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Appendix 9.2

Hydrology, Geology & Hydrogeology

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Glossary

Term	Definition
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of drawing together by the developer, in a systematic way, a description of the development and information relating to of the likely significant environmental effects arising from a proposed development
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 Regulation 5

Term	Definition
The Proposed Development	The Proposed Scawd Law Wind Farm development
The Proposed Development Area	The development area within the red line site boundary (application area) as shown in Volume 3a Figure 1.2: Site Layout.
Private water supply	Any water supply which is not provided by a water company and is not connected to mains supply. Most private water supplies are situated in more remote, rural parts of the country and may just serve one property or several properties through a network of pipes.

List of Abbreviations

Abbreviation	Description
BGS	British Geological Society
CEMP	Construction Environmental Management Plan
CIRIA	Construction Industry Research and Information Association
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
PWS	Private Water Supply
LUPS	Land Use Planning System
RAMS	Risk Assessment Method Statement
SBC	Scottish Borders Council
SEPA	Scottish Environment Protection Agency
WFD	Water Framework Directive

A9.2.1 PRIVATE WATER SUPPLY RISK ASSESSMENT

A9.2.1.1 A Private Water Supply Risk Assessment (PWSRA) has been carried out for water supplies that may be affected during the construction and operation of Scawd Law Wind Farm ("the Proposed Development").

A9.2.1.2 The Proposed Development is located to the north-east of Innerleithen approximately 3 km to the east of the B709 and 4 km north of the A72 in Scottish Borders (as shown in Figure 1.2 in Volume 3a). The Proposed Development will be in an upland area comprising a mix of heather moorland and rough, semi-improved grassland. The Proposed Development will consist of the erection, 35-year operation, and subsequent decommissioning of up to 8 wind turbines, with tip heights of 180 m. The Proposed Development includes associated turbine foundations and transformers, battery storage hardstanding areas for erecting cranes at each turbine location, new on-site tracks connecting each turbine, underground cables linking the turbines to the grid connection, an on-site substation, a control building, two construction compounds, and a borrow pit.

A9.2.1.3 The Proposed Development is situated within the Scottish Borders Council (SBC) council area. This document should be read in conjunction with Chapter 9 of the EIAR.

Scope

A9.2.1.4 This PWSRA forms a Technical Appendix to Chapter 9: Hydrology, Geology and Hydrogeology of the Scawd Law EIAR. The purpose of this assessment is to ascertain the potential risk to the identified private water supplies (PWS) within 3 km of the Proposed Development Area because of construction and operation of the Proposed Development. Where appropriate, the assessment will provide recommendations for potential mitigation measures. The assessment will adopt a phased approach evaluating risk through the formulation of a Source-Pathway-Receptor conceptual model.

Disclaimer

A9.2.1.5 This report has been prepared by Natural Power with all reasonable skill, care and diligence for the Client, for the specific purpose of assessing the risk to PWS posed from the construction and operation of the Proposed Development.

A9.2.1.6 This report details the findings of the risk assessment considering information provided by SBC, the relevant landowners and property residents and is therefore, as accurate as this information will allow. This document should be considered live and as such, changes will be made should new information come to light.

A9.2.1.7 Owing to the inherent complexity of the subsurface, it is rarely possible to determine the mechanics of a hydrogeological system with absolute certainty. In this regard, investigations as part of this assessment will determine the circumstance of each supply based on the evidence available to support this assessment.

A9.2.1.8 Whilst the assessment assesses relative risk, no detailed quantitative risk assessment has been completed.

Policy and Guidance Context

A9.2.1.9 The main legislative drivers, relevant to the assessment would be:

- The Water Framework Directive (WFD) (2000/60/EC):
  - The WFD aims to protect and enhance the quality of surface freshwater (including lakes, rivers and streams), groundwater, groundwater dependent ecosystems, estuaries and coastal waters.
  - The key objective of the WFD relevant to this assessment is to establish a framework of protection of surface freshwater and groundwater.
- The Groundwater Directive (80/68/EEC):
  - Historically, the most significant legislative instrument for protection of groundwater was the Groundwater Directive. The Groundwater Directive aims to protect groundwater from pollution by controlling discharges

and disposal of certain dangerous substances to groundwater. These substances were separated into two lists based on toxicity, persistence and potential for bioaccumulation and were categorised as either List I or List II, with the former considered to have great polluting potential.

  - Hazardous substances are the most toxic and must be prevented from entering groundwater. Substances in this list may be disposed of to the ground, under a permit, but must not reach groundwater. They include pesticides, sheep dip, solvents, hydrocarbons, mercury, cadmium and cyanide.
  - Non-hazardous pollutants are less dangerous, and can be discharged to groundwater under a permit, but must not cause pollution. Examples include sewage, trade effluent and most wastes. Non-hazardous pollutants include any substance capable of causing pollution and the list is much wider than the previous List 2 substances. For example, nitrate is included as a pollutant, but it was excluded from List 2 in the 1998 regulations.
- The Groundwater Daughter Directive (2006/118/EC):
  - Following the repeal of The Groundwater Directive (80/68/EEC) in 2013, the Groundwater Daughter Directive which is provided under the WFD enables controls to be exercised on the discharge of all pollutants both hazardous and non-hazardous.
  - As well as providing details on preventing and limiting pollution entering groundwater, the Groundwater Daughter Directive provides details on criteria for assessing good groundwater status and for identifying patterns and trends.
- The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017:
  - The regulations aim to ensure the provision of clean, safe drinking water and to deliver significant health benefits to those using Type A PWS; and
  - It is the responsibility of the local authorities to enforce and regulate PWS.
- The Private Water Supplies (Scotland) Regulations 2006:
  - The regulations aim to ensure the provision of clean, safe drinking water and to deliver significant health benefits to those using PWS (Type B supplies); and
  - It is the responsibility of the local authorities to enforce and regulate PWS.
- The Water Quality (Scotland) Regulations 2010:
  - These regulations relate to managing water quality failures on a PWS, attributable to the domestic distribution or its maintenance, in premises where water is supplied to the public.
- Scottish Environment Protection Agency (SEPA), Land Use Planning Guidance Note 31 (2017): Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems (GWDTE), Version 3:
  - SEPA LUPS 31 is a protective framework for groundwater abstractions and GWDTE being considered in EIAs, major and local planning applications and general consultations
  - The framework prescribes protective "buffers" or distances between groundwater receptors and construction activities requiring excavation:
    - For excavations >1 m in depth, a 250 m buffer applies.
    - For excavations <1m in depth, a 100 m buffer applies.
    - Where excavations are likely to occur within the specified buffer distances, qualitative/quantitative risk assessment must be undertaken. Where excavations occur outside the specified buffer distances, SEPA (as the Scottish Regulator) does not require detailed risk assessments to be undertaken.
- SEPA, Groundwater Protection Policy for Scotland, V3 (2009).
  - Provides a mechanism to protect groundwater quality by minimising the risks posed by point and diffuse sources of pollution and maintain the groundwater resource by authorisation abstractions and by influencing developments, which could affect groundwater quality.
  - Outlines the objectives for protecting groundwater related to specific activities and also describes the interaction of this measures with the planning system.

A9.2.1.10 Additional legislation and guidance related to good practice during the construction of onshore wind farms that has been considered in the preparation of this document is provided within Chapter 9: Hydrology, Geology and Hydrogeology of the Scawd Law Wind Farm EIAR.

Methodology

A9.2.1.11 The PWSRA has been undertaken based on the following methodology:

- Completion of a desktop assessment to put the hydrological and hydrogeological setting of the Proposed Development into context (available in Chapter 9: Hydrology, Geology and Hydrogeology of the EIAR);
- Contacting residents via the submission of a questionnaire to confirm the location and nature of their supply;
- Based on the information provided in response to the questionnaires, screening out of supplies that are considered unlikely to be affected by the Proposed Development;
- Preparing a risk assessment to determine the potential effects of the Proposed Development on the quality and quantity of the water serving the supply; and
- Identification of any additional measures, that should be included as part of the environmental documentation prepared by the contractors, to avoid and mitigate against any potential adverse effects resulting from the Proposed Development.

Desktop Assessment

A9.2.1.12 The desktop assessment was completed using the following secondary data sources:

- Geological[1] and hydrogeological[2] information obtained from The British Geological Survey;
- Monthly precipitation and climate data from The Met Office[3];
- Scotland's Environment[4] ; and
- SEPA – Water Classification Hub[5] .

A9.2.1.13 Details of the existing site conditions can be found detailed within Chapter 9: Hydrology, Geology and Hydrogeology of the EIAR.

Consultation

A9.2.1.14 Consultation with SBC was undertaken regarding the records held on PWS within a 3 km buffer of the Proposed Development Area. Following data returns, an initial screening was carried out to determine which properties

[1] BGS. 2021. https://mapapps2.bgs.ac.uk/geoindex/ (accessed13/10/2021)

[2] BGS. 2021. https://mapapps2.bgs.ac.uk/geoindex/ (accessed13/10/2021)

[3] Met Office http://www.metoffice.gov.uk/climate/uk/summaries (13/10/2021)

[4] Scotland's Environment https://www.environment.gov.scot/ (13/10/2021)

[5] Scottish Environment Protection Agency (2021), Water Classification Hub, https://www.sepa.org.uk/datavisualisation/water-classification-hub/ , accessed 13/10/2021

required direct consultation. This process involved sending residents a letter, questionnaire and map aiming to obtain information regarding their supply:

- The letter explained the nature of the works and the purpose of the assessment;
- The brief questionnaire asked residents to provide details on their supply;
- A map showing the location of the property was also included with residents asked to indicate the location of their supply; and
- The questionnaire also included asking permission for Natural Power to undertake an inspection should the risk assessment conclude a risk to the quality and/or quantity of water serving the supply.

Screening Assessment

A9.2.1.15 Following receipt of the information provided by the residents in their responses, a screening exercise was completed. This was based on the position of the provided PWS information in relation to the work areas associated with the Proposed Development.

A9.2.1.16 The screening exercise excluded properties where inconceivable hydrological or hydrogeological connectivity is likely to exist. These were determined through considering the following;

- Surface water catchment boundaries and channel networks;
- Aquifer properties;
- Properties of the underlying superficial and bedrock geology;
- Dominant land use; and
- Topographical considerations.

A9.2.1.17 If a response was not received, then professional judgement will be applied as to the type of supply and its possible position. This will be based on a review of the surrounding supply information and hydrological and hydrogeological conditions. Where little or no information is provided, a 'worst case scenario' approach has been adopted to provide a conservative assessment.

Risk Assessment

A9.2.1.18 A methodology for risk assessment of PWS is contained within the PWS Technical Manual[6] . Due to the nature of works being carried out at the Proposed Development, it is deemed impractical to use the methodologies set out in this guidance. When assessing supply compliance with the PWS regulations listed in paragraph A9.2.1.9, local authorities are required to consider factors, such as: proximity of the supply to cattle and wildlife, historical and current land use, and historical maintenance carried out on the supply. While such factors are useful for understanding the baseline qualities of a supply, they are inappropriate for determining the risk to the PWS during the construction and operation of the Proposed Development, which is based on the Source-Pathway-Receptor model.

A9.2.1.19 The methodologies set out are based on Natural Powers experience, however, the guidance has been utilised where possible, when trying to establish the varying factors which influence the baseline conditions of the supplies.

A9.2.1.20 The risk assessment considered the type of hazard associated with the project, release and exposure potential and severity of impact.

A9.2.1.21 The Source-Pathway-Receptor concept model was used as the underlying model to assess the risk posed by the development activities. In this model:

- Source refers to the source of the potential risk hazard (not to be confused with PWS source);
- Receptor refers to anything or anyone that could be adversely affected by the hazard (including the source of water supplying the abstraction and associated infrastructure); and
- Pathway refers to the mechanisms by which the hazard is transmitted to the receptor.

A9.2.1.22 Where hydraulic connectivity or linkage exists between a potential contamination source and the receptor by means of a pathway, then a pollutant linkage and associated risk exists. Where there is no pollutant linkage, there will be no associated risk.

A9.2.1.23 The hydrogeological "catchment areas" are likely to be similar to the surface water catchments and therefore bound by the same topographical restrictions. The methodologies for this qualitative assessment are based on a worst case scenario and try to determine the greatest possible impact the Proposed Development will have on the quality and quantity of water serving the supply. As the direction of groundwater flow cannot accurately be assessed without detailed site investigations, it is assumed that the groundwater is flowing in the direction to each supply abstraction.

A9.2.1.24 The risks to the hydrological and hydrogeological environment during construction vary based on the location of each abstraction and how it is fed i.e. groundwater spring, borehole or surface water abstractions. As a result, the assessment of risk of contamination to PWS due to activities associated with the Proposed Development works, will consider the following:

- Type of PWS and likely disruption potential;
- Distance from water abstraction and known supply infrastructure to the nearest point of construction associated with the Proposed Development; and
- Position of the abstraction in relation to the construction works in terms of topography and catchment influence zones.

A9.2.1.25 The risk assessment considers the type of hazard associated with the Proposed Development, the probability and magnitude of an impact occurring, based on topographical and hydrological relationships between the supply and construction activities, and the severity of such an impact based on a combination of the probability and magnitude values.

A9.2.1.26 It should be noted that all PWS are sensitive receptors due their susceptibility to change.

Significance Criteria

A9.2.1.27 The potential impact to PWS has been assessed in relation to the probability of an impact occurring on the receiving environment and the receiving environments sensitivity to change.

A9.2.1.28 The probability has been classified as high likelihood, likely, low likelihood or unlikely based on criteria outlined in Table . The likelihood of any impacts on the quality and quantity of water serving the PWS is influenced by the type of supply and its source abstraction location within the catchment in relation to construction activities.

Table 9.2.1: Probability of impacts

Probability	Definition
High Likelihood	• There is pollutant linkage and an event would appear 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 pollutant linkage and all the elements are present and in the right place 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 the long-term.

[6] Drinking Water Quality Regulator for Scotland, Technical Guidance and Information, https://dwqr.scot/private-supply/technical-information/pws-technical-manual/ (Accessed 13/05/2021)

Probability	Definition
Low Likelihood	• There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place and is less likely in the shorter term.
Unlikely	• There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

A9.2.1.29 As outlined above the potential impacts on the PWS have been assessed taking account of the type of supply and its distance from water abstraction to the nearest point of construction and the abstraction position in relation to topographic and catchment influence zones. The magnitude of potential change to that supply is defined below in Table 9.2.1.

Table 9.2.1: Magnitude of change to PWS

Probability	Definition
Major	• Major change to the hydrological/hydrogeological conditions resulting in temporary or permanent change. • Complete disruption to operation of supply, impacting on quality and quantity available, new resource to be identified.
Moderate	• Detectable change to the hydrological/hydrogeological conditions resulting in non-fundamental temporary or permanent change. • Partial disruption to the operation of the supply, impacting on quality and quantity. Potential new supply is required for a temporary period of time.
Minor	• Detectable but minor change to the hydrological/hydrogeological conditions. • Minor degradation in the operation of the supply in terms of quantity and or quality.
Insignificant	• No perceptible change to the hydrological/hydrogeological conditions.

Impact Significance Matrix

A9.2.1.30 The likelihood and magnitude of the potential impacts are combined to define the significance of the impact, as shown in Table . This table provides a guide to assist in the decision making but should not be considered a substitute for professional judgement and interpretation. In some circumstances, the magnitude of effects may be unclear and professional judgement remains the most effective manner for identifying the potential significance.

A9.2.1.31 The significance of the risk considers the successful implementation of the good practice environmental management practices that will be adopted throughout the works. Should the supply still be considered at risk, further details on specific mitigation and/or monitoring recommendations are provided.

Table 9.2.3: Combined risk

Probability of Impact	Severity of Impact			
	Major	Moderate	Minor	Insignificant
High Likelihood	Very High	High	Medium	Medium/ Low
Likely	High	Medium	Medium/ Low	Low
Low Likelihood	Medium	Medium/ Low	Low	Negligible
Unlikely	Medium/ Low	Low	Negligible	Negligible

A9.2.1.32 The risk categories are further defined in Table 9.2.2

Table 9.2.2: Risk definitions

Term	Definition
Very High	• There is a high probability that significant harm could arise to a designated receptor from an identified hazard at the site without appropriate mitigation.
High	• Significant harm is likely to arise to a designated receptor from an identified hazard at the site without appropriate mitigation.
Medium	• It is possible that without appropriate mitigation, harm could arise to a designated receptor, but it is relatively unlikely that any such harm would be severe and if any harm were to occur, it is likely that such harm would be relatively mild.
Low	• It is possible that significant harm could arise to a designated receptor from an identified hazard, but it is likely that at worst this harm if realised would normally be mild.
Negligible	• There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Desktop Assessment

A9.2.1.33 For a pollutant linkage to exist, sources, pathways and receptors must align in a manner that facilitates the transmission of a pollutant (or harm) to a receptor. The main impacts that can be imparted upon a PWS receptor is a degradation in water quality or a reduction in quantity.

A9.2.1.34 Information concerning the environmental setting of the Proposed Development and the surrounding area which contains the PWS is presented in Chapter 9: Hydrology, Geology and Hydrogeology of the EIAR. Based on the assessment, the following conceptualisation is presented that will be used to assess potential risks to PWS.

A9.2.1.35 The desktop assessment indicates the presence of two main groundwater systems; a shallow system that is largely dependent on surface water runoff and a deeper system heralding from the underlying bedrock. Shallow supplies may compromise catch pits and collection systems that obtain water over large areas which are topographically constrained. Supplies obtaining water from the underlying geology will be constrained by the nature and extent of tectonic features or fractures and be less constrained by topography. Under such circumstances, fractures will be a preferential flow pathway and may not conform to inferred surface water catchment areas. In the cases of the PWS considered, it is possible that recharge to abstraction points may be via a combination of both systems.

Consultation and Screening

A9.2.1.36 Seventy-nine properties were identified within 3 km of the Proposed Development Area. On 13th January 2021, a brief questionnaire was submitted to properties requesting them to provide details on their PWS and for Natural Power to inspect their supply if required. The resident of Holylee Estate responded on behalf of the other properties which share this supply (thirteen other properties on this supply were consulted). A response from Blackhopebyres Steading was also received.

A9.2.1.37 Given layout changes and iteration of the site design, the addition of the proposed access track to the west resulted in the property residents of The Common Farmhouse, The Common Bothy and Glentress being consulted.

A9.2.1.38 Table 9.2.3 provides a summary of the supplies with property and abstraction locations in relation to the Proposed Development provided in Appendix A.

A9.2.1.39 In summary:

- Properties which were in the vicinity or shared hydrological/hydrogeological catchment of the site and/or were upstream of proposed infrastructure were scoped in for consultation and were sent a questionnaire to gain further information from the property residents on their PWS;
- All of the identified PWS abstractions were situated outside the respective 100 m and 250 m SEPA LUPS 31 buffers;
- Two supplies (K (Holylee House) and AC (Colquhar Farm)) providing water to fifteen properties have been taken forward for assessment due the supply abstraction locations being located within the same hydrological catchment as the Proposed Development; and
- The remaining supplies were screened from further assessment as they are not within the same hydrological or hydrogeological catchment as the Proposed Development.

Table 9.2.3: PWS screening

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
1	The Common Farmhouse	NT 33495, 39527	A	Unknown, spring indicated on 1:25k OS mapping at NT 3789,39716	Groundwater - Spring(s)	0.8 km from proposed access track	No	• No response • PWS abstraction located within the Middle Burn catchment which is hydrologically unconnected to proposed infrastructure. The topographic ridges of Common Knowe (225 m), Turf Knowe, Priesthope Hill (549 m) and Torykneis separate the properties from the Proposed Development. • No further assessment required at this stage
2	The Common Bothy							
3	Station House	NT 41208, 36176	B	Unknown	Groundwater - Spring(s)	6.5 km from T5	No	• Not consulted • PWS separated from the Proposed Development by the A72. Part of River Tweed catchment. Tweed Valley Forest Park topographically separates properties from Proposed Development site boundary. • No further assessment is required.
4	Thornielee Railway Cottages (x4)							
5	Thornielee Cottage	NT 40692, 36374	C	Unknown, spring indicated on 1:25k OS mapping at NT 40766, 36606	Groundwater - Spring(s)	5.9 km to T5	No	• Not consulted • Part of River Tweed catchment. Tweed Valley Forest Park topographically separates PWS from Proposed Development site boundary. • No further assessment is required.
6	The Ley	NT 32943, 39962	D	Unknown	Groundwater - Spring(s)	0.65 km from proposed site access	No	• Not consulted • PWS separated from the Proposed Development by Leithen Water. PWS located within the Mousedean Burn catchment which is hydrologically unconnected to the Proposed Development. • No further assessment is required.
7	Thornylee Farmhouse	NT 41186, 36416	E	Unknown	Groundwater - Spring(s)	6.5 km to T5	No	• Not consulted • Part of River Tweed catchment. Tweed Valley Forest Park topographically separates PWS from Proposed Development site boundary. • No further assessment is required.
8	Thornylee Railway Cottages	NT 41558, 36429	F	Unknown	Groundwater - Spring(s)	6.5 km to T5	No	• Not consulted • Part of River Tweed catchment. Tweed Valley Forest Park topographically separates PWS from Proposed Development site boundary. • No further assessment is required.
9	Thornylee Station House							

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
10	Eilbank View	NT 41274, 36340	G	Unknown	Groundwater - Borehole	6.2 km to proposed track and T5	No	• Not consulted • Part of River Tweed catchment. Tweed Valley Forest Park topographically separates PWS from Proposed Development site boundary. • No further assessment is required.
11	1 Thornylee Barn							
12	2 Thornylee Barn							
13	Orchard House							
14	Farmhouse	NT 32818, 43018	H	Unknown	Groundwater - Spring(s)	2 km from proposed site access	No	• Not consulted • PWS abstraction located within the Whitehope Burn catchment which is hydrologically unconnected to the Proposed Development. The B709 and the Dodd Hill (427 m) separate the PWS from the Proposed Development. • No further assessment is required.
15	Whitehope Cottage							
16	Burnside							
17	Leithenhope Cottage							
18	Trously	NT 38399, 45931	I	Unknown	Groundwater - Spring(s)	3.2 km from T8	No	• Not consulted • PWS within Ewes Water catchment which is hydrologically unconnected to the Proposed Development. Deaf Heights (562 m) and Pringles Green (592 m) topographically separate the property from the Proposed Development. • No further assessment is required.
19	Glentress	NT 33917, 43068	J	NT 34260, 43112 (unconfirmed – based off SBC data)	Groundwater - Spring(s)	1.6 km from proposed site access	No	• No response • PWS abstraction located within the Glentress Burn catchment which is unlikely to be hydrologically connected to Proposed Development. • No further assessment required
20	Holylee House	NT 38934, 37619	K	Holding tank: NT 39274, 37761 Spring used in dry weather: NT 39361, 38040 Main spring: NT 33801, 38856 Minor spring 1 NT 38893, 39160 Minor spring 2 NT 39024, 39559	Groundwater - Spring(s)	Properties ~3.9 km from proposed track and T5 Source 0.7 km (one cottage supply) from T5 Holding Tank 4 km fromT5	No	• Holylee House (20) responded on behalf all properties on shared supply • Estate, Private Domestic Supply + Other Private Supply (e.g. livestock/agriculture) that supplies water to c. 15-20 properties. Spring source. Can be in short supply in long spells of dry weather. • Three of the four spring abstractions are located on the south eastern flanks of Stony Knowe, with a fourth abstraction and the holding tank located on the eastern slopes of Southerly Nick. These spring locations are unlikely to be hydologically connected to the Proposed Development • No further assessment required
21	Holylee Chauffeurs Cottage							
22	Holylee Garage Cottage							
23	The Lodge							
24	Dean Cottage							
25	1 Gatehope Knowe							
26	2 Gatehope Knowe							
27	1 Holylee Farm Cottages							
28	2 Holylee Farm Cottages							
29	3 Holylee Farm Cottages							

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
30	4 Holylee Farm Cottages							
31	5 Holylee Farm Cottages							
32	6 Holylee Farm Cottages							
33	7 Holylee Farm Cottages							
34	Holylee - Caberstongrains	NT 37632 40850	Ki	Spring abstraction - NT 37427 40953 Holding tank - NT 37452 40959	Groundwater - Spring	Abstraction is 0.6 km from T5	Yes	• Initial response from Holyee House (20) indicated that the abstraction for Caberstongrains was beyond the map provided as part of the questionnaire • Site verification was undertaken with locations of the abstraction and holding tank verified • Spring appears from the ground approximately 50 m uphill of the holding tank • Water drains naturally to the holding tank, which is covered by a concrete slab and wooden plank • Direction of inflow into the tank could not be verified • Water is piped into residence with sand filter providing the only form of treatment • Abstraction carried forward to assessment due to hydrological connectivity with infrastructure (T4 and T5) • Photologs of the site inspection are provided in Appendix B
35	Holylee - Seathope	NT 37721 40847	Kii	Unknown	Groundwater - Spring	Property is 0.9 km from T5	No	• Abstraction location could not be located during the site visit. However, communication with the residents of Caberstongrains indicated that the abstraction is located further up the valley of Seathope Rig • Spring abstraction is unlikely to be hydrologically connected to the Proposed Development • No further assessment required
36	Haughhead Farmhouse	NT 34198, 36623	L	Unknown	Surface - Watercourse	3.9 km from proposed site access	No	• Not consulted • PWS located within the Armour Burn catchment which is not hydrologically connected to the Proposed Development. PWS separated from the Proposed Development by the A72 and the River Tweed. • No further assessment is required.
37	Kirnie Cottage	NT 35019, 37354	M	Unknown	Groundwater - Spring(s)	3.4 km from T1	No	• Not consulted • PWS located within the Kirnie Lake catchment which is hydrologically unconnected to the Proposed Development. PWS separated from the Proposed Development by topographic highs of Kirnie Law (469 m) and Cairn Hill (499 m). • No further assessment is required.
38	Juniper Bank Farmhouse	NT 37617, 37392	N	Unknown	Surface - Watercourse	3.4 km from proposed track and T5	No	• Not consulted. • PWS separated from the Proposed Development by the A72 and the River Tweed and are hydrologically unconnected to Proposed Development. • No further assessment is required.
39	Woodlands Retreat							
40	1 Juniper Bank							
41	2 Juniper Bank							
42	Juniper Bank Steading							
43	Brentwood							

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
44	Cedarwood							
45	Laidlawstiel Farmhouse	NT 42200, 37467	O	Unknown	Groundwater - Spring(s)	6.4 km from T5	No	• Not consulted. • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
46	1 Laidlawstiel Cottages							
47	2 Laidlawstiel Cottages							
48	Laidlawstiel Cottage	NT 42171, 37111	P	Unknown	Groundwater - Spring(s)	6.5 km from T5	No	• Not consulted • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
49	Glenamoy							
50	The Lee Farmhouse	NT 32864, 39706	Q	Unknown	Groundwater - Spring(s)	0.9 km from proposed site access	No	• Not consulted • PWS separated from the proposed development by the A72 and Leithen Water and are hydrologically unconnected to the Proposed Development. • No further assessment is required.
51	Lee Cottage							
52	Laidlawstiel House	NT 42235, 36890	R	Unknown	Groundwater - Spring(s)	6.7 km from T5	No	• Not consulted • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
53	Laidlawstiel Garden Cottage							
54	Laidlawstiel Garage Cottage							
55	Old Caberston	NT 36919, 37708	S	NT 36874 37973	Groundwater - Spring	2.8 km from T1	No	• Abstraction located within the catchment of the Caberston Burn • PWS within unnamed tributary of the River Tweed and is hydrologically unconnected to Proposed Development. The topographic highs of Pyat Hill (286 m) and Cairn Hill (499 m) separate the PWS from the Proposed Development. • No further assessment is required.
56	Newhall Farmhouse	NT 42682, 37578	T	Unknown	Groundwater - Spring(s)	6.7 km from T5	No	• Not consulted • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
57	Scrogbank Cottage	NT 38364, 37479	U	Unknown	Surface - Watercourse	3.5 km proposed track and T5	No	• Not consulted • PWS separated from the Proposed Development by the A72 and the River Tweed and are hydrologically unconnected to Proposed Development. • Surface water abstraction is likely fed by the Scrogbank Burn catchment • No further assessment is required.
58	Peebles Road (Walkerburn)	NT 35612, 37301	V	Unknown	Groundwater - Well	3.8 km from T1	No	• Not consulted • PWS located within the River Tweed catchment and is hydrologically unconnected to the Proposed Development. PWS separated from the Proposed Development by topographic highs of Kirnie Law (469 m) and Cairn Hill (499 m). • No further assessment is required.

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
59	Blackhopebyres	NT 34388, 44038	W	Unknown	Groundwater - Spring(s)	2.4 km from proposed site access	No	• No response • PWS within the Blackhopebyre Burn catchment which is hydrologically unconnected to the Proposed Development. • No further assessment is required.
60	Blackhaugh Farmhouse	NT 42330, 38326	X	Unknown	Groundwater - Spring(s)	6 km from T5	No	• Not consulted • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
61	1 Blackhaugh Farm Cottages							
62	2 Blackhaugh Farm Cottages							
63	3 Blackhaugh Farm Cottages							
64	5 Blackhaugh Farm Cottages							
65	Schoolhouse, 4 Blackhaugh Farm Cottages							
66	Stantling Craigs	NT 43137 39787	Y	NT 42400, 39800 (unconfirmed – based off SBC data)	Surface - Watercourse	5.7 km from T5	No	• Not consulted • PWS is not within the same hydrological / hydrological catchment as the Proposed Development. • No further assessment is required.
67	Windydoors House							
68	Windydoors Lodge							
69	Windydoors Bungalow							
70	1 Windydoors							
71	2 Windydoors							
72	Gamekeepers Cottage, 3 Windydoors							
73	Blackhopebyres Steading	NT 34540, 44050	Z	NT 34388, 44125 (back lawn) and NT 34336, 44109 (garage abstraction)	Groundwater - Borehole	2.4 km from proposed site access	No	• Private Supply (Domestic). 2x Private Supply (1x GW Borehole, 1x watercourse abstraction for garage). No issues, filter and UV treatment. Supply is not shared. • PWSs within the Blackhopebyre Burn catchment which is hydrologically unconnected to the Proposed Development. • No further assessment is required.
74	Cedarwood	NT 37960, 37360	AA	Unknown	Groundwater - Borehole	3.5 km from proposed track and T5	No	• Not consulted • PWS separated from the Proposed Development by the A72 and the River Tweed and are hydrologically unconnected to Proposed Development. • No further assessment is required.

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
75	Caddonhead Farm	NT 40057, 41042	AB	Unknown	Surface - Watercourse	3.3 km from T5	No	• Not consulted • PWS is located within the Caddon Water which is hydrologically unconnected to the Proposed Development. Topographically separated from proposed infrastructure by Redscar Law (563 m), Miden Law (502 m) and Seathope Law (542 m). • No further assessment is required
76	Colquhar Farm	NT 33284, 41549	AC	NT 33380, 41415 (unconfirmed – based off SBC data)	Groundwater - Spring(s)	0.4 km from proposed site access	Yes	• No response. • Taken forward for detailed assessment given proximity to proposed access track and part of Hope Burn catchment.
77	Elibank Cottage	NT 39587, 36740	AD	NT 39381, 36500 (unconfirmed – based off SBC data)	Groundwater - Spring(s)	4.9 km from proposed track and T5	No	• Not consulted • PWS separated from the Proposed Development by the A72 and the River Tweed and are hydrologically unconnected to Proposed Development. • No further assessment is required.
78	Elibank House							
79	East Lodge Elibank							
80	West Lodge Elibank							
81	Elibank Bothy	NT 39838, 36213	AE	Unknown	Groundwater - Borehole	5.4 km from proposed track and T5	No	• Not consulted • PWS separated from the Proposed Development by the A72 and the River Tweed and are hydrologically unconnected to Proposed Development. • No further assessment is required.
82	Leithen Lodge Cottage	NT 32059, 42788	AF	Unknown	Groundwater – Spring	2.5 km from site entrance	No	• Not consulted • PWS located within the catchment of the March Burn, which is a tributary of the Leithen Water which is topographically distinct from the Proposed Development • PWS is not hydrologically connected to the Proposed Development • No further assessment is required.
83	Leithen Lodge	NT 32319, 42770	AG	NT 31832 42593 (unconfirmed – based off SBC data)	Surface - watercourse	2.5 km from site entrance	No	• Not consulted • PWS located within the catchment of the March Burn, which is a tributary of the Leithen Water, with the abstraction located on the north eastern slopes of Clog Knowe, which is topographically distinct from the Proposed Development • PWS is not hydrologically connected to the Proposed Development • No further assessment is required.
84	Glenormiston Farm	NT 30922, 38116	AH	Unknown	Groundwater – Spring	3.4 km from site entrance	No	• Not consulted • PWS located within the catchment of the River Tweed, with the abstraction likely located on the western slopes of Lee Pen, which is topographically distinct from the Proposed Development • PWS is not hydrologically connected to the Proposed Development • No further assessment is required.
85	Glenormiston Steading	NT 31581, 38048	AI	Unknown	Groundwater - Borehole	3 km from site entrance	No	• Not consulted • PWS located within the catchment of the River Tweed, with the abstraction located in the vicinity of the property. Borehole depth is unknown but water is likely being abstracted from deep bedrock

ID	Property Name	Grid Reference of Primary Property	Abstraction ID	Abstraction Grid Reference	Abstraction Type	Nearest Infrastructure to Property / Abstraction (if known) (km)	Taken Forward to Assessment	Comments
								• PWS is not hydrologically connected to the Proposed Development • No further assessment is required.
86	Glenormiston Farm Cottages	NT 31483, 38098	AJ	Unknown	Groundwater - Spring	3 km from site entrance	No	• Not consulted • PWS located within the catchment of the River Tweed, with the abstraction likely located on the wesetrn slopes of Lee Pen, which is topographically distinct from the Proposed Development • PWS is not hydrologically connected to the Proposed Development • No further assessment is required.
87	St Ronan's Well	NT 32911, 37220	AK	NT 32750 37340 (unconfirmed – based off SBC data)	Groundwater - Spring	3 km from site entrance	No	• Not consulted • PWS located within the catchment of the River Tweed, with the abstraction located on the southern slopes of Lee Pen, which is topographically distinct from the Proposed Development • PWS is not hydrologically connected to the Proposed Development • No further assessment is required.

Risk Assessment

A9.2.1.40 The nature of the potential risk to the PWS is either a reduction in volume or reduction in quality of the water feeding the supply. The purpose of this document is to provide an understanding of the PWS in the vicinity of the Proposed Development and the potential risk which construction may have on the quality and quantity of water serving the supply.

A9.2.1.41 Risk management techniques involve managing one or more of the components in the Source-Pathway-Receptor chain. Where practical, actual or potential pollutant linkages should be broken to eliminate the risk of a hazard impacting the receptor and where a residual risk remains, management controls and contingency arrangements should be implemented to minimise risks to an acceptable level.

Hazards

A9.2.1.42 Although the construction phase of the project is short term compared to the operational phase, the risk of pollution and damage to the water environment during this phase is very high, without appropriate mitigation.

A9.2.1.43 Rainfall increases the risk of pollution and damage to the surface and groundwater environment. Rainfall and associated surface water runoff during construction works can mobilise and transport pollutants such as sediment, oils, chemicals and other building materials into the surface and groundwater environment.

A9.2.1.44 The key hazards acting as potential sources of pollution were identified as activities undertaken during the construction and operation of the Proposed Development associated with:

- Excavation of the borrow pit;
- Construction and operation of tracks and hardstand areas;
- Turbine excavation; and
- Creation of site compounds and laydown areas.

A9.2.1.45 The completion of the construction elements listed above will require additional activities to be undertaken which may also lead to potential impacts, and these activities include:

- Surface water drainage and de-watering;
- Transport, storage and handling of fuels and oils;
- Use of machinery and plant;
- Wastewater management;
- Peat management; and
- Concrete works.

Standard Good Practice Mitigation

A9.2.1.46 Standard good practise mitigation should be followed as outlined below and in Chapter 9 of the EIAR. A Construction Environment Management Plan (CEMP) will be prepared post consent that evolves the mitigation presented in the following paragraphs and presented within the EIAR.

A9.2.1.47 The site-specific CEMP will facilitate the implementation of industry good practice measures in such a manner as to prevent or minimise effects on the surface and groundwater environment. The CEMP will include details on the following:

- Drainage – all runoff derived from construction activities and site infrastructure will not be allowed to directly enter the natural drainage network. All runoff will be adequately treated via a suitably designed drainage scheme with appropriate sediment and pollution management measures. The Development is situated in an upland hydrological area and it is imperative that the drainage infrastructure is designed to accommodate storm flows based on a 1 in 200 year event plus climate change to help maintain the existing hydrological regime.
- Storage – all equipment, materials and chemicals will be stored well away from any watercourses. Chemical, fuel and oil stores will be sited on impervious bases with a secured bund at a designated location.
- Vehicles and Refuelling – the delivery, storage, transfer, handling and use of hydrocarbons often presents one of the greatest hazards sources to PWS. In addition to the good practice guidance such as:

  - Construction Industry Research and Information Association (CIRIA), 'Environmental Good Practice On Site (C650) (2005);
  - CIRIA, 'Control of Water Pollution from Construction Sites (C532)' (2001); and.
  - Fuel management will be in adherence to relevant Pollution Prevention Guidance (PPG) and Guidance for Pollution Prevention (GPP) including re-fuelling (PPG7) and storage and disposal of waste oils (GPP8). In line with the measures above, measures for bulk delivery and transfer of oils and fuels will be carried out under supervision and designated personnel will be trained in spill response measures.
- Standing machinery will have drip trays placed underneath to prevent oil and fuel leaks causing pollution. Refuelling of vehicles, plant and machinery on the site will be carried out only in designated locations (which will be notified in writing to the planning authority and SEPA and may include, but need not be limited to, the construction compound) and in such a way that any spillage is contained within impermeable surfaces, and any fuel or water from such surfaces will be removed from the site and disposed of at an approved facility.
- Maintenance – maintenance to construction plant will be carried out in designated zones, on an impermeable surface well away from any watercourse or drainage, unless vehicles have broken down necessitating maintenance at the point of breakdown, where special precautions will be taken.
- Welfare Facilities – on-site welfare facilities will be adequately designed and maintained to allow the appropriate disposal of sewage. This may take the form of an on-site septic tank with soakaway, or tankering and off-site disposal depending on the suitability of the Proposed Development for a soakaway. Any discharge requirements will comply with relevant requirements issued by SEPA under the Water Environment (Controlled Activities) (Scotland) Regulations 2011.
- Cement and Concrete – fresh concrete and cement are very alkaline and corrosive and can be lethal to aquatic life. The use of wet concrete in and around watercourses will be avoided and carefully controlled;
- Monitoring Plan – All activities undertaken as part of the Development will be monitored throughout the construction phase to monitor environmental compliance.
- During the construction phase the Environmental Clerk of Works (ECoW) will carry out regular visual inspections of all receiving watercourses in conjunction with reviewing environmental mitigation controls. As a minimum, the following elements will be included in this programme:
  - Watercourses below working areas;
  - Surface water and sedimentation run-off mitigation;
  - Materials storage (fuels, oils, chemicals);
  - Contingency controls;
  - Waste management;
  - Management controls;
  - Compliance assessments (CEMP, Pollution Prevention Plan (PPP), Risk Assessment Method Statement (RAMS) etc.);
  - Emergency response and incidents; and
  - Environmental issues (litter, dust, noise etc.).
- Spill Response – a site specific Emergency Response Plan will be implemented in the unlikely event of a spill or other pollution incident. Spill kits and response materials will be available within the identified high-risk vehicles and plant working within water supply catchments and at designated locations across the construction site where hazardous materials are stored. The locations of key spill kit supply stores will be marked on a site location plan included within key documentation, which should also include a specific spill response procedure.
- Training – All relevant staff personnel will be trained in both normal operating and emergency procedures and be made aware of highly sensitive areas on site.

Specific Mitigation Recommendation

Holylee - Caberstongrains (abstraction ID Ki)

A9.2.1.48 The Holylee Estate is served by multiple groundwater spring abstractions that are generally located in a separate catchment from the Proposed Development infrastructure.

A9.2.1.49 Three of the five spring abstractions are located on the south-eastern flanks of Stony Knowe, with a fourth abstraction and the holding tank located on the eastern slopes of Southerly Nick. As there is likely to be no hydrogeological connectivity with the Proposed Development, no specific mitigation is required to protect the quality, quantity and continuity of water to these abstractions.

A9.2.1.50 With regards to the most northerly abstraction for Caberstongrains, which is located within the catchment of proposed infrastructure, further investigation and assessment is recommended to characterise the underlying groundwater system. This would be best achieved through intrusive ground investigation, which can be undertaken as part of the detailed design prior to construction and will help determine the likely catchment of the supply as well the structures supplying water to the abstraction.

A9.2.1.51 The investigation should initially focus on T4 and T5 as well as the associated access track, with the intention that the risk assessment and mitigation requirements are refined once further details on the groundwater system is characterised.

A9.2.1.52 The scope of the investigation should determine the possibility for changes in water quality and flow reduction at the abstraction because of the construction and operation of the Proposed Development.

A9.2.1.53 The further investigation would be used to design appropriate mitigation (if required). The following additional mitigation will be considered;

- Design of detailed drainage plans and specific method statements for dewatering activities to encourage infiltration;
- Appropriate design of drainage system for access tracks and other infrastructure that encourages infiltration of discharged and treated runoff;
- No storage of fuels/oils/chemicals within the vicinity of T4 and T5. This should include refuelling activities;
- A programme of water quality and quantity monitoring will be developed to monitor this supply (as well as borehole monitoring, to be installed during the further investigation); and
- Monitoring and management measures (including contingency) to be detailed and agreed with SEPA and SBC prior to construction and be based on the results of further investigation.

Colquhar Farm (abstraction AC)

A9.2.1.54 According to the SBC records, the farm is served by a groundwater spring, further investigations will be undertaken to verify the source location and to characterise the underlying groundwater system. The assessment will determine the possibility for changes in water quality and flow reduction at the abstraction because of the construction and operation of the access track.

A9.2.1.55 The further investigation will be used to design appropriate mitigation (if required). The following additional mitigation is considered;

- Demarcating abstraction location with appropriate exclusion zone;
- Appropriate design of drainage system that encourages infiltration of discharged and treated runoff from the access track;
- No storage of fuels / oils / chemicals along the track and this should include refuelling activities;

- A programme of water quality and quantity monitoring will be developed to monitor this supply; and
- Monitoring and management measures (including contingency) to be detailed and agreed with SEPA and SBC prior to construction and be based on the results of further investigation.

PWS Monitoring Plan

A9.2.1.56 Prior to construction a PWS Monitoring Plan and Method Statement (PWSMP) will be prepared detailing all mitigation measures to be delivered to secure the quality, quantity and continuity of water supplies to the Holylee – Caberstongrains and the Colquhar Farm properties which may be affected by the Proposed Development.

A9.2.1.57 A water level and quality monitoring programme will be undertaken prior to any construction and during construction. The method statement shall include water quality sampling methods and shall specify abstraction points.

A9.2.1.58 The PWS water monitoring programme will be aligned with the CEMP including wider surface water or groundwater monitoring programme related to the site development, i.e. sampling, frequency, and analysis suite (with exception to taste) are matched at the surface water monitoring locations. The document would also outline any site-specific additional mitigation outlined in this assessment relevant to each PWS.

A9.2.1.59 The PWSMP will also include a pollution response plan and contingency measures that would details responsibilities and lines of communication between Construction Contractors, PWS Users and other stakeholders. Contingency measures will include provisions to provide alternative water supplies on a temporary and permanent basis in the event of an unforeseen impact on the existing PWS arising from the construction and operation of the Proposed Development.

A9.2.1.60 The PWSMP will be secured by condition to be imposed on a deemed planning consent.

Risk Assessment Results

A9.2.1.61 This section details the results of the risk assessment based on the methodology presented in paragraphs A9.2.1.11 to A9.2.1.32. Table details the potential risks considering the good practice mitigation and specific mitigation outlined in paragraphs A9.2.1.46 to A9.2.1.59, respectively as well as the construction management measures provided within Chapter 9 of the EIAR.

Table 9.2.6: Risk assessment results

Hazard Identification	Receptor	Likelihood of Impact	Magnitude of Impact	Significance of Impact	Additional Mitigation	Revised Likelihood (L) & Magnitude (M)	Residual Significance
Holylee - Caberstongrains Supply (Ki)							
Activities affecting water quality	Surface water/ Shallow groundwater source of water serving PWS	High Likelihood	Moderate	High	Yes (as above)	Unlikely (L) Moderate (M)	Low
	Water sources from structural features serving PWS	Likely	Moderate	Medium	Yes (as above)	Low likelihood (L) Moderate (M)	Medium/ Low
	Pipework delivering water from PWS to Property	Unlikely	Insignificant	Negligible	None	-	-
Colquhar Farm (AC)							
Activities affecting water quality	Surface water/ Shallow groundwater source of water serving PWS	Likely	Moderate	Medium	Yes (as above)	Unlikely (L) Minor (M)	Negligible
	Water sources from structural features serving PWS	Low Likelihood	Moderate	Medium/Low	Yes (as above)	Low Likelihood (L) Minor (M)	Low
	Pipework delivering water from PWS to Property	Unlikely	Insignificant	Negligible	None	-	-
Activities affecting water quality	Surface water/ Shallow groundwater source of	Likely	Moderate	Medium	Yes (as above)	Unlikely (L) Minor (M)	Negligible

Hazard Identification	Receptor	Likelihood of Impact	Magnitude of Impact	Significance of Impact	Additional Mitigation	Revised Likelihood (L) & Magnitude (M)	Residual Significance
	water serving PWS						
	Water sources from structural features serving PWS	Low Likelihood	Moderate	Medium/Low	Yes (as above)	Low Likelihood (L) Minor (M)	Low
	Pipework delivering water from PWS to Property	Unlikely	Insignificant	Negligible	None	-	-

Conclusions

A9.2.1.62 A PWSRA has been carried out for PWS that may be affected during the construction and operation of the Proposed Development. The formation of this report has included a desk review of baseline information as well as data returns provided by SBC on identified PWS within a 3 km buffer of the Proposed Development Area and consultation with selected residents and OS mapping data.

A9.2.1.63 The risk assessment was undertaken using the Source-Pathway-Receptor model to establish the likelihood of a potential pollutant linkage existing between the Proposed Development and the supply of the identified PWS. Factors taken into consideration in the risk assessment include the proximity of the Proposed Development to the PWS source, layout of PWS infrastructure and pipework, the type of works being undertaken, the likely presence of pathways between the development and the source, the local topographic conditions and the underlying geology.

A9.2.1.64 The PWS has been evaluated based on the information provided to determine the risks based on the prescribed matrix scenarios. To minimise the risk of the Proposed Development construction activities potentially impacting any PWS supply, mitigation measures have been outlined which will be implemented by the appointed contractor.

A9.2.1.65 Standard good practice mitigation has been outlined in Section 5 of this assessment and will be included within a CEMP which will be prepared prior to construction. In addition to this mitigation, a Private Water Supply PWS Monitoring Plan and Method Statement will be prepared prior to construction and will detail all relevant mitigation, management measures, monitoring requirements and contingency plans relevant to PWS considered within this assessment and those listed in Chapter 9 of the EIAR. This includes supply protection measures required for one of the Holylee Estate abstractions and for Colquhar Farm.

A9.2.1.66 The qualitative assessment has identified uncertainty in the risk assessment associated with the potential influence of structural features within the bedrock to transmit hazards associated with the Proposed Development to PWS. Further investigation will be undertaken as part of the pre commencement detailed design process to determine the potential risk more accurately for a pollutant linkage to exist between these PWS and the Proposed Development infrastructure via this pathway. The results of the investigation will identify the detailed requirement for any mitigation.