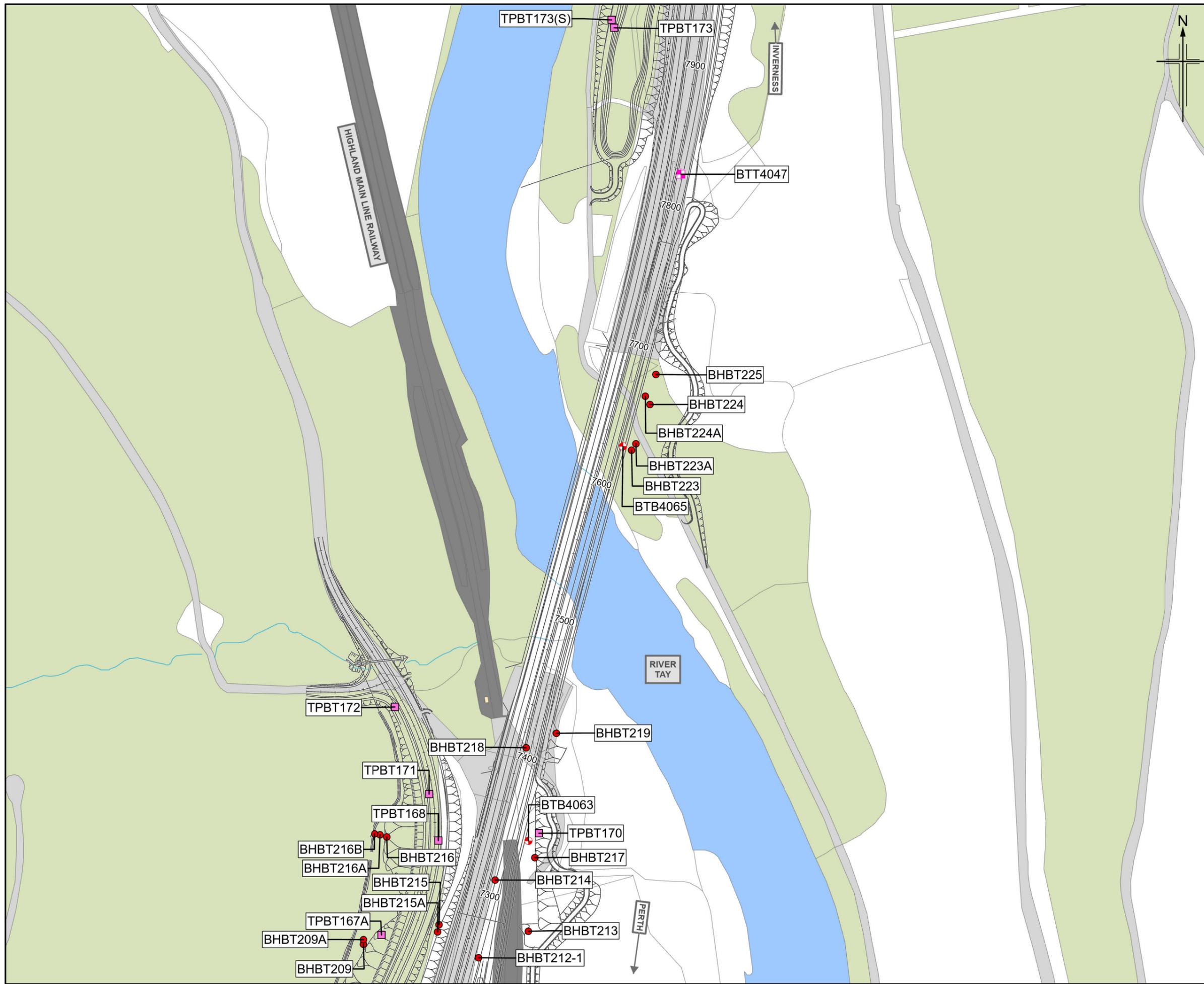


Environmental Impact Assessment Report
Ground Investigation Exploratory
Hole Location Plan
 Sheet 8 of 11

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BIM No.	
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Legend

- Proposed Scheme (DMRB Stage 3)
- SuDS
- Soil Engineering GI - BHs
- Soil Engineering GI - TPs
- Supplementary Borehole
- Supplementary Trial Pit
- Supplementary Hand Pit
- Supplementary Cone Penetration Test
- As-Built Birnam Additional BHs

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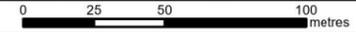
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 PASS OF BIRNAM TO TAY CROSSING

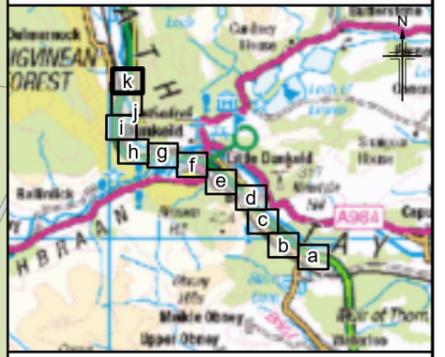
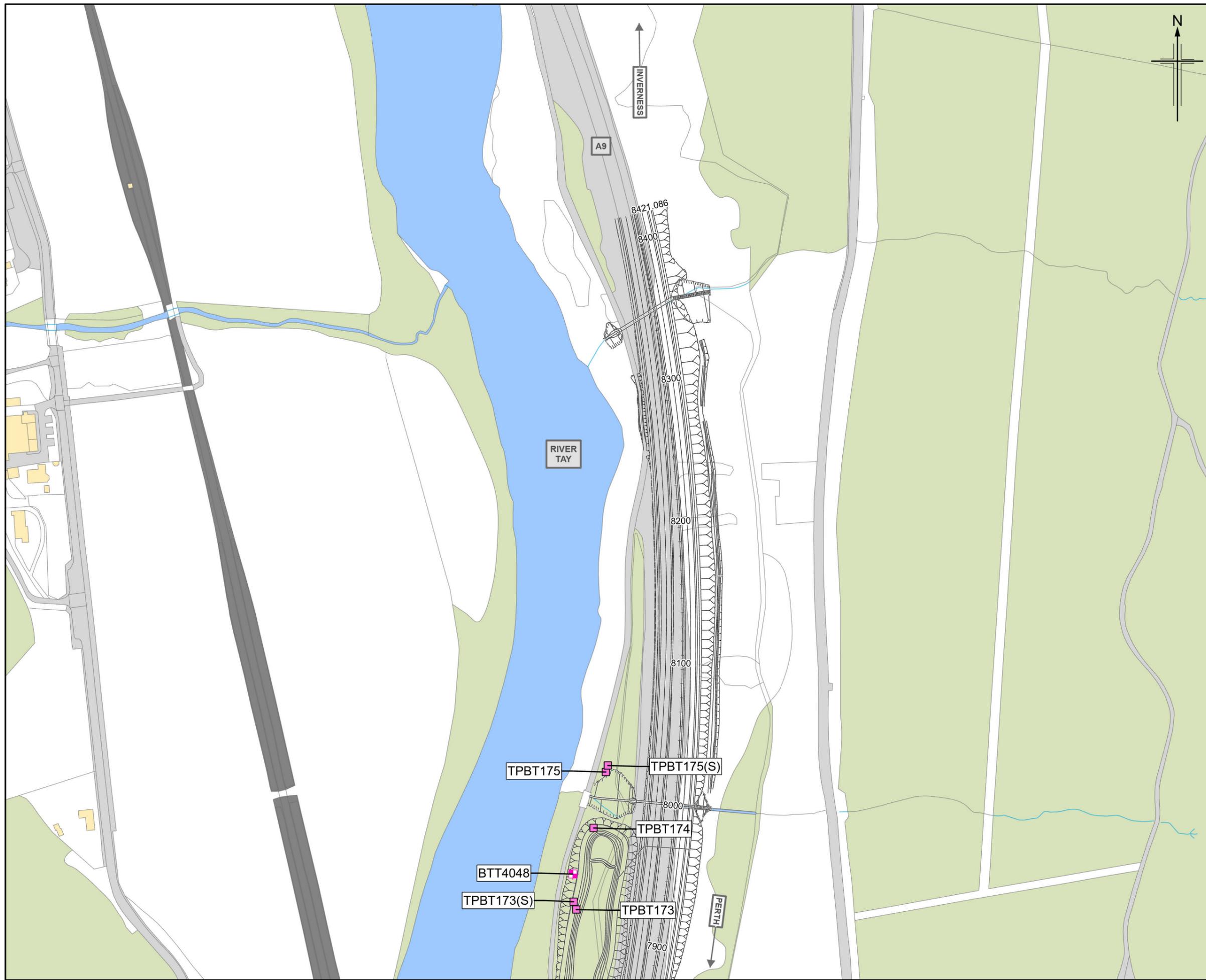
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 Ground Investigation Exploratory
 Hole Location Plan**

Sheet 10 of 11

Drawing Status	S4 - For Stage Approval
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BIM No.	
Drawing number	Appendix 13-1.1j
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- Legend**
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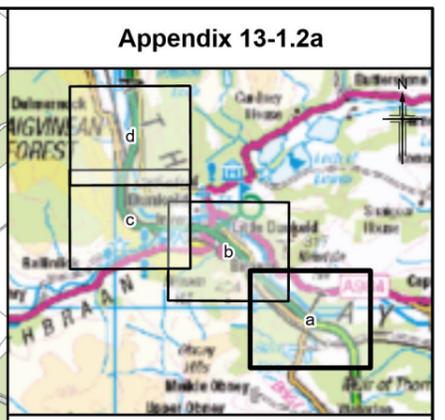
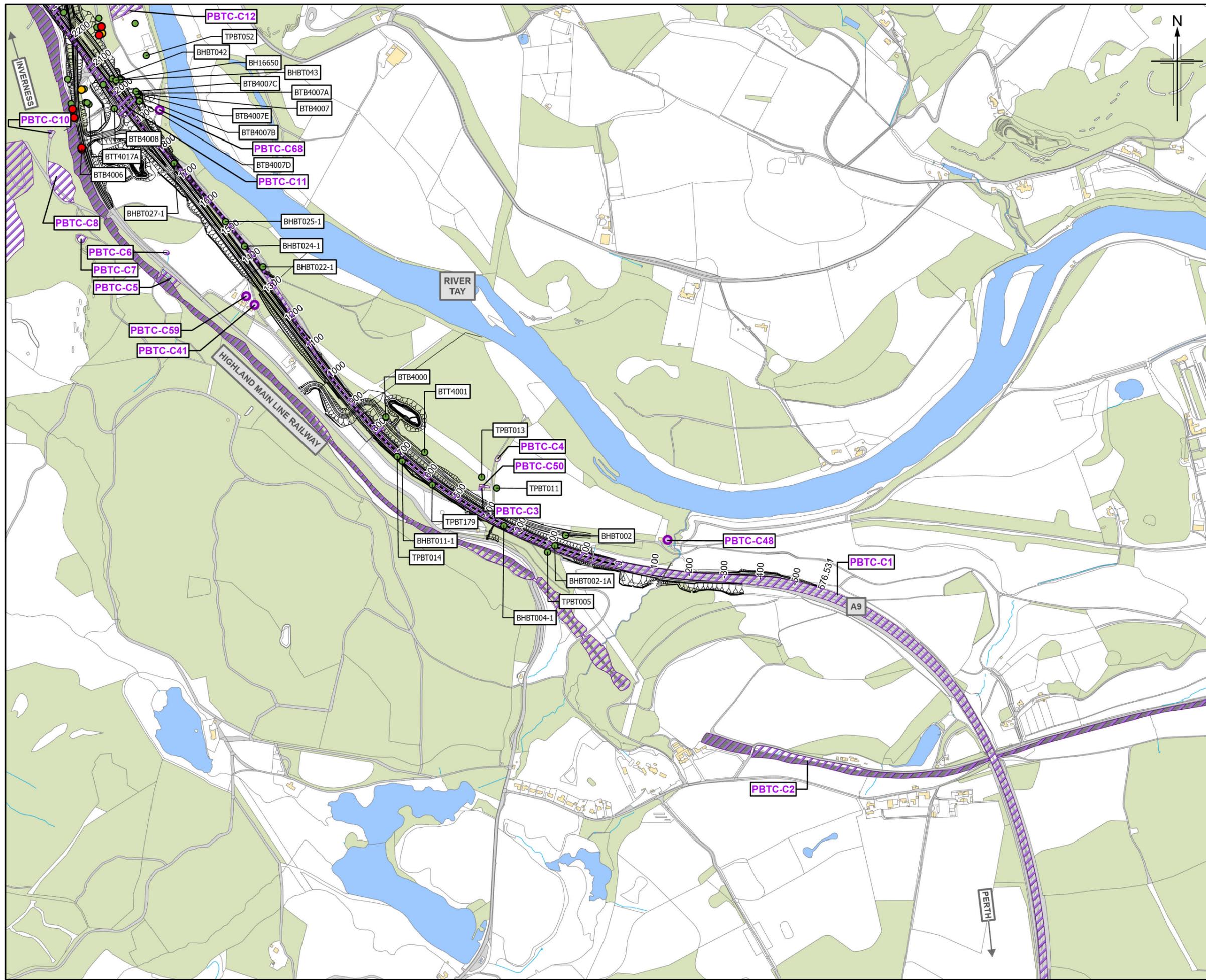
Project

A9
 DUALLING
 PASS OF BIRNAM
 TO TAY CROSSING

Drawing title
Environmental Impact Assessment Report
Ground Investigation Exploratory
Hole Location Plan
 Sheet 11 of 11

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BIM No.			
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- #### Legend
- Proposed Scheme (DMRB Stage 3)
 - SuDS
 - Potential Land Contamination Information**
 - } Potentially contaminative source
 - Soil Exceedances**
 - No Exceedance
 - Residential without plant uptake exceedance
 - Commercial and Public Open Space exceedance
 - Asbestos detect

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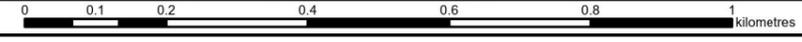
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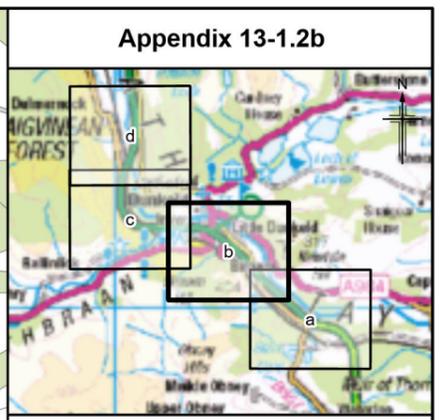
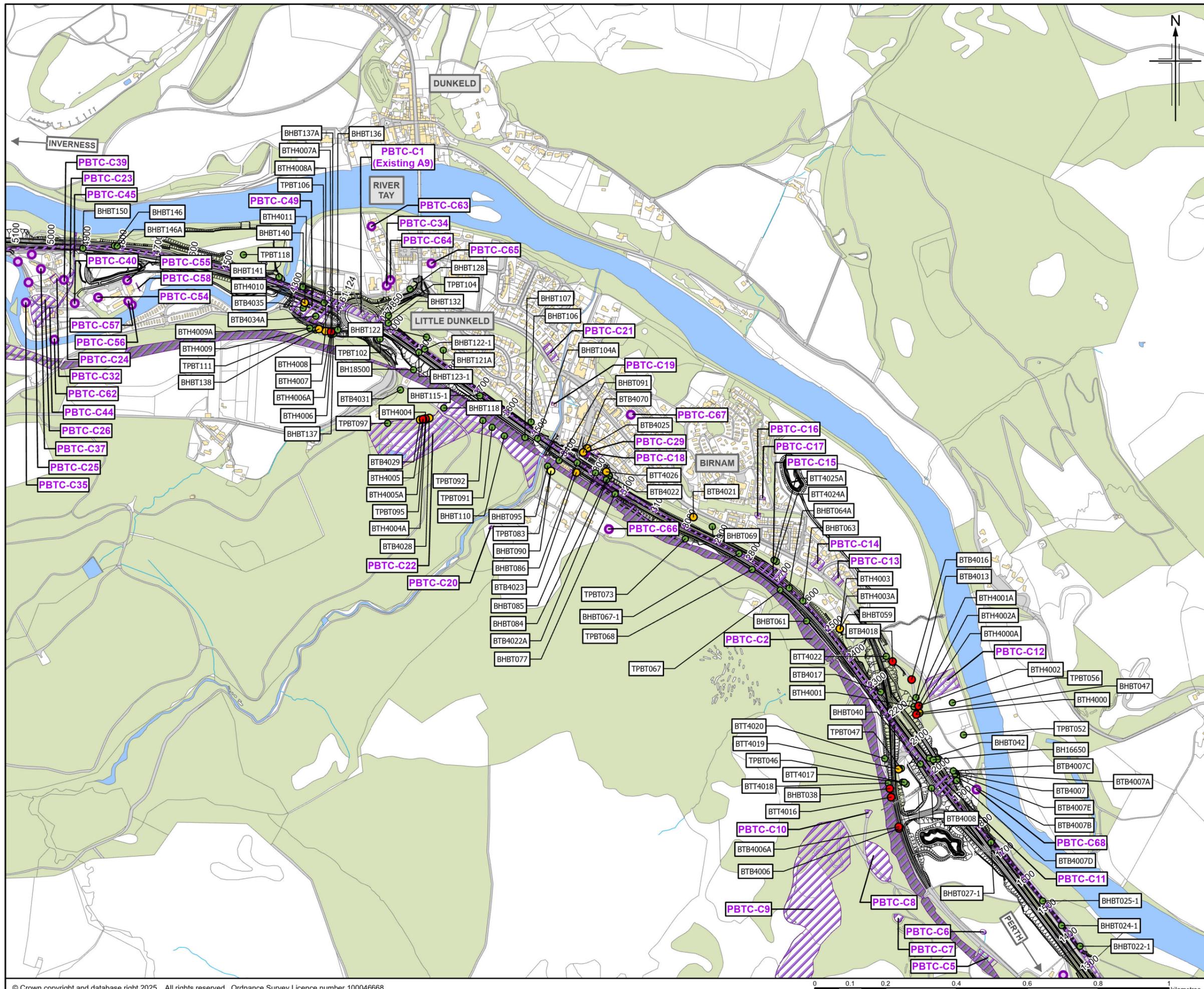
Environmental Impact Assessment Report Soil Exceedances

Sheet 1 of 4

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- Legend**
- == Proposed Scheme (DMRB Stage 3)
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 - Potential Land Contamination Information
 - } Potentially contaminative source
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 - No Exceedance
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 - Commercial and Public Open Space exceedance
 - Asbestos detect

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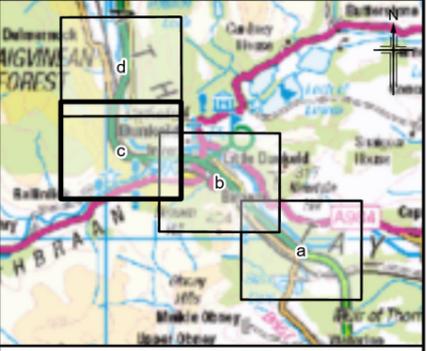


Environmental Impact Assessment Report
Soil Exceedances

Sheet 2 of 4

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Legend

Proposed Scheme (DMRB Stage 3)

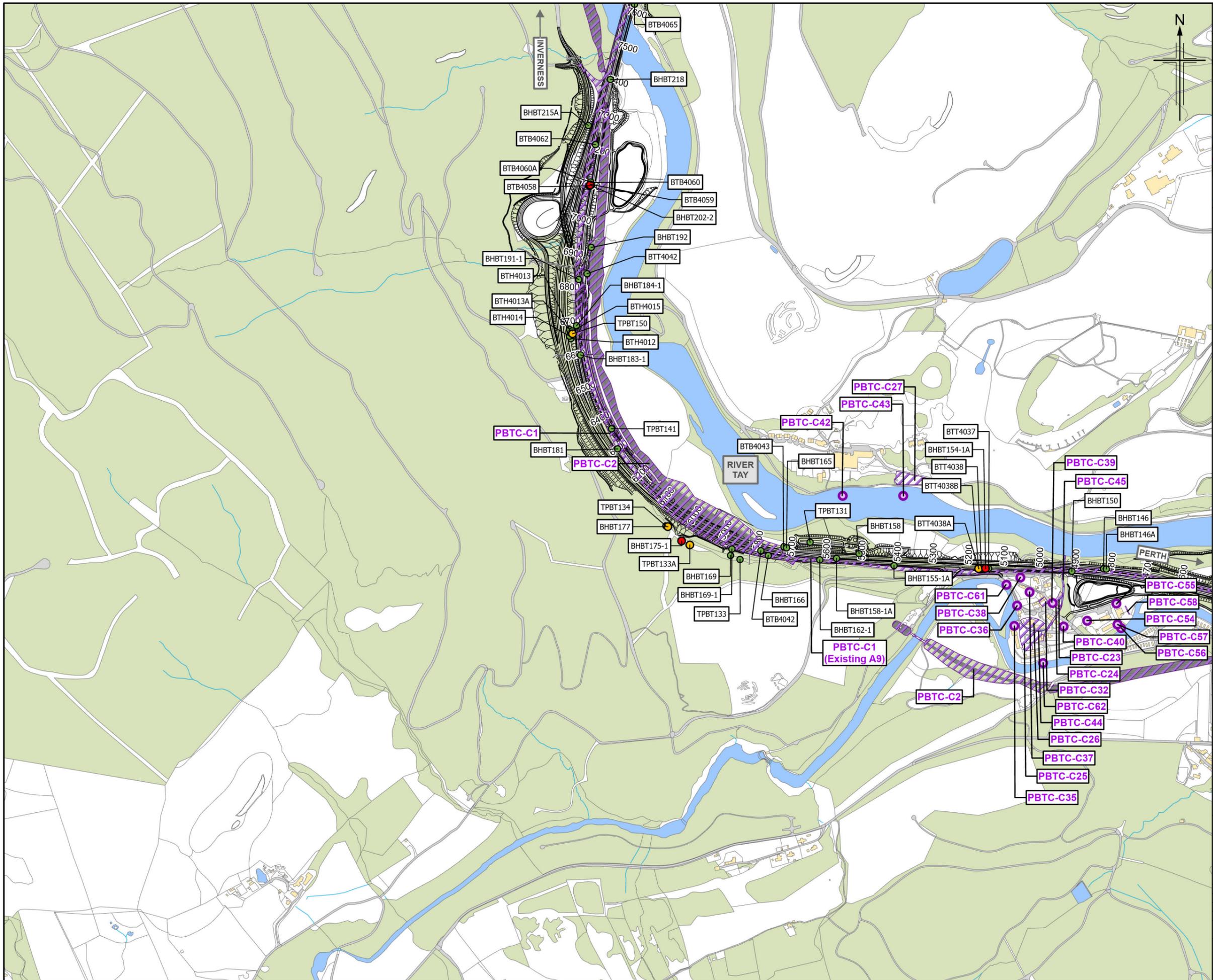
SuDS

Potential Land Contamination Information

Potentially contaminative source

Soil Exceedances

- No Exceedance
- Residential without plant uptake exceedance
- Commercial and Public Open Space exceedance
- Asbestos detect



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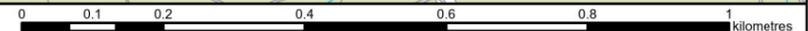
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 TO TAY CROSSING

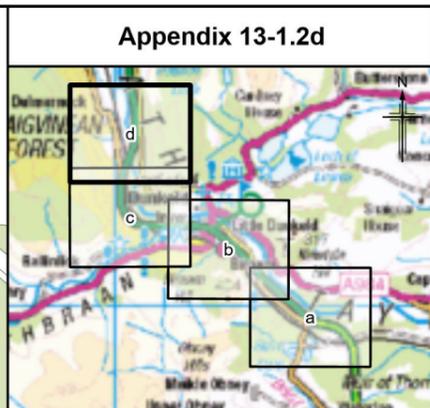
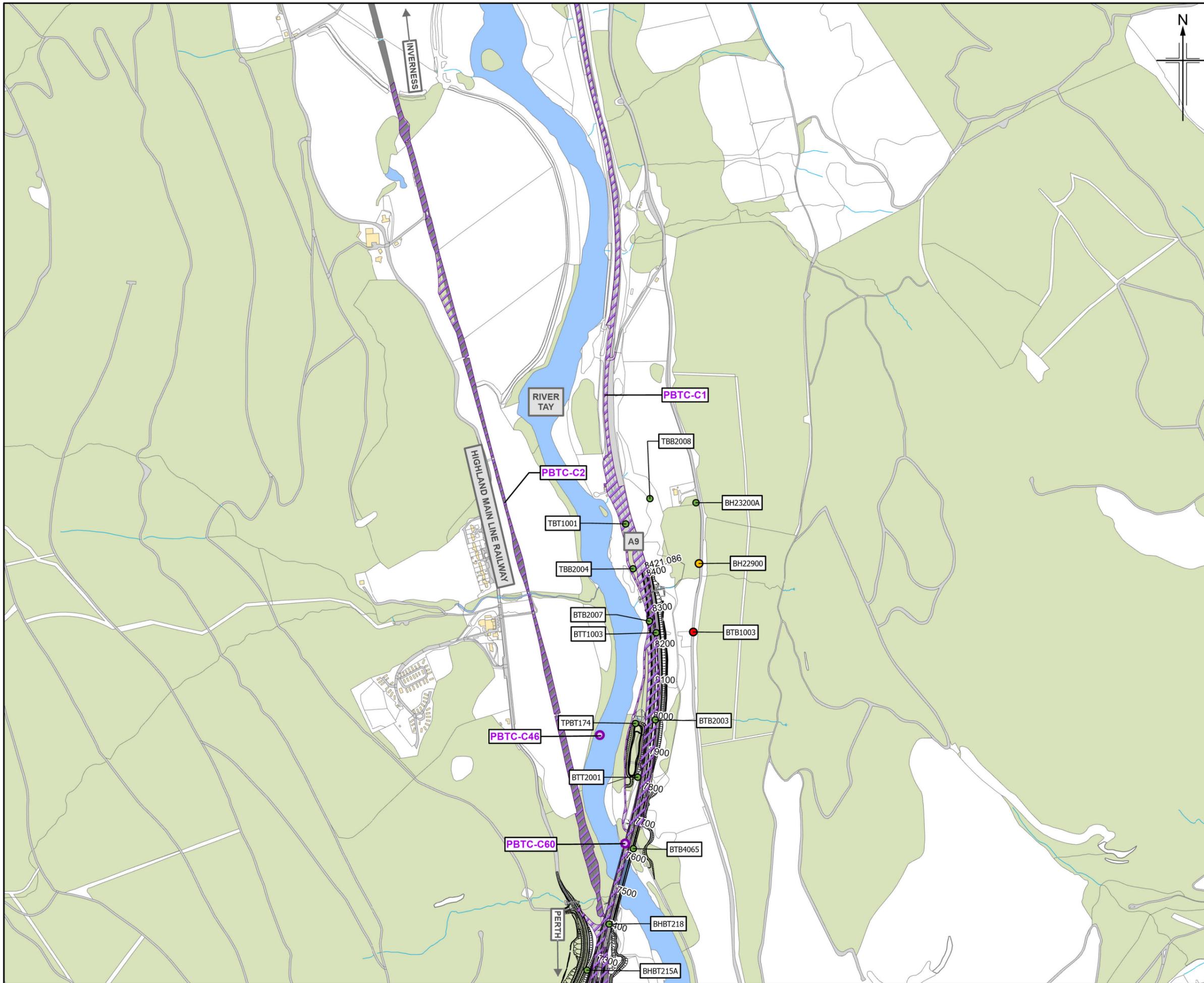
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Environmental Impact Assessment Report
Soil Exceedances

Sheet 3 of 4

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- Legend**
- Proposed Scheme (DMRB Stage 3)
 - SuDS
 - Potential Land Contamination Information**
 - Potentially contaminative source
 - Soil Exceedances**
 - No Exceedance
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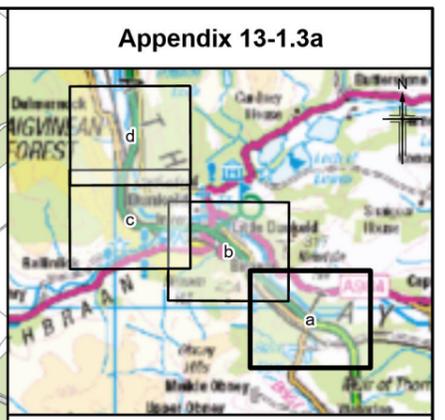
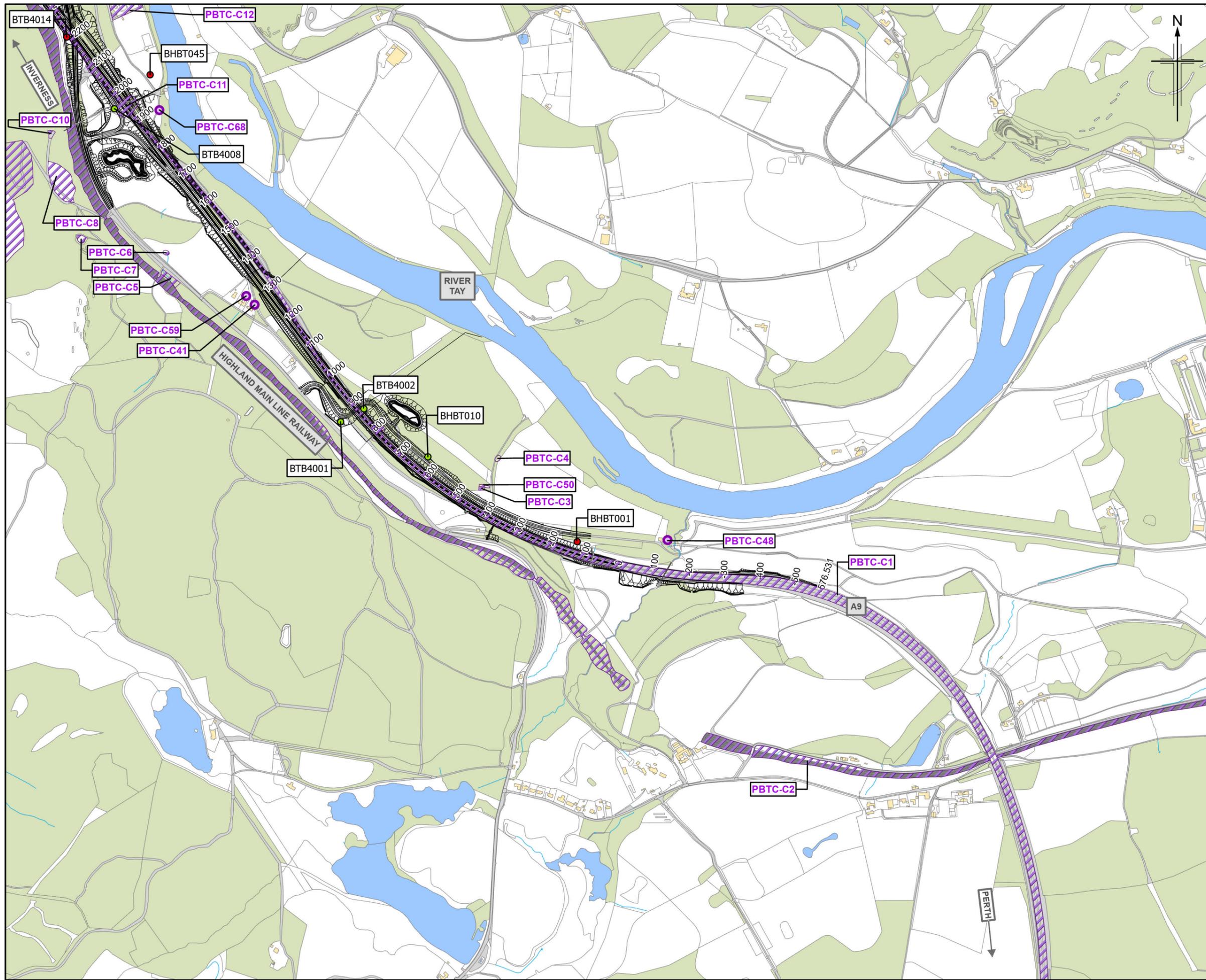
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Environmental Impact Assessment Report
Soil Exceedances

Sheet 4 of 4

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- Legend**
- Proposed Scheme (DMRB Stage 3)
 - SuDS
 - Potential Land Contamination Information**
 - Potentially contaminative source
 - Groundwater RPV Exceedances**
 - No RPV Exceedances
 - RPV Exceedances

Rev.	Rev. Date	Purpose of revision	PM	LR	GK	EM
P03	MAY 2025	For Stage Approval				

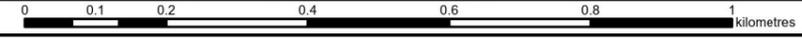
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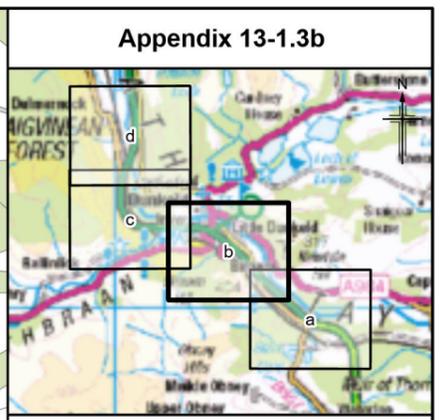
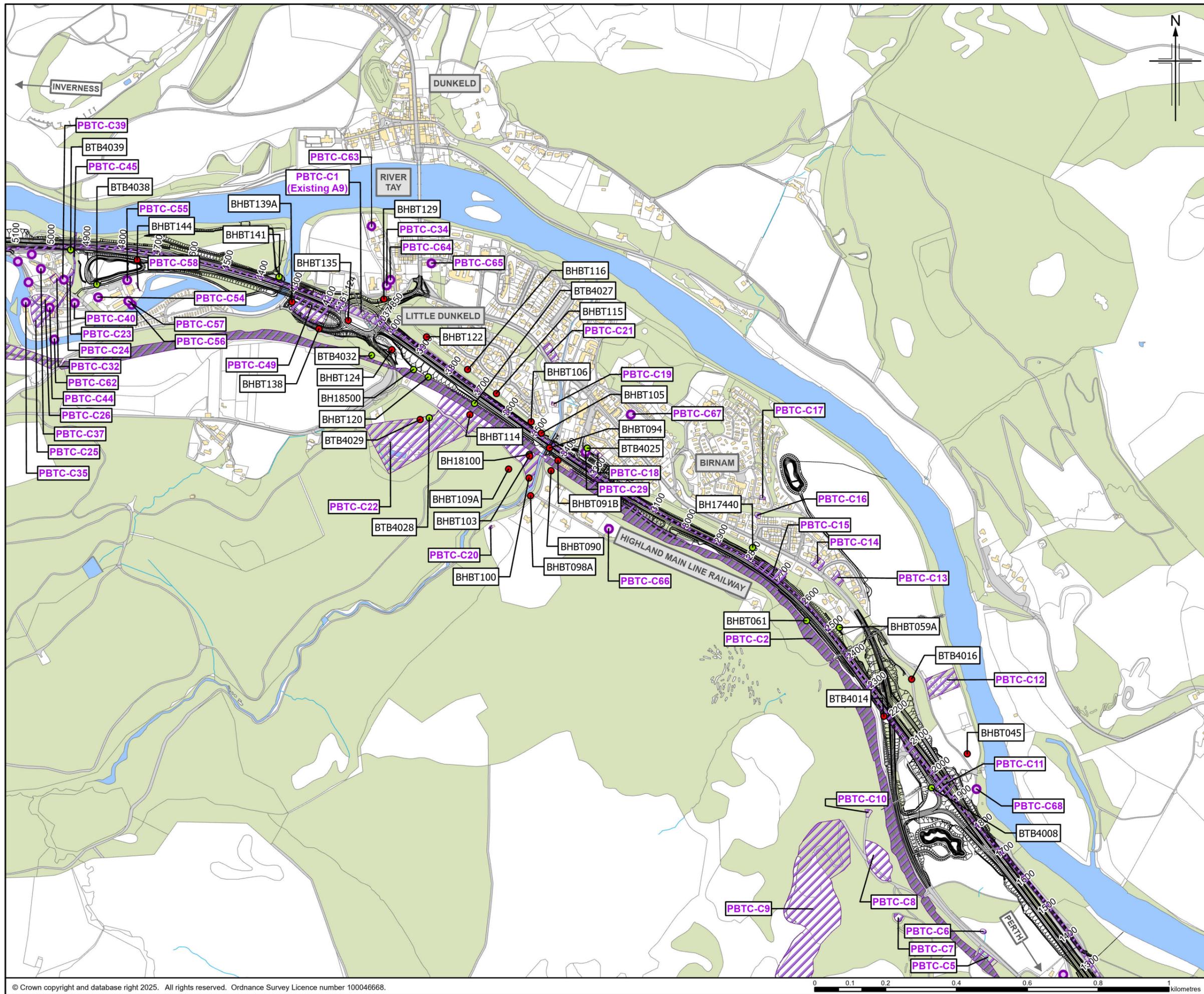


Environmental Impact Assessment Report
Groundwater Resource Protection
Value (RPV) Exceedances
 Sheet 1 of 4

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- #### Legend
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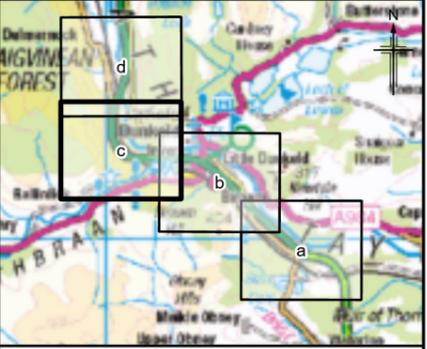
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Drawing title
Environmental Impact Assessment Report
Groundwater Resource Protection
Value (RPV) Exceedances
 Sheet 2 of 4

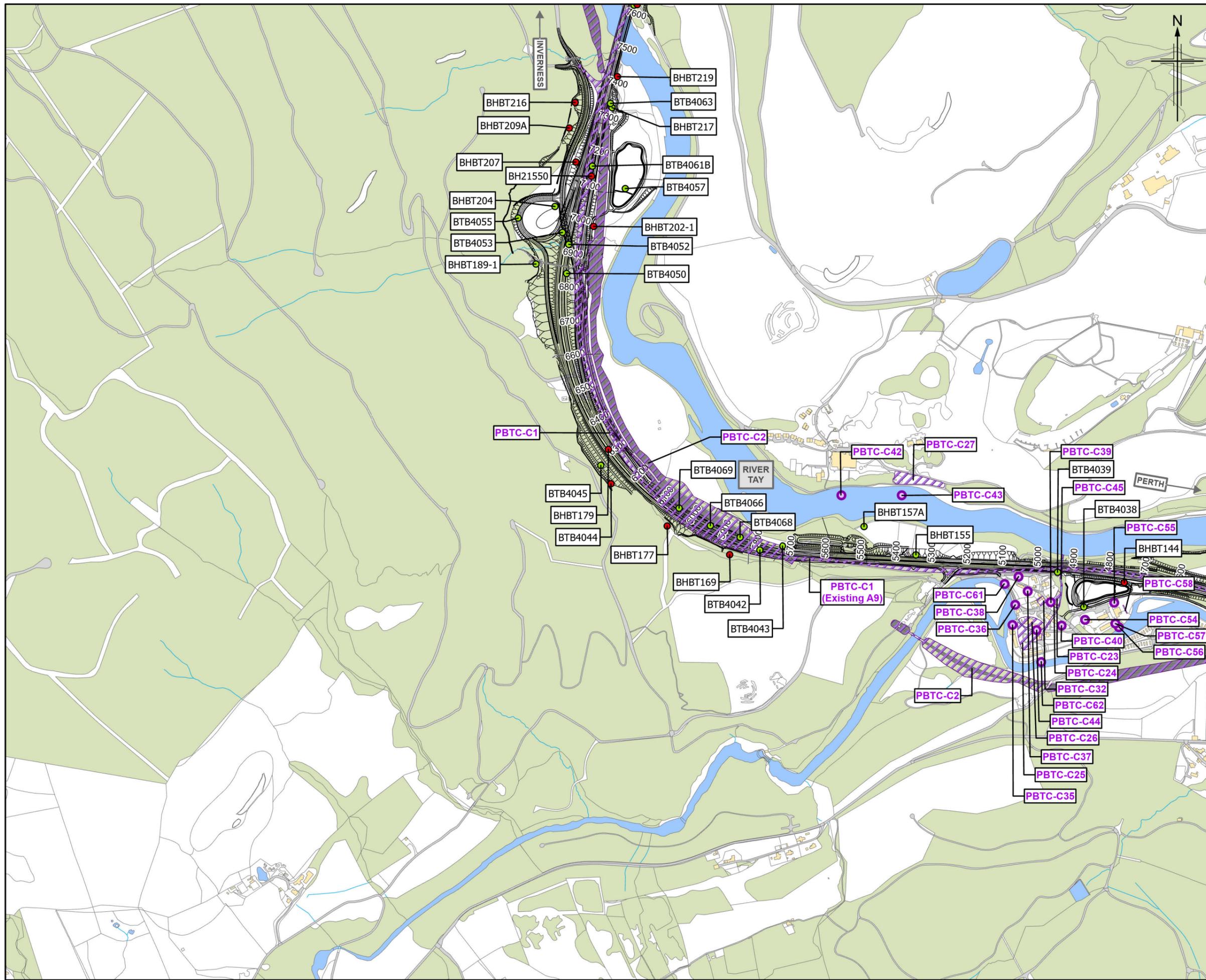
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 - RPV Exceedances



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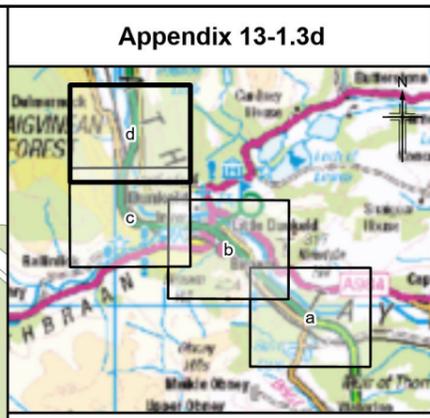
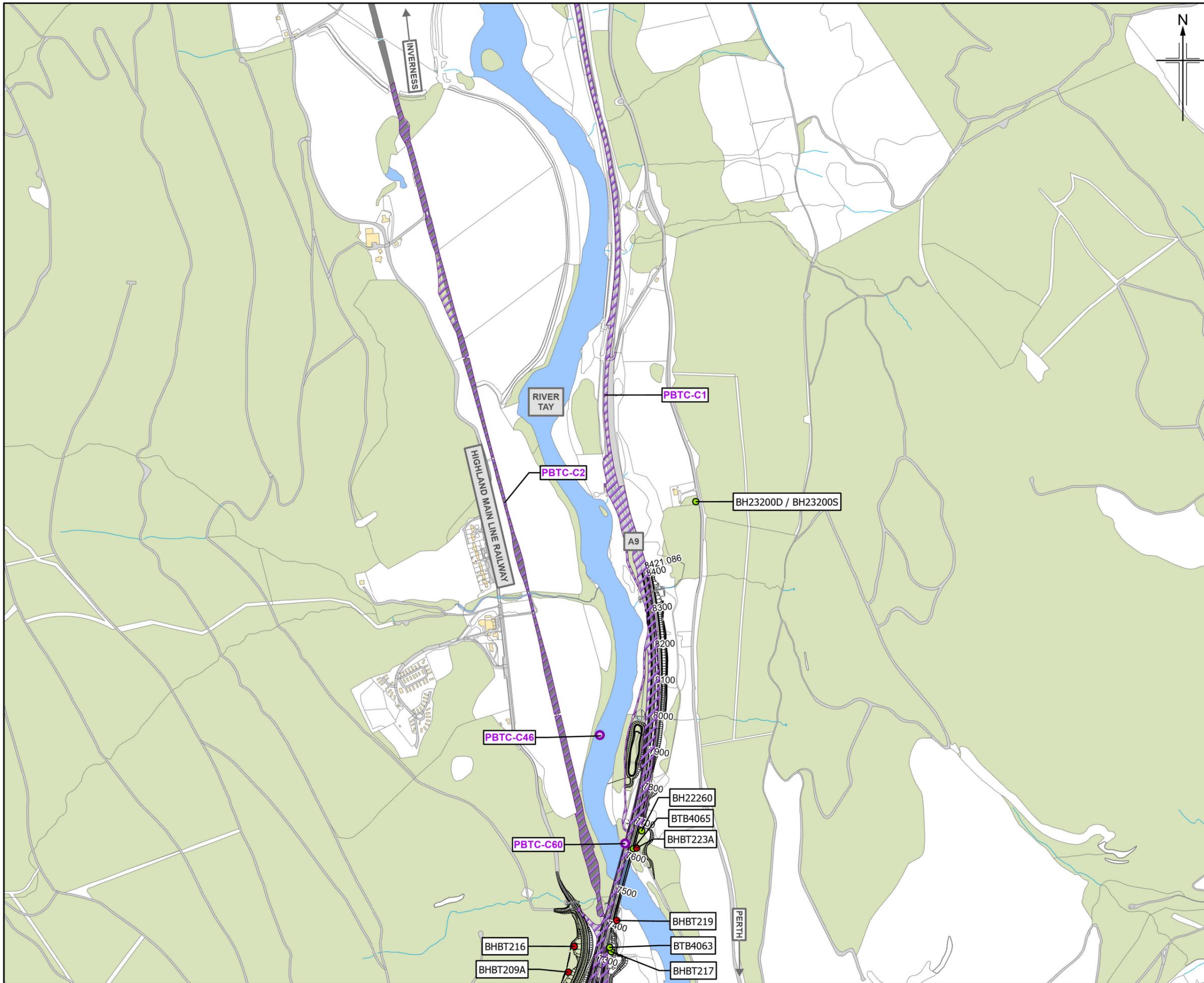
**Environmental Impact Assessment Report
 Groundwater Resource Protection
 Value (RPV) Exceedances**

Sheet 3 of 4

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 - Potentially contaminative source
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Rev.	Rev. Date	Purpose of revision	Orig/Dwn	Checked	Rev'd	Apprv'd
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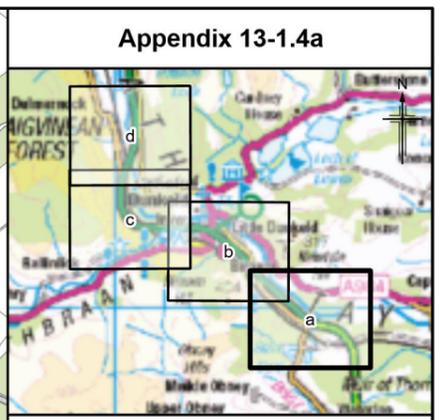
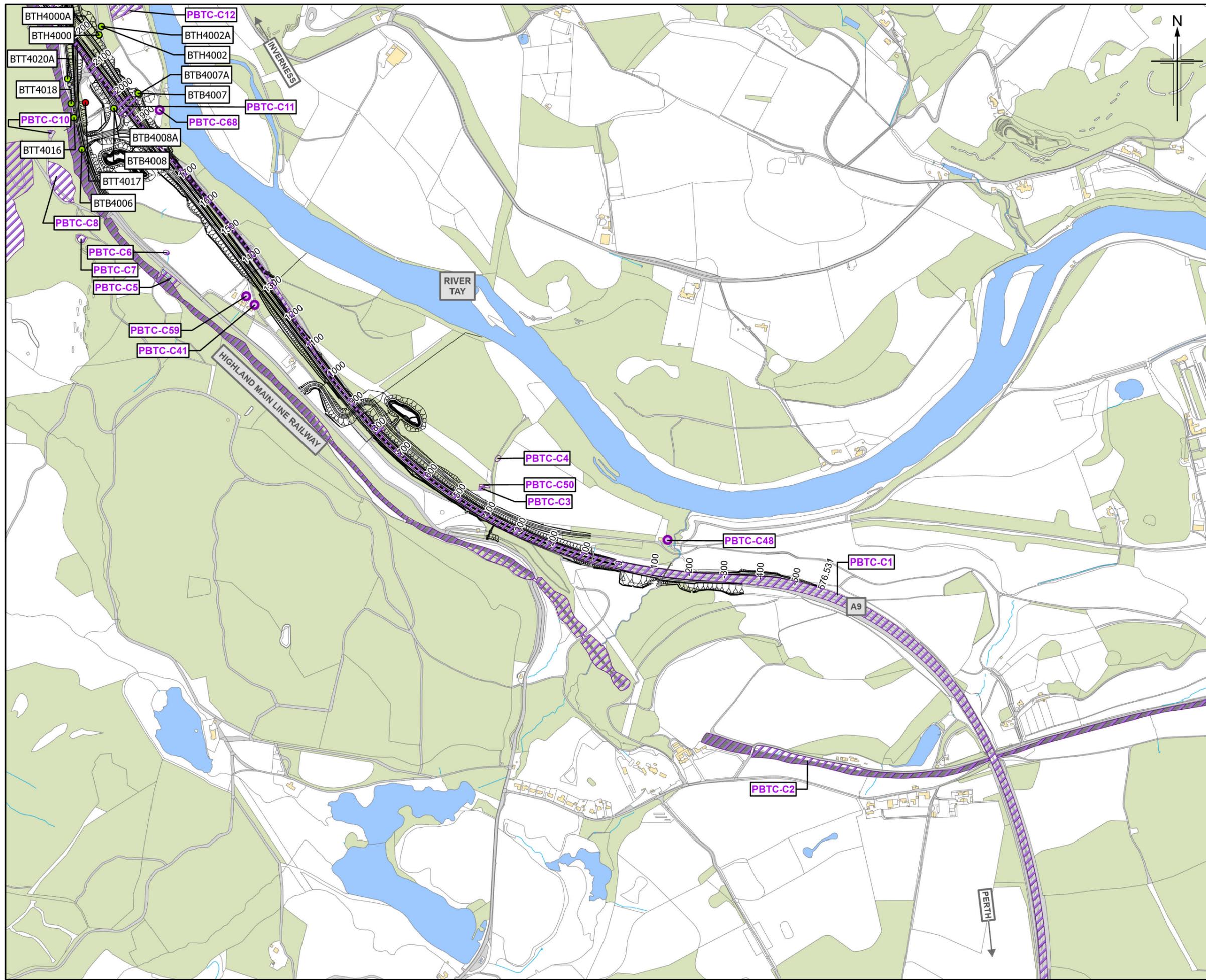
Project
A9 DUALLING
 PASS OF BIRNAM TO TAY CROSSING

Drawing title
Environmental Impact Assessment Report
Groundwater Resource Protection
Value (RPV) Exceedances
 Sheet 4 of 4

Drawing Status	S4 - For Stage Approval	
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Drawing number	Appendix 13-1.3d	Rev P03

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- Legend**
- Proposed Scheme (DMRB Stage 3)
 - SuDS
 - Potential Land Contamination Information**
 - Potentially contaminative source
 - Leachate RPV Exceedances**
 - No RPV Exceedances
 - RPV Exceedances

Rev.	Rev. Date	Purpose of revision	PM	LR	GK	EM
P03	MAY 2025	For Stage Approval				

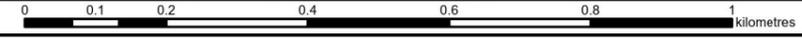
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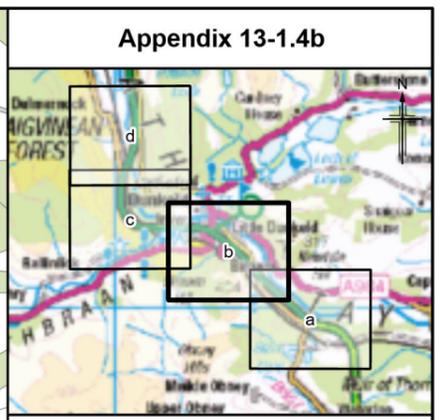
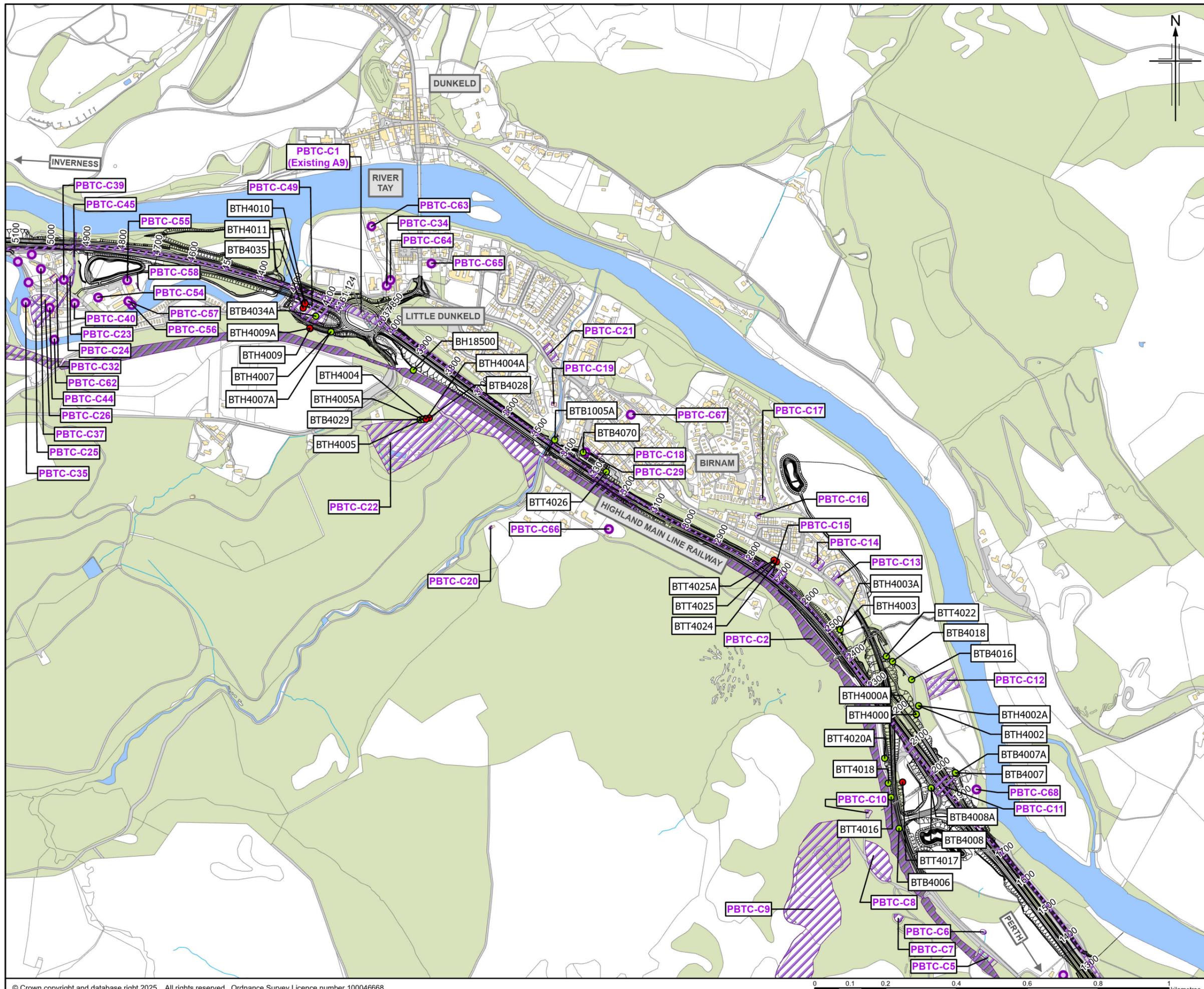


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Soil Leachate Resource Protection Value (RPV) Exceedances
 Sheet 1 of 4

Drawing Status	S4 - For Stage Approval
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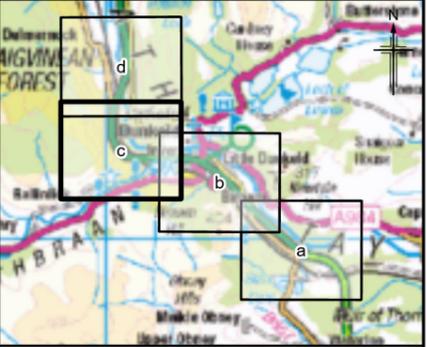
Project
A9
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 PASS OF BIRNAM
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Drawing title
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Soil Leachate Resource Protection
Value (RPV) Exceedances
 Sheet 2 of 4

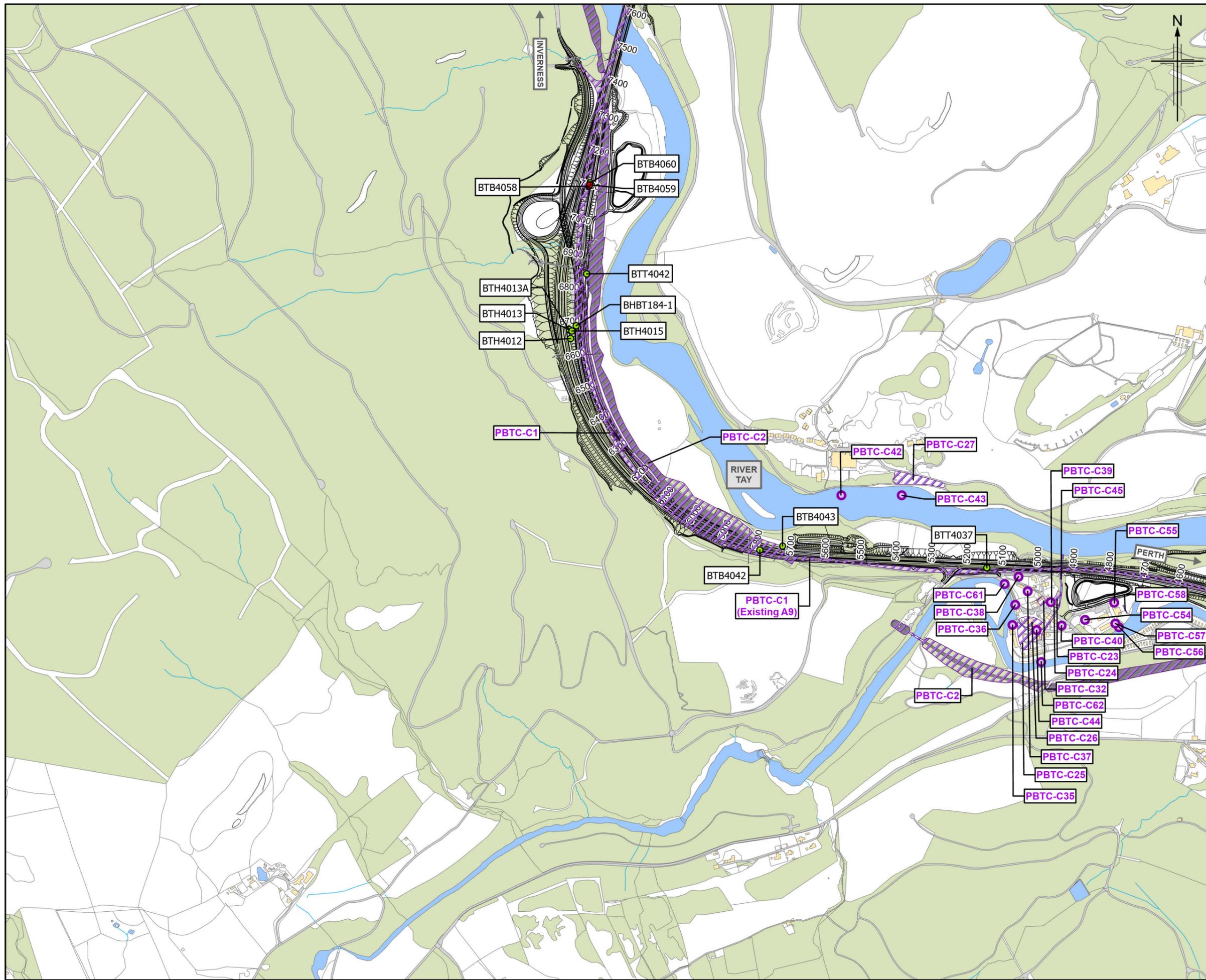
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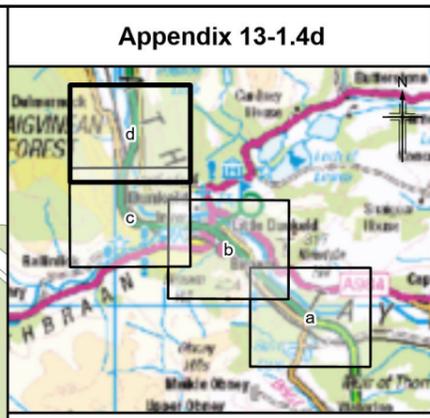
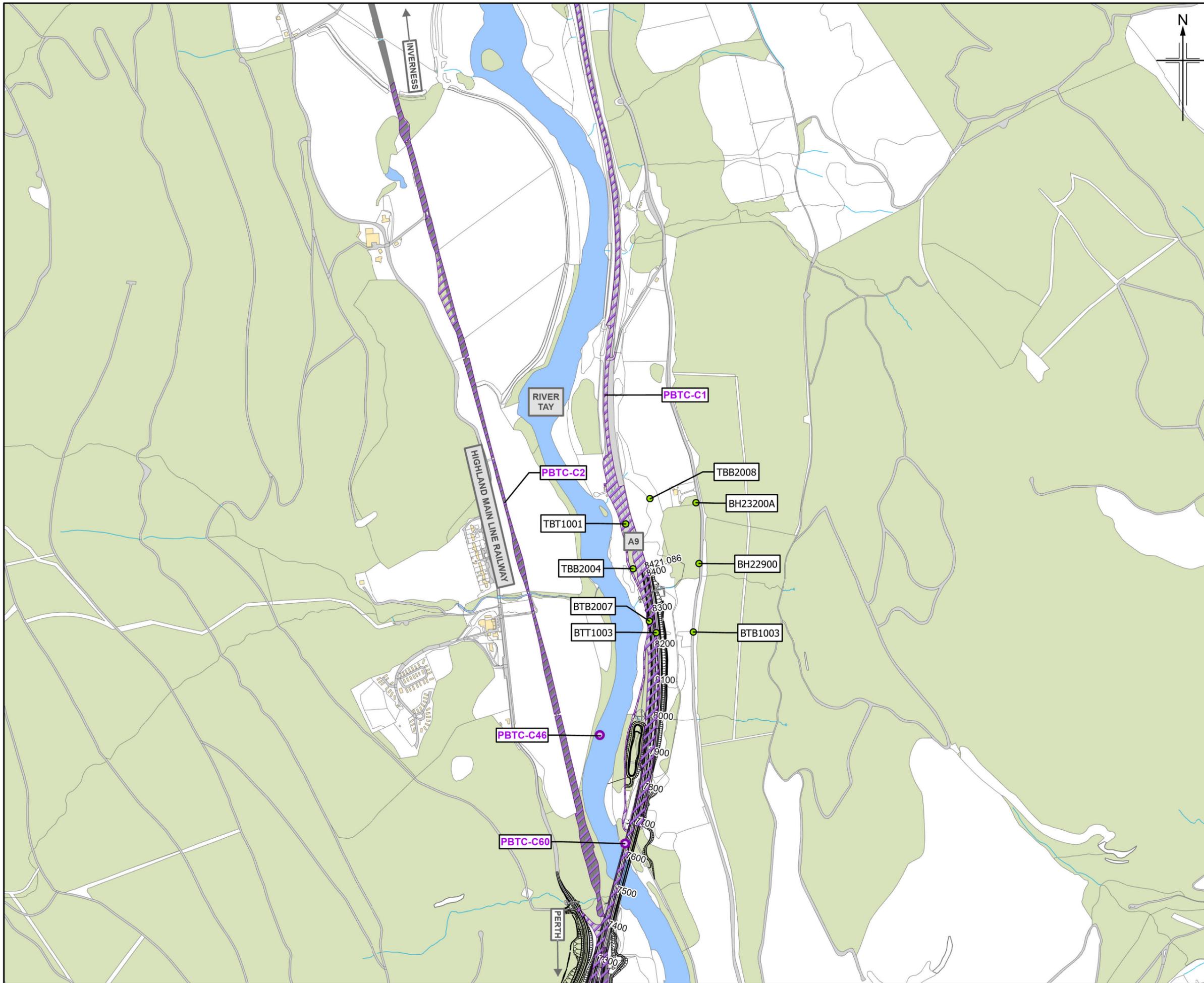


Environmental Impact Assessment Report
Soil Leachate Resource Protection
Value (RPV) Exceedances

Sheet 3 of 4

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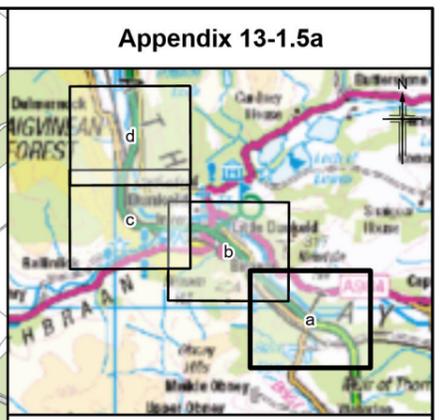
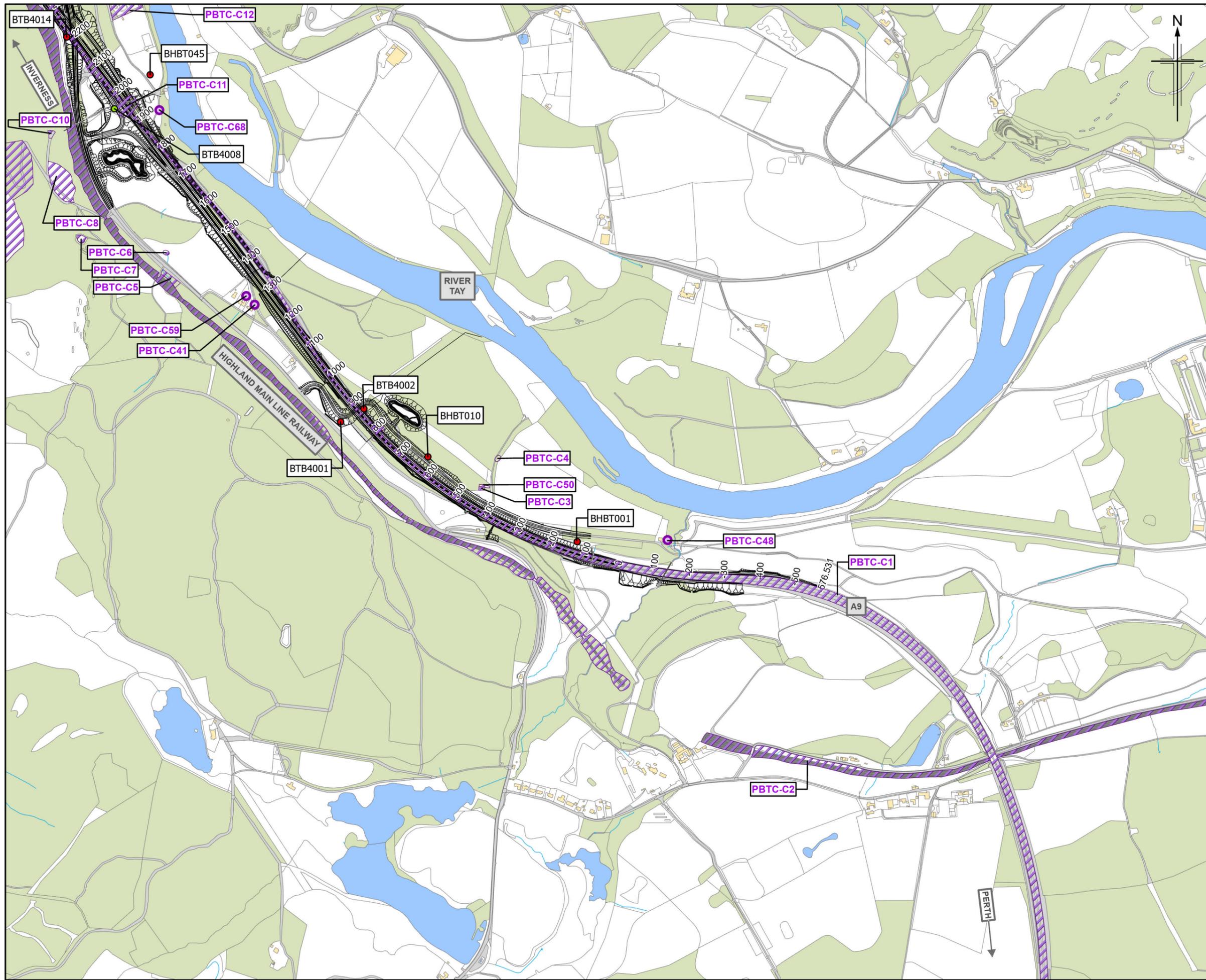
Project
A9
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Soil Leachate Resource Protection
Value (RPV) Exceedances
 Sheet 4 of 4

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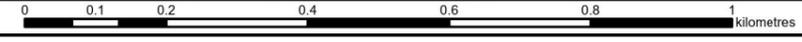
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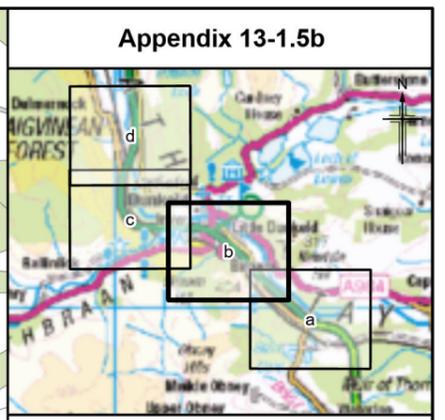
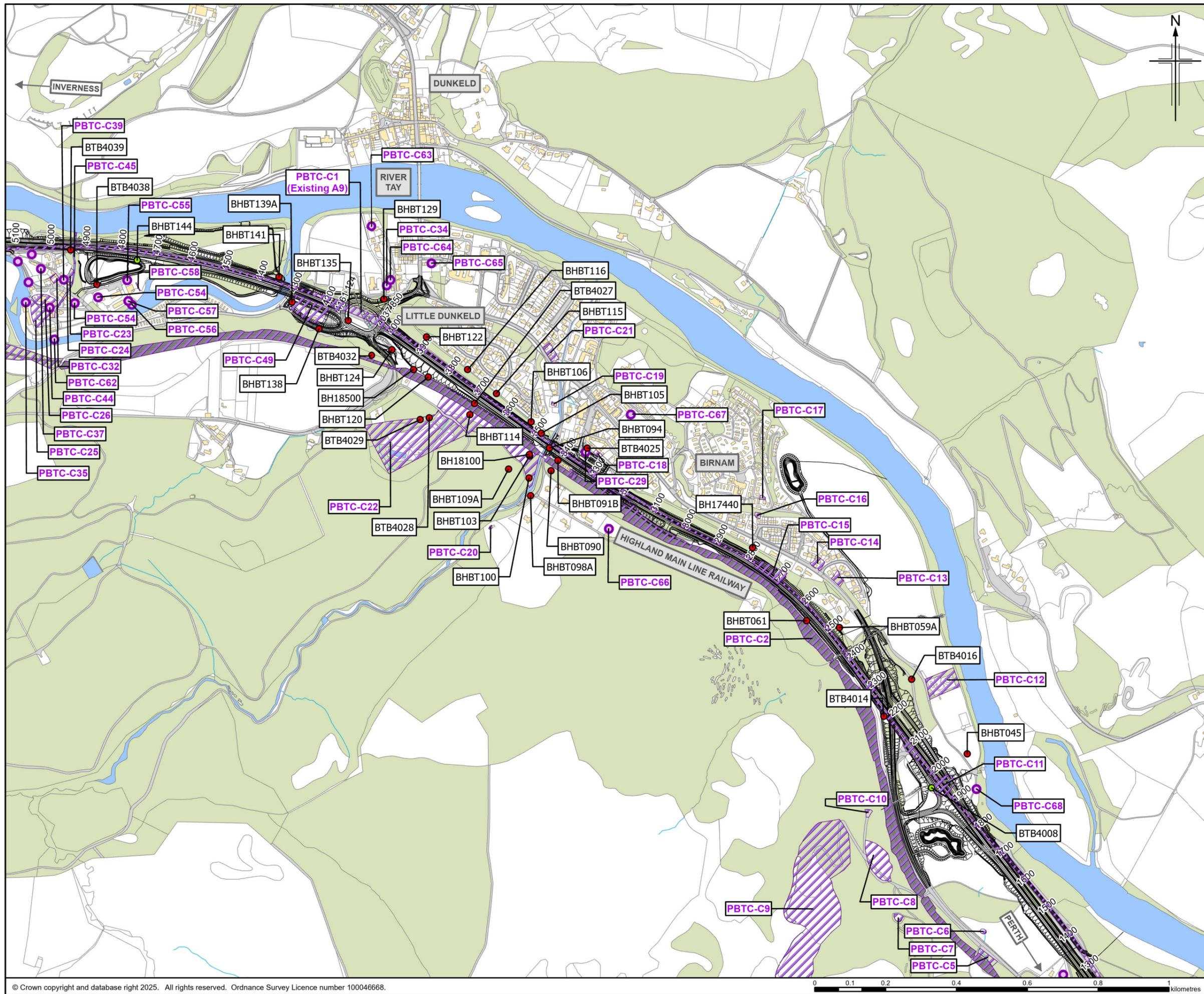


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Groundwater - Freshwater Environmental
Quality Standards (EQS) Exceedances
 Sheet 1 of 4

Drawing Status	S4 - For Stage Approval
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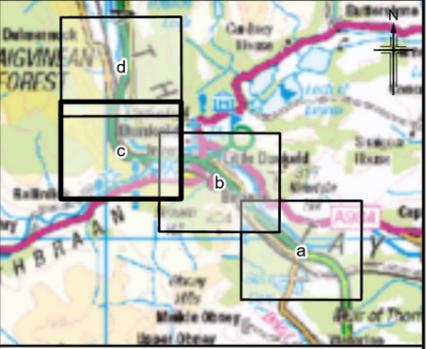
Project
A9
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 TO TAY CROSSING

Drawing title
Environmental Impact Assessment Report
Groundwater - Freshwater Environmental
Quality Standards (EQS) Exceedances
 Sheet 2 of 4

Drawing Status	S4 - For Stage Approval
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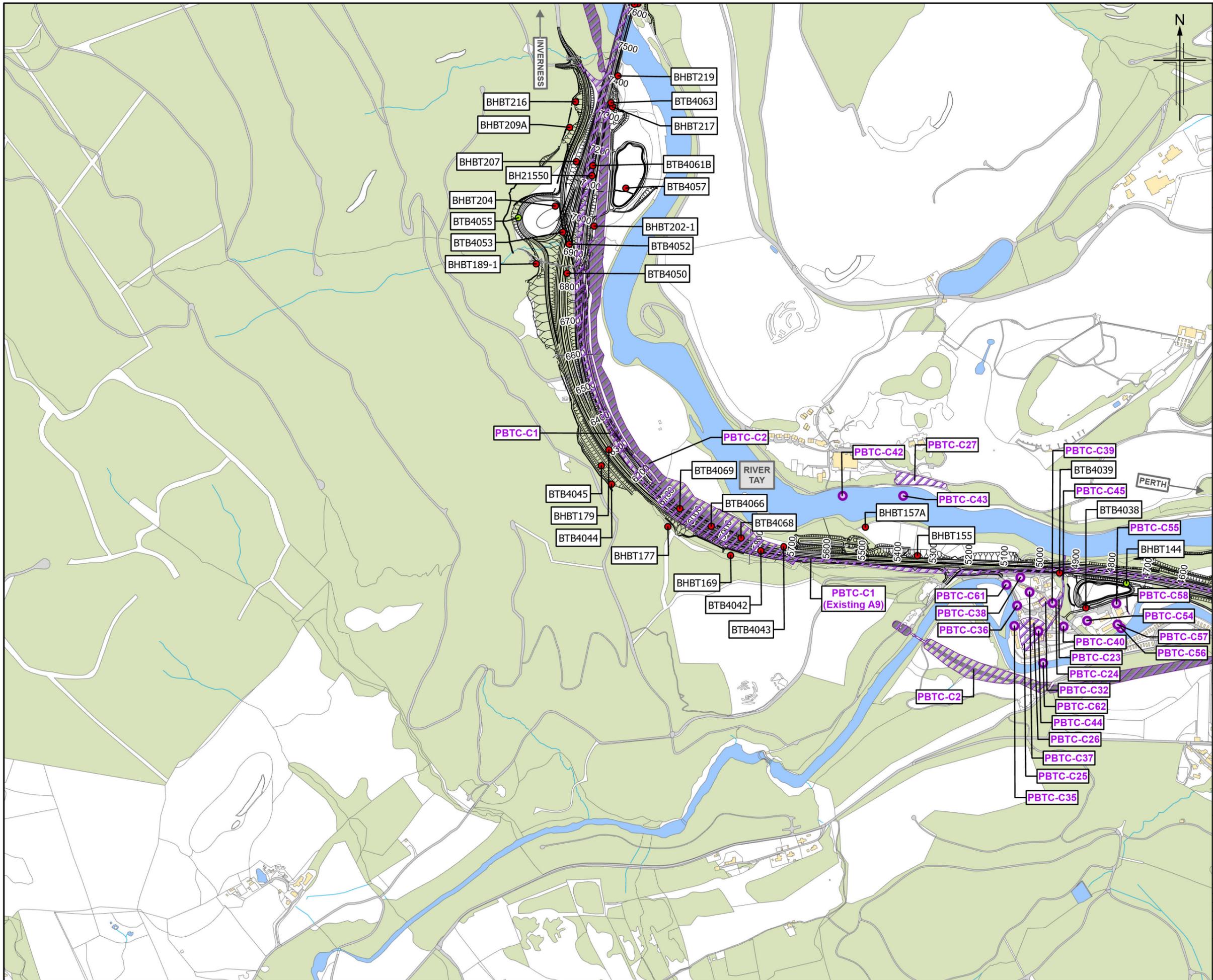
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Legend

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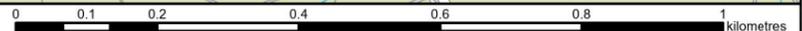
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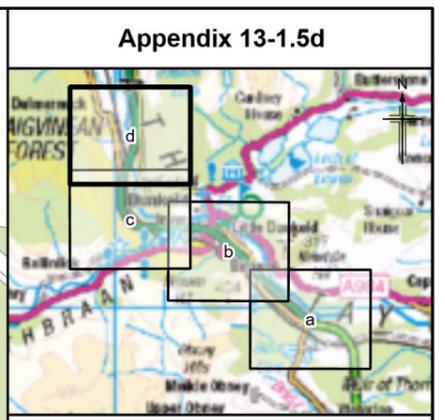
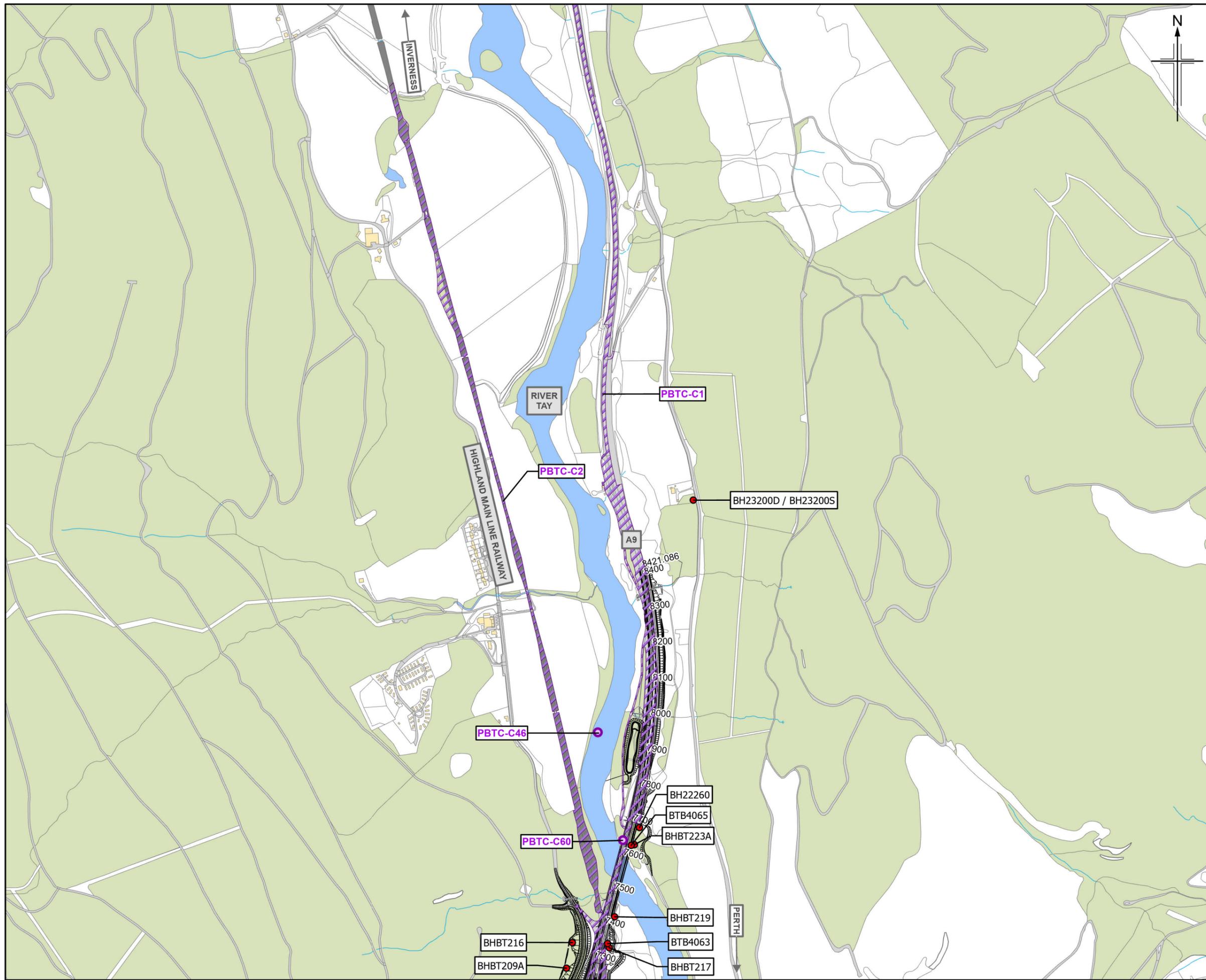
**Environmental Impact Assessment Report
 Groundwater - Freshwater Environmental
 Quality Standards (EQS) Exceedances**

Sheet 3 of 4

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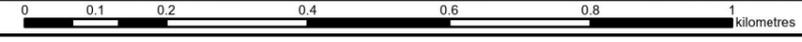
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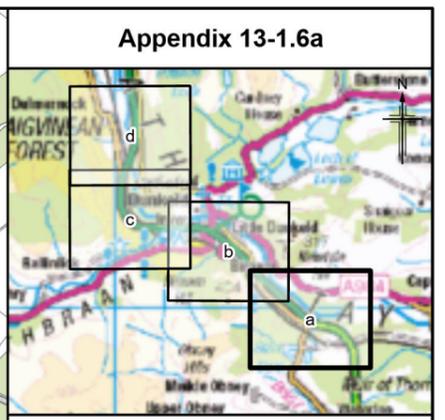
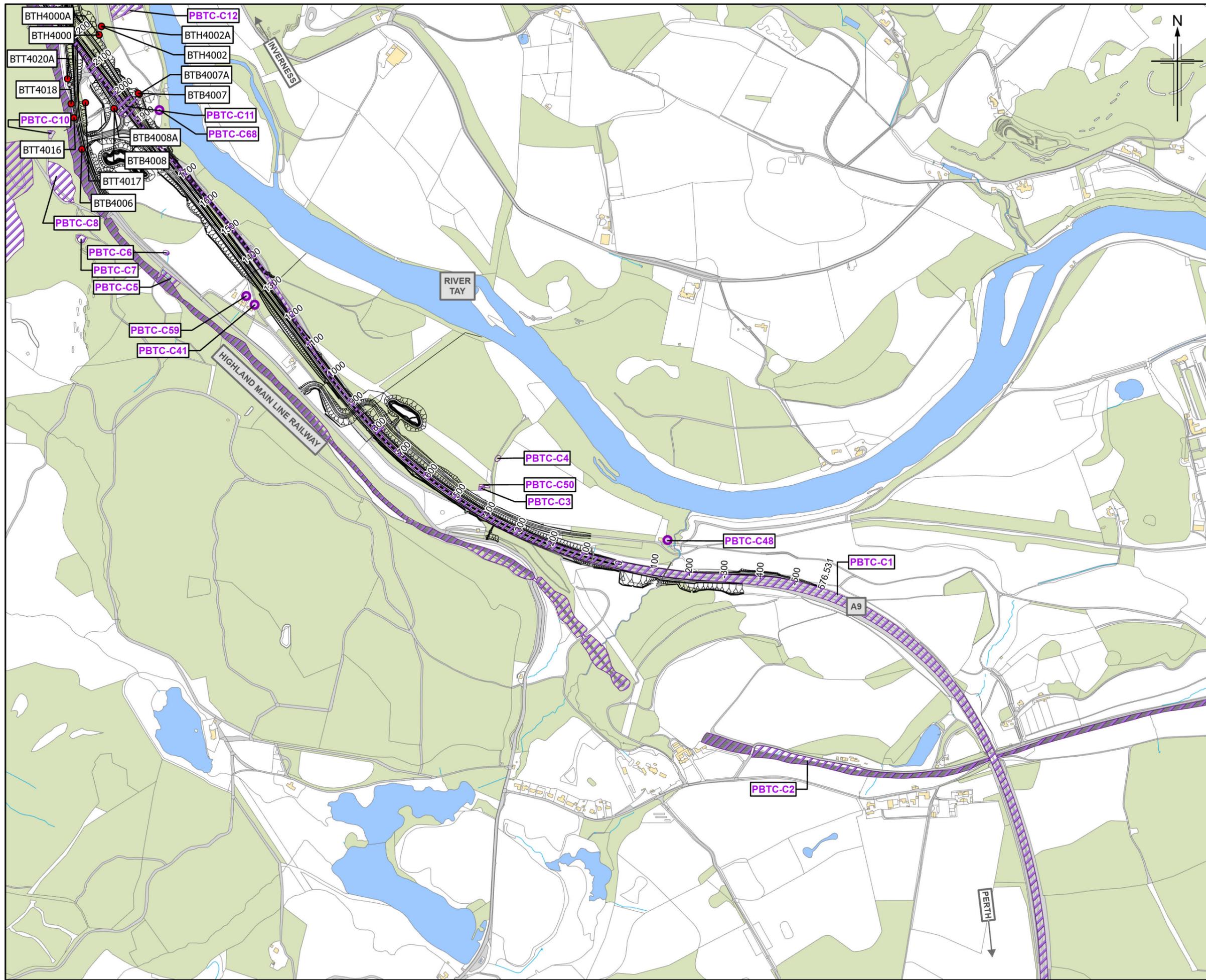
**Environmental Impact Assessment Report
 Groundwater - Freshwater Environmental
 Quality Standards (EQS) Exceedances**

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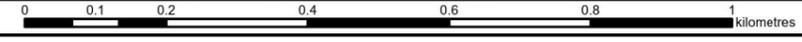
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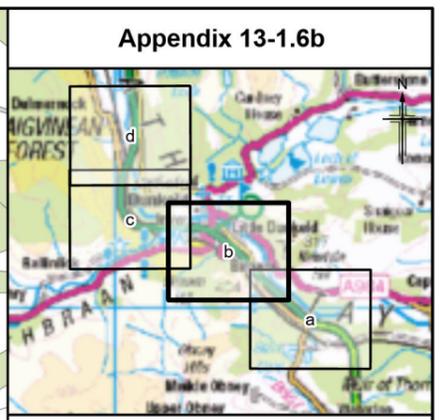
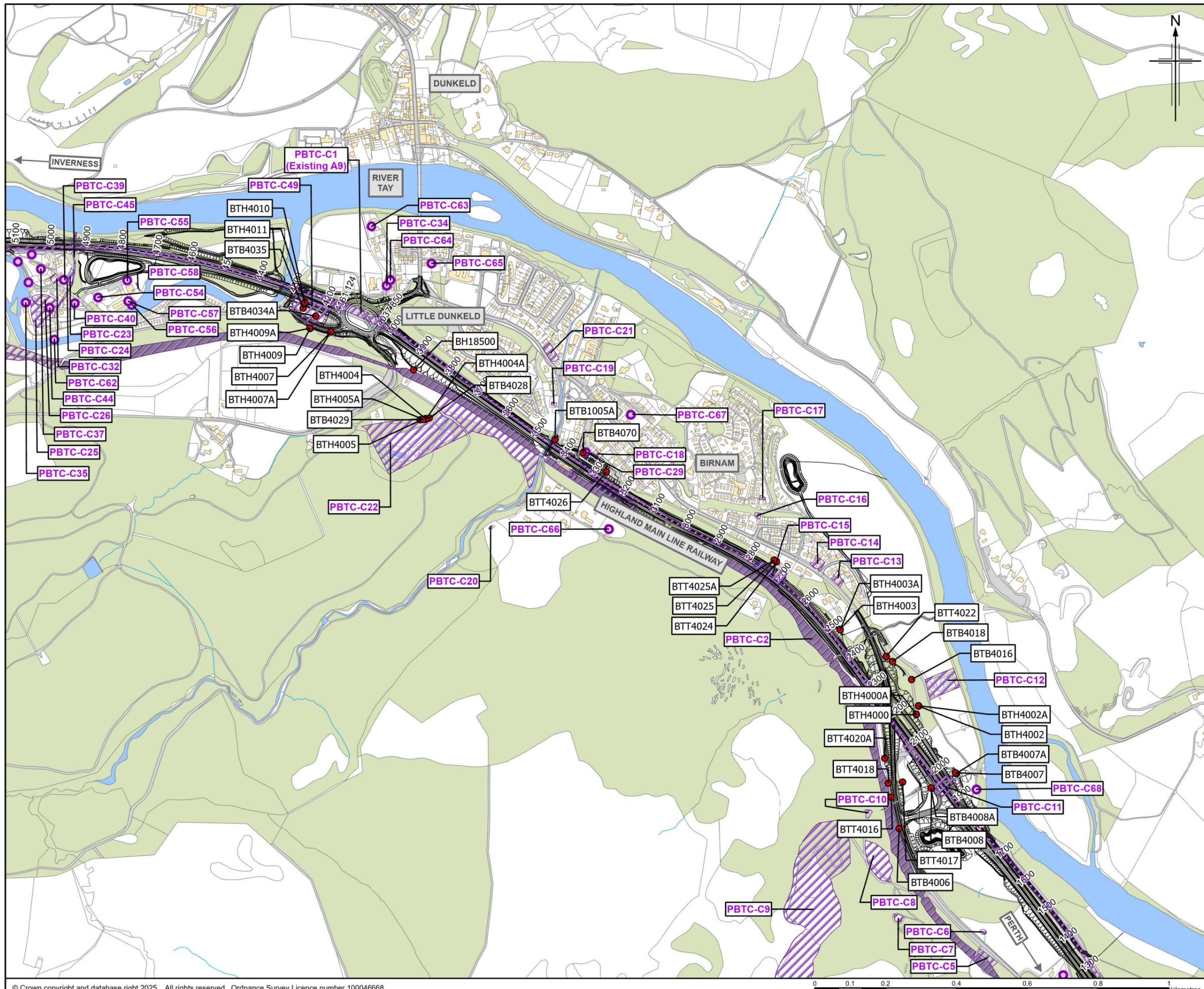
**Environmental Impact Assessment Report
 Soil Leachate - Freshwater Environmental
 Quality Standards (EQS) Exceedances**

Sheet 1 of 4

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Legend

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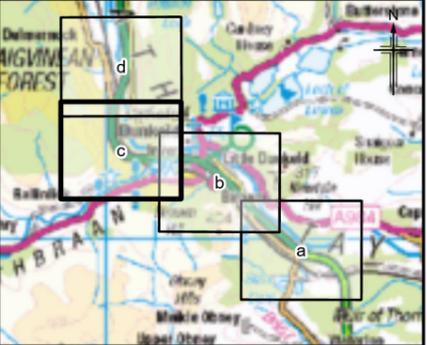
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Soil Leachate - Freshwater Environmental Quality Standards (EQS) Exceedances
 Sheet 2 of 4

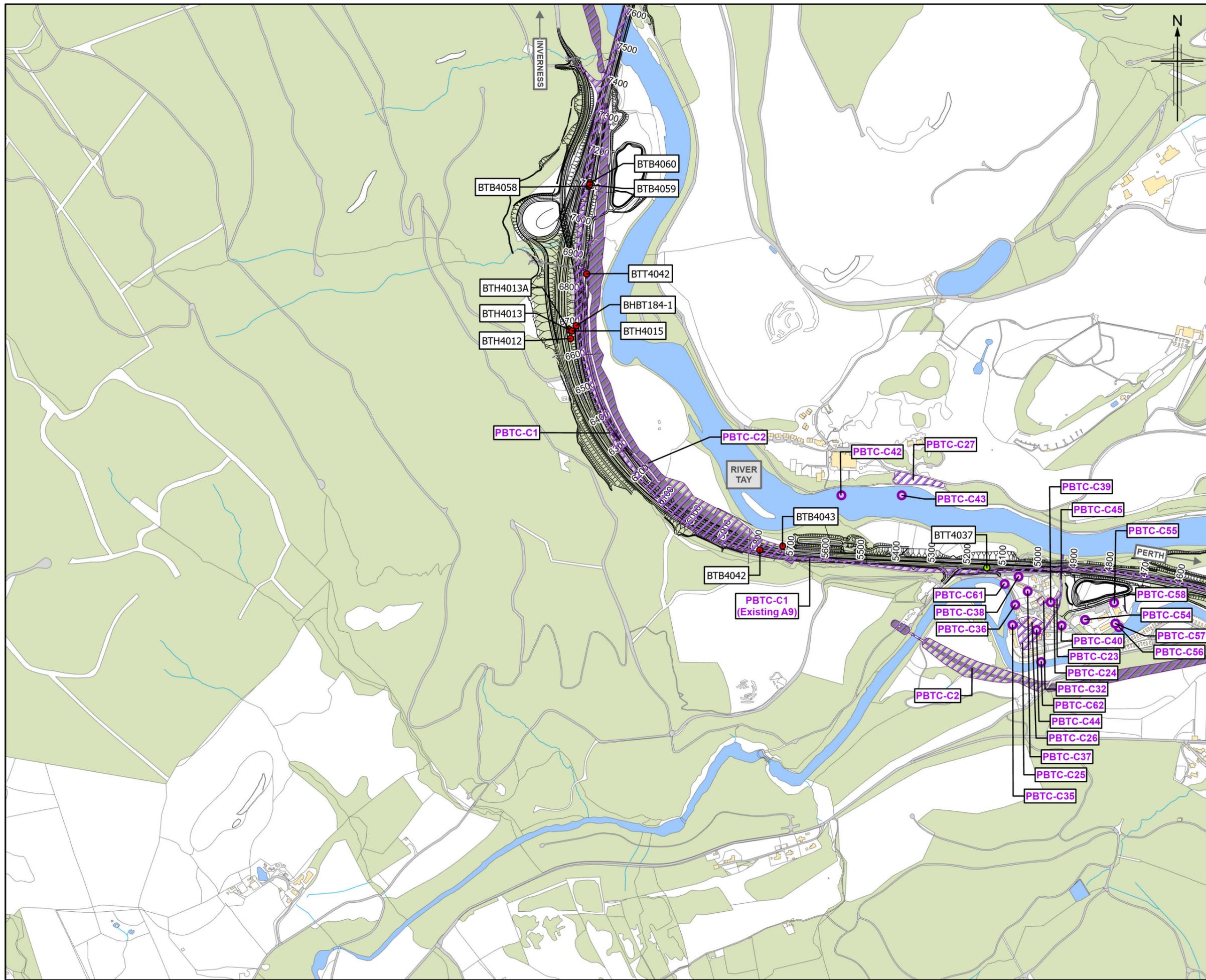
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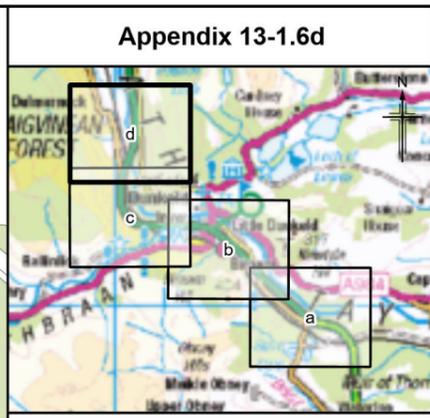
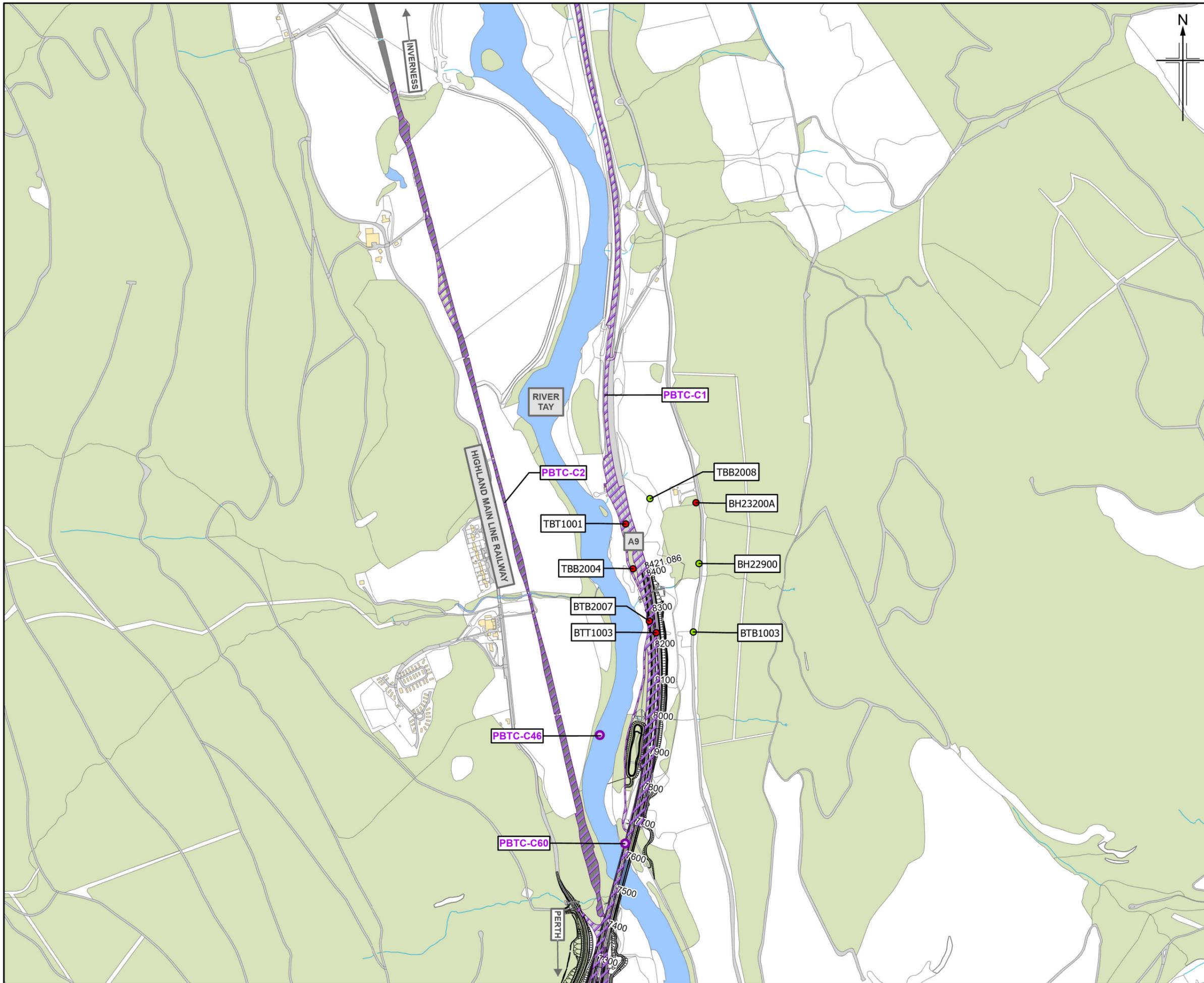


Environmental Impact Assessment Report
Soil Leachate - Freshwater Environmental Quality Standards (EQS) Exceedances
 Sheet 3 of 4

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 Sheet 4 of 4

Drawing Status	S4 - For Stage Approval	
Scale	1:10,000 @ A3	DO NOT SCALE
Jacobs No.	B2140002	
BIM No.		
Drawing number	Appendix 13-1.6d	Rev P03

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