Scottish & Southern Electricity Networks

TRANSMISSION

Environmental Appraisal Report

Volume 3 Appendix 9.1: Private Water Supply Risk Assessment (PWSRA)

Netherton Hub 400 kV OHL Connection to New Deer and Peterhead: Tie-In

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1. INTRODUCTION

1.1 Overview

1.1.1 A Private Water Supply Risk Assessment (PWSRA) has been conducted for water supplies that may be affected during the construction and operation of the 'Tie-In' section of the New Deer to Peterhead Overhead Line ('the Proposed Development'). The Proposed Development is located in Aberdeenshire near New Deer, as shown on **Figure 1.1: Site Location Plan (Volume 2)** and described in **Chapter 2: Description of Proposed Development (Volume 1)** of the Environmental Appraisal Report (EAR). The Proposed Development is situated within the Aberdeenshire Council (AC) local authority area. This appendix should be read in conjunction with **Chapter 9: Hydrology, Hydrogeology, Geology and Soils (Volume 1)** of the EAR and Private Water Supply (PWS) locations are shown in **Figure 9.4: Private Water Supplies (Volume 2)**.

1.2 Scope

1.2.1 The purpose of this assessment is to ascertain the potential risk to the identified PWS within 1 km from the Limit of Deviation (LoD) (hereafter referred to as the 'Study Area'), as these could potentially be affected due to construction and / or operation of the Proposed Development. The assessment adopts a phased approach to evaluate risk through the formulation of a Source-Pathway-Receptor (SPR) conceptual model. Where appropriate, the assessment provides recommendations for potential mitigation measures.

1.2.2 The PWSRA also identifies any groundwater abstractions and where necessary provides a qualitative Risk Assessment, in accordance with the Scottish Environment Protection Agency (SEPA) (2024): Guidance on Assessing the Impacts of Development on Groundwater Abstractions[1].

1.3 Legislation, Policy, and Guidance

1.3.1 Legislation, policy, and guidance relating to good practice during the construction of the Proposed Development, considered in the preparation of this document is outlined in **Chapter 9: Hydrology, Hydrogeology, Geology and Soils (Volume 1)**.

[1] SEPA, (2024). Guidance on Assessing the Impacts of Development on Groundwater Abstractions. Available at: guidance-on-assessing-the-impacts-of-developments-on-groundwater-abstractions.docx [Accessed March 2026].

2. METHODOLOGY

2.1 Overview

2.1.1 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, Hydrogeology, Geology and Soils (Volume 1)** of the EAR) including the development of a site-specific Conceptual Site Model (CSM);
- A review of Ordnance Survey (OS) mapping and available aerial imagery to identify any potentially unregistered PWS;
- Consultation with Aberdeenshire Council (AC) and PWS users (in the case of the latter where necessary) to confirm the location and nature of each supply;
- Based on the information provided, screening out supplies that are considered unlikely to be affected by the Proposed Development based on the SPR framework. For PWS with a plausible hydrological / hydrogeological connection to the Proposed Development, written consultation or a site visit to verify the location and nature of their supply has been undertaken, where possible;
- Preparation of 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, which are included as part of the EA and Risk Assessment, to avoid and mitigate against any potential adverse effects resulting from the Proposed Development.

2.2 Conceptual Site Model

2.2.1 A desktop assessment has been used to compile a CSM and was supported using the following secondary data sources:

- Geological and hydrogeological information obtained from the British Geological Survey (BGS)[2];
- Monthly precipitation and climate data from the Met Office[3];
- Scotland's Environment map[4];
- SEPA River Basin Management Plans[5]; and
- Other information published online concerning details of PWS within the vicinity of the Proposed Development.

2.2.2 Details of the existing site conditions can be found detailed in **Chapter 9: Hydrology, Hydrogeology, Geology and Soils (Volume 1)**. The CSM has also been supported by site specific walkover surveys which were carried out by appropriately qualified professionals. These included visits to specific PWS, as well as the wider catchment areas.

2.3 PWS Screening

2.3.1 Consultation with AC was undertaken, and PWS were screened within the Study Area. The requested PWS data was provided by AC in February 2024. Following this, an initial screening was conducted to determine which properties required further direct consultation.

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[2] BGS, (2021). Geology of Britain viewer [online]. Available at: https://www2.bgs.ac.uk/groundwater/datainfo/hydromaps/home.html [Accessed March 2026].
[3] Met Office, UK climate maps and data [online]. Available at: https://www.metoffice.gov.uk/research/climate/maps-and-data [Accessed March 2026].
[4] Scotland's Environment map [online]. Available at: https://environment.gov.scot/ [Accessed March 2026].
[5] SEPA, (2021) The River Basin Management Plan for Scotland 2021 – 2027 [online]. Available at: https://www.sepa.org.uk/environment/water/river-basin-management-planning [Accessed March 2026].

2.3.2 The screening exercise served to exclude properties where hydrological or hydrogeological connectivity was judged implausible. These were determined considering the following:

- PWS abstraction types and relative position to the Proposed Development;
- Surface water catchment boundaries, channel networks and surface water flow paths, particularly for surface abstractions within 500 m of the LoD;
- Underlying aquifer properties, including groundwater flow pathways, specifically including any groundwater abstractions within 250 m of the LoD;
- Topography; and
- Dominant land uses.

2.3.3 PWS with no plausible pathway between the Proposed Development infrastructure and their source zone were screened out of further assessment, with justification provided in Table 4.1.

2.4 Consultation

2.4.1 Where a plausible connection was identified in the screening of PWS, users were contacted to obtain more information regarding their supply. This process involved a third-party Lands Team sending residents a letter along with a questionnaire, with an example shown in **Annex A**. The purpose and contents of these documents are outlined below:

- 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 (e.g. supply type, usage etc.), and asked permission to undertake an inspection should further information be needed; and
- A map showing the location of the property was also included, with residents asked to indicate the location of their supply.

2.4.2 The information obtained from consultation / site walkover survey was used to develop the CSM and risk assessment.

2.4.3 Where no information was provided, assessment was based on other information available including AC data, desktop reviews of geology and topography, PWS information provided by other residents / PWS users, and recommendation was made for further investigation, as required. The source of the information has been indicated within **Table 4.1.**

2.5 Risk Assessment

2.5.1 A methodology for risk assessment of PWS is contained within Section 4 of the Private Water Supplies Technical Manual[6], published by the Drinking Water Quality Regulator for Scotland. When assessing supply compliance with the PWS regulations, local authorities are required to consider factors, such as, proximity of the supply to livestock, and wildlife, historical and current land use, and historical maintenance conducted on the supply. Such factors are useful for understanding the baseline qualities of a supply. However, due to the specific nature of works being conducted for the Proposed Development, it was not considered relevant or practical to directly apply the methodologies set out in this guidance.

2.5.2 The Proposed Development involves unique characteristics and potential impacts that require a tailored approach. Standard methodologies may not fully address the specific risks associated with the construction and operation of the overhead line. Therefore, the assessment relies on professional experience and judgment to address site-specific conditions and risks more effectively. This approach allows for a more nuanced and context-specific evaluation, incorporating best practices and mitigation measures most relevant to the circumstances of the Proposed Development.

[6] DWQR, (2006). Available at: pws-technical-manual-section-4-risk-assessment-for-private-water-supplies.pdf (dwqr.scot) [Accessed March 2026].

2.5.3 The methodologies adopted within the assessment are based on professional experience and taking account of the above guidance to establish the various factors which influence risk to the supplies. The Risk Assessment considered the types of hazards associated with the Proposed Development, including potential contaminant release, and potential magnitude and severity of impact. The SPR concept model was used as the underlying framework to assess the risk posed by the development activities. In this model:

- Source refers to the source of the potential hazard (not to be confused with PWS source);
- Pathway refers to the mechanisms by which the hazard is transmitted to the receptor; and
- 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).

2.5.4 Where hydrological / hydrogeological connectivity 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. For any PWS, it must first be established if there is a risk to mitigate and then, if necessary, introduce mitigation measures to reduce the risk. Such risks are often sufficiently reduced through embedded design and good practice mitigation. In the event a risk remains after these, then additional mitigation may be required to sufficiently reduce residual risks.

2.5.5 The Risk Assessment considers the type of hazard associated with the Proposed Development, based on the probability and magnitude of change occurring. In addition to contamination, there is also the possibility that supply continuity could be affected through water quantity reduction.

2.5.6 Where risk or uncertainty is identified and further protection or mitigation is appropriate, this should ensure the PWS is:

- Adequately preserved in terms of both water flow and water quality; and / or
- Replaced by an alternative process whereby potable water is made available on a temporary or permanent basis, as appropriate.

Significance Criteria

2.5.7 The potential impact on PWS has been assessed by evaluating the likelihood of an impact occurring and the magnitude of any such event on the receiving environment. The receiving environment refers to the natural and built surroundings that could be affected by the Proposed Development, including water sources and the PWS point of consumption. The probability of an impact has been classified as high, medium, low, or negligible based on criteria outlined in **Table 2.1**. The likelihood of 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 the Proposed Development activities.

Table 2.1: Probability of impact

Probability	Definition	Examples
High	There is a pollutant linkage; an event is likely in the short-term and very likely in the long-term.	Baseline Conditions provides strong evidence of a pathway from hazards to receptor i.e. highly productive aquifer (bedrock or superficial); The Proposed Development overlies the point of abstraction or is immediately upgradient (<100 m). Proposed infrastructure footprint occupies >25% of the indicative source zone catchment area.
Medium	There is a pollutant linkage; it is possible that an event shall occur in short term, likely over the long-term.	Baseline Conditions indicate evidence of a pathway from hazards to receptor i.e. moderately productive aquifer (bedrock or superficial);

Probability	Definition	Examples
		The Proposed Development is upgradient and within the vicinity of the point of abstraction (>100 m to 250 m). Proposed infrastructure footprint occupies 5-25% of the indicative source zone catchment.
Low	There is a pollutant linkage. However, it is very unlikely an event would occur in short term, rising to unlikely in the long term.	Baseline Conditions indicate there is limited evidence of a potential pathway i.e. low productivity aquifer (bedrock or superficial); The Proposed Development is within the same catchment area and upgradient, but >250 m to 500 m from the point of abstraction. Proposed infrastructure footprint occupies <5% of the indicative source zone catchment area.
Negligible	There is a plausible pollutant linkage, but circumstances are such that it is improbable to occur in any timeframe.	Baseline Conditions indicate no evidence of a pathway from hazards to receptor i.e. bedrock / superficial deposits identified as not a significant aquifer. The Proposed Development is within the same catchment area and upgradient, but >500 m from the point of abstraction.

2.5.8 As outlined above, potential impacts on PWS have been assessed taking account of the type of supply and possible connection to the source through the presence / absence of pollutant linkages. The magnitude of potential change to that supply is defined below in **Table 2.2**: Magnitude of change.

Table 2.2: Magnitude of change

Magnitude	Examples
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 in long-term.
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.
Minor	Detectable but minor change to the hydrological / hydrogeological conditions, returning to previous condition in short-term. Minor degradation in the operation of the supply in terms of quantity and or quality.
Negligible	No perceptible change to the hydrological / hydrogeological conditions.

Impact Significance Matrix

2.5.9 The likelihood and magnitude of the potential impacts are combined to define the significance of the impact, as shown in **Table 2.3**. 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 change may be unclear and professional judgement, including precautionary considerations where data is uncertain, has been applied to identify the potential significance.

2.5.10 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 monitoring recommendations are provided, with an associated residual risk outcome.

Table 2.3: Risk matrix

Probability of Impact	Magnitude of Change			
	Major	Moderate	Minor	Negligible
High	Very High	High	Medium	Medium / Low
Medium	High	Medium	Medium / Low	Low
Low	Medium	Medium / Low	Low	Negligible
Negligible	Medium / Low	Low	Negligible	Negligible

2.5.11 Where the initial risk rating is evaluated to be low risk or above in the risk assessment (**Section 5.6**), additional mitigation measures have been proposed.

3. CONCEPTUAL SITE MODEL

3.1.1 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 degradation in water quality or a reduction in quantity.

3.1.2 Information concerning the environmental setting of the Proposed Development and the surrounding area is presented in **Chapter 9: Hydrology, Hydrogeology, Geology and Soils (Volume 1)**. Based on the assessment, the following CSM is presented that will be used to support the assessment of potential risks to PWS.

3.1.3 According to BGS GeoIndex Onshore Hydrogeology 1:625,000 mapping[7], the Study Area is underlain by the Argyll Group (**Plate 3.1**), unnamed igneous intrusions (late Silurian to early Devonian, and Ordovician to Silurian) (**Plate 3.2**) and Southern Highland Group. These are low-productivity aquifers, which typically maintain small amounts of groundwater near the surface weathered zone and secondary fractures.

3.1.4 The desktop assessment indicates the presence of two main groundwater systems:

- a shallow system within the bedrock that is largely dependent on surface water runoff and shallow throughflow (1); and
- a deeper system from within the underlying bedrock aquifers (2).

3.1.5 **Plate 3.1** and **Plate 3.2** illustrate how these two systems operate within in the different bedrock types present in the Study Area.

3.1.6 Supplies obtaining from system 1 will be limited by fractures, with low permeability in an unweathered state. Weathering and intensive fracturing enhances the permeability but generally groundwater flow and storage is within fractures. Supplies obtaining water from system 2 will be limited by the nature and extent of tectonic features or fractures, with the intergranular permeability being practically zero. Under such circumstances, the upper weathered margins of the bedrock will be a preferential flow pathway typically extending hundreds of metres, but recharge via infiltration will be limited by the permeability of overlying soils. As a result of these characteristics found in both systems, and with the exception of tectonic features, surface water catchments will provide a reasonable proxy for modelling groundwater. In the cases of the PWS considered, it is possible that recharge to abstraction points may be via a combination of surface / shallow superficial deposits and bedrock systems.

[7] BGS GeoIndex Onshore Viewer for Hydrogeological map of Scotland (2020). [online] Available at: http://mapapps2.bgs.ac.uk/geoindex/home.html?layer=BGSHydroMap&_ga=2.59199725.1532853921.1644263485-96331536.1635767367 [Accessed March 2026]

Plate 3.1: Plate-sectional illustration of the CSM for the Site and underlying groundwater (Hydrogeological conceptual model for Schematic cross-section of the hydrogeology of Precambrian aquifers in Scotland[8])

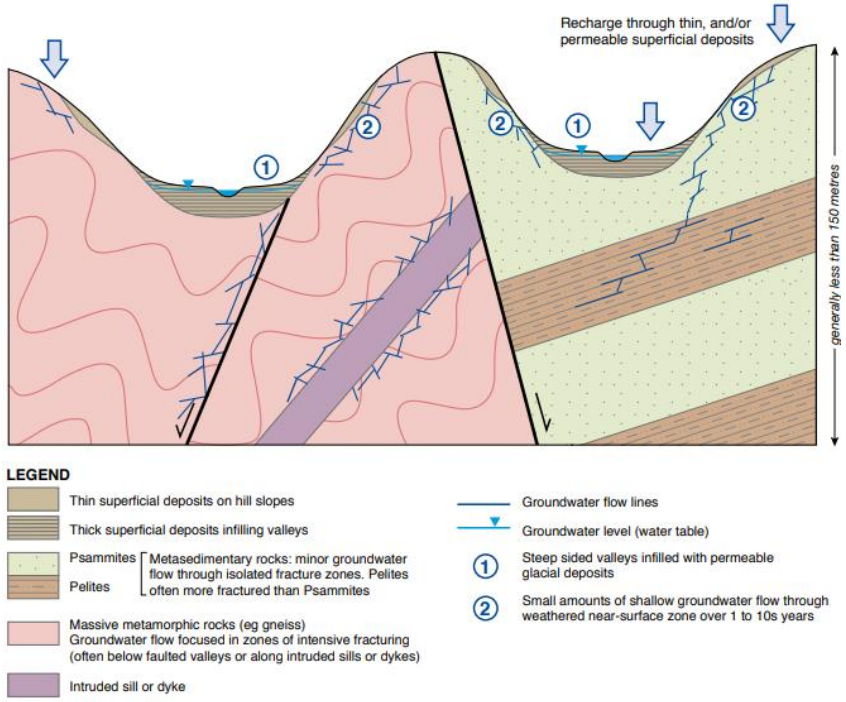
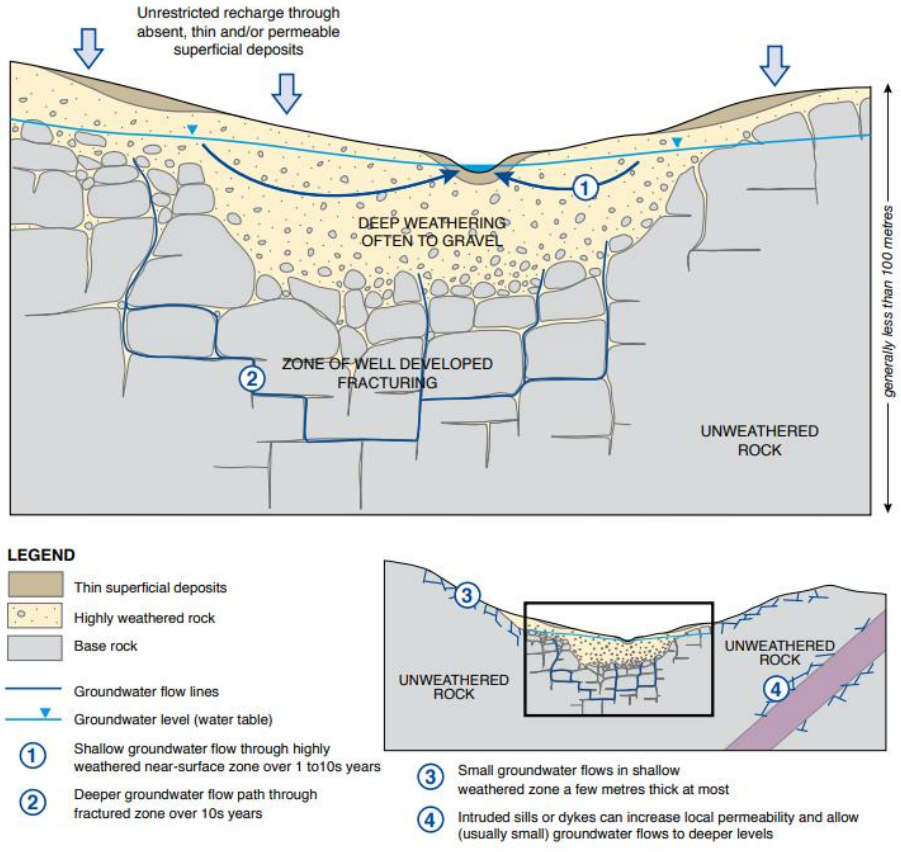


Plate 3.2: Hydrogeological conceptual model for intrusive igneous aquifers in Scotland[8]



[8] BGS, Scotland's aquifers and groundwater bodies (2015) OR15028.pdf (nerc.ac.uk) [Accessed March 2026].

4. SCREENING

4.1 Overview

4.1.1 A request was submitted in February 2024 to AC Environmental Health department for a copy of the Register of PWS. The register identified 42 PWS sources within the 1 km Study Area, with a further 40 properties identified using aerial imagery and OS mapping and an additional 2 identified through further correspondence and / or investigation. The properties that were not included in AC's PWS register were sent questionnaires.

4.1.2 **Table 4.1** presents information collected from the AC PWS register, returned questionnaires, and the conceptual model.

4.1.3 The findings from **Table 4.1** can be summarised as follows:

- 80 PWS sources are unlikely to be impacted by the Proposed Development, primarily due to intervening distance, or are connected to Scottish Water mains supply with no connection to any PWS, and require no further assessment (screened-out); and
- 4 PWS sources are from groundwater and are potentially at risk from the Proposed Development, and require further risk assessment.

4.2 Site Inspection

4.2.1 Where required, site surveys were undertaken to obtain more information on local hydrology, PWS abstraction and / or the location of infrastructure.

4.2.2 Surveys comprised visual inspection of infrastructure and source zones, including investigations to determine the precise route of infrastructure between the abstraction and property it serves. No intrusive works were undertaken as part of these surveys. Site surveys were undertaken with express permission of the landowners, and no land was entered without prior permission.

4.2.3 The surveys were undertaken between 12 and14 November 2025 and 24 and 25 February 2026 by experienced hydrological and hydrogeological surveyors. The weather during the surveys was mostly dry and overcast, with occasional spells of rain.

4.2.4 The topography of the Study Area is low gradient, with gentle undulations. At the time of surveys, the land use observed was generally arable and livestock farming.

Table 4.1: Screening assessment of identified PWS within 1 km of the LoD

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
1	1 Mains Of Kinmundy Cottages	Council (property)	Not Classified	404650,844782	Property approximately 530 m east of nearest proposed tower.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property.	No
2	2 Mains Of Kinmundy Cottages	Council (property)	Not Classified	404639,844774	Property approximately 525 m east of nearest proposed tower.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from the questionnaire. It is assumed that the abstraction is situated within the vicinity of the property.	No
3	Berryden Farmhouse	Council (property)	Well	407986,843823	Property approximately 1 km east of nearest proposed tower and 718 m east of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Further details of the well are not available. A site visit was not undertaken due to the property being located > 250 m from the nearest proposed infrastructure. It is assumed that the PWS source is located near to the property. No feedback available from the questionnaire.	No
4	Birchdale	Council (property)	Well	408116,843778	Property approximately 1.35 km east of nearest proposed tower and 850 m east of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Further details of the well are not available as a site visit was not undertaken due to the property being located > 250 m from the nearest proposed infrastructure. It is assumed that the PWS source is located near to the property. No feedback available from the questionnaire.	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
5	Castlepark of Ludquharn	Council (source)	Well	403367,844798	Source approximately 605 m west of nearest proposed tower and 570 m west of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Further details of the well are not available as a site visit was not undertaken due to the PWS source being located > 250 m from the nearest proposed infrastructure and no feedback was received from the questionnaire.	No
6	Clayhills	Council (property)	Not Classified	402963,844701	Property approximately 908 m west of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property. There is also potential that the property is served by SW public water supply.	No
7	Glendale	Council (property)	Not Classified	407639,843092	Property approximately 955 m southeast of nearest proposed tower and 733 m southeast of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply. As the property is located > 250 m, the intervening distance between the PWS and nearest proposed infrastructure has led to this supply being screened out.	No
8	Gushetneuk	Council (property)	Not Classified	405668,844465	Property approximately 476 m north of nearest tower due to be dismantled and 329 m north of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback was received from a questionnaire. It is assumed that the abstraction is situated within the vicinity of the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
							property, or potentially that the property is served by SW public water supply.	
9	Hill Of Dens Cottage	Questionnaire	Well	406454, 844087	Source approximately 235 m southwest of nearest proposed tower and 215 m southwest of nearest proposed access track (temporary). Additionally, source is 308 m from nearest tower due to be dismantled.	Yes – due to distance from proposed infrastructure and being assessed as having a potential hydrological connection.	Source is a well that supplies the property with domestic drinking water. The well is located adjacent to the property in the front garden, as per the questionnaire response received. There is a storage tank that is located within the property. The well is at a similar elevation as the proposed infrastructure nearby. As the source is located < 250 m, the intervening distance between the PWS and nearest proposed infrastructure has led to this supply being screened in.	Yes
10	Home Farm, Home Farm Cottage	Questionnaire	Well	404310,844827	Property approximately 195 m southeast of nearest proposed tower and 150 m southeast of nearest proposed access track (temporary).	No – the property is located upgradient (and on the opposite side of a watercourse) from the nearest proposed tower location. Therefore, the potential source-pathway-receptor link and associated hydrological connection is assessed as being unlikely for this PWS.	According to the questionnaire response from Home Farm Cottage, the two properties share a well supply, which is located at Home Farm. The questionnaire confirms that the water is for domestic use. The precise location was not provided, so the coordinates of Home Farm property have been used. Additionally, a nearby well which, according to Council data, serves Home Farm and Home Farm Cottage has been assessed in this screening table (ID 14). It is unclear whether this is the source referenced to by this PWS ID.	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
11	Inverveddie	Council (property)	Mains	405337,845347	Property approximately 110 m southwest of nearest proposed tower and 75 m southwest of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
12	Inverveddie Cottage	Council (property)	Mains	405371,845154	Property approximately 280 m south of nearest proposed tower and 235 m south of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
13	Kimberley Cottage	Questionnaire	Mains	405348,844391	Property approximately 353 m north of nearest tower to be dismantled and 345 m north of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
14	Kinmundy Mains, Home Farm, Home Farm Cottage	Site Visit	Well	404215,844870	Well approximately 95 m southeast and similar elevation to the nearest proposed tower and 60 m east of nearest proposed access track (temporary).	Yes – primarily due to the close proximity between the proposals and the source. It is noted that the source is indicated to be slightly upgradient of the nearest proposed track and on the opposite side of a small watercourse. On this basis the source-pathway-receptor link is potentially reduced.	Well that supplies Kinmundy Mains, Home Farm and Home Farm Cottage. Location confirmed from site visit.	Yes

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
15	Kinmundy Mains, Home Farm, Home Farm Cottage, 1 Mains of Kinmundy Cottages, 2 Mains of Kinmundy Cottages	Site Visit	Spring	404510,844753	Property approximately 410 m southeast of nearest proposed tower and 365 m southeast of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Spring that supplies five properties. Location not confirmed during site visit.	No
16	Knockleith	Questionnaire	Spring	405965, 844130	Source approximately 186 m north of nearest tower due to be dismantled and nearest proposed access track (temporary).	Yes – due to the proximity and the potential hydrological connection between the proposed access track and the property.	A questionnaire which was received for a neighbouring planning application indicates that this property has a spring that is used for domestic purposes.	Yes
17	Longleys	Council (property)	Mains	405954,846306	Property approximately 850 m north of nearest proposed tower.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	A published PWSRA for Netherton Hub indicates that this property is served by SW public water supply.	No
18	Mains Of Ludquharn and Salish Lodge	Site visit	Spring	404123,845391	Source approximately 250 m northeast of nearest proposed tower and 180 m northeast of nearest proposed access track (temporary).	Yes – due to the potential hydrological connection from a tributary of the Burn of Ludquharn between the proposed tower and the source. The spring is located downgradient of the proposed infrastructure and	Spring located adjacent to a tributary of the Burn of Ludquharn. Protected by a manhole cover, the spring serves two properties that are located further away from the proposed infrastructure. Unable to visit the properties for more information about the supply.	Yes

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
						directly downstream of two proposed watercourse crossings.		
19	Meikle Dens	Council (property)	Not Classified	407588,843405	Property approximately 450 m southeast of nearest proposed access track and 720 m southeast of nearest tower due to be dismantled.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
20	Netherton	Council (property)	Mains	405529,845457	Property approximately 120 m east of nearest proposed tower and 35 m west of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS. Property is no longer in use due to scheduled demolition.	Property was served by SW public water supply, but is no longer occupied due to scheduled demolition for the Netherton Hub development.	No
21	Newmill Of Ludquharn	Council (property)	Well	403194,845238	Property approximately 980 m northwest of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Further details of the well are not available. No feedback available from the questionnaire. It is assumed that the PWS source is located near to the property.	No
22	Newton Ludquharm	Council (property)	Not Classified	402729,843716	Property approximately 645 m northwest of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
23	Roalan, Nether Kinmundy Farm	Questionnaire	Well	404759, 844811	Source approximately 500 m south of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	These properties are confirmed by the questionnaire to be sharing the abstraction. This has been confirmed as a well / spring situated in fields south of unnamed road, ~300 m west of properties. The abstraction is situated upgradient of the Proposed Development.	No
24	Savoch Cottage	Council (property)	Not Classified	405960,843343	Property approximately 600 m south of nearest tower due to be dismantled and 492 m south of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
25	Savoch Farm	Council (property)	Not Classified	406211,843252	Property approximately 645 m south of nearest tower due to be dismantled and 548 m south of proposed access tracks (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
26	Smiddy Croft	Site visit	Not Classified	404245,843685	Property approximately 217 m southwest of nearest tower due to be dismantled and 160 m south of nearest proposed access track (temporary).	No – Property is assumed derelict and therefore any PWS source is likely no longer in use.	A site visit indicated that the property is derelict and as a result any PWS source is likely no longer in use. A contractor should verify this prior to construction.	No
27	South Braeside Of Ludquharn	Site visit	Mains	403869,843930	Property approximately 295 m southeast of nearest proposed tower and 205 m northwest of	No – property is served by SW public water supply and does not use a PWS for	Property served by SW public water supply. During a site visit it was established that the property is on mains for all domestic use however	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
					nearest proposed access track (temporary).	drinking water, only outdoor gardening purposes.	the owners are aware that they use PWS supply in their garden. The owners were not aware of the location of this source however they believe it may be located nearer property ID: 72.	
28	South Toddlehills	Council (property)	Not Classified	407124,844296	Property approximately 420 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
29	Tiffery	Questionnaire	Borehole	404523,845950	Source approximately 665 m north of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Source type and location confirmed by questionnaire response received.	No
30	Toddlehills	Council (property)	Not Classified	406890,844960	Property approximately 700 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
31	Upper Savoch	Questionnaire	Mains	405951,843345	Property approximately 597 m south of nearest tower due to be dismantled and 489 m south of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
32	Whitebog Croft	Questionnaire	Mains	407915,843096	Property approximately 910 m southeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
33a	Cairnlea	Site visit	Borehole	403847, 844911	Borehole approximately 285 m west of nearest proposed infrastructure.	No – source is located upgradient of nearest proposed tower location. Therefore, the potential source-pathway-receptor link is unlikely.	As per the site visit, the borehole was confirmed to be approximately 60 m in depth, with good quality filtered water for domestic use.	No
33b	Cairnlea	Site visit	Well	403889, 844934	Well approximately 245 m west of nearest proposed infrastructure.	No – source is located upgradient of nearest proposed tower location. Therefore, the potential source-pathway-receptor link is unlikely.	The well was stated to have poor water quality, only used for agricultural purposes and as an emergency backup supply. Not used for domestic purposes.	No
34	Lenabo Lodge	Site visit	Mains	404003,843465	Property approximately 312 m south of nearest tower due to be dismantled and 298 m south of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
35	Unknown	Unregistered Property	Unknown	404059,843242	Property approximately 541 m south of nearest tower due to be dismantled and 526 m south of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply. As the property is located > 250 m, the intervening distance between the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
							PWS and nearest proposed infrastructure has led to this supply being screened out.	
36	Ivy Cottage	Site visit	Mains	404359,843698	Property approximately 193 m south of nearest tower due to be dismantled and proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
37	Brownhill Croft	Site visit	Mains	404495,843589	Property approximately 344 m southeast of nearest tower due to be dismantled and proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
38	Redbrae	Site visit	Mains	404523,843751	Property approximately 231 m southeast of nearest tower due to be dismantled and proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
39	39	Unregistered Property	Unknown	404628,843599	Property approximately 409 m south of nearest tower due to be dismantled and 399 m south of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and given that the PWS source is likely no longer in use.	The site visit indicated that property is derelict and therefore any PWS source is likely no longer in use.	No
40	Kerville	Questionnaire	Mains	404685,843732	Property approximately 129 m west of tower due to be dismantled and of existing access track due to be upgraded.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
41	Unknown	Unregistered Property	Unknown	404693,844586	Property approximately 715 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
						having a hydrological connection.	abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	
42	Shieldaig	Questionnaire	Mains	404859,843911	Property approximately 131 m west of nearest tower due to be dismantled and existing access track due to be upgraded.	No – property is served by SW public water supply and does not use a PWS	Property served by SW public water supply.	No
43	Beanacharan	Questionnaire	Mains	404892,844965	Property approximately 400 m southeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
44	Unknown	Unregistered Property	Unknown	405215,844436	Property approximately 411 m north of nearest tower due to be dismantled and 385 m north of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or there is potential that the property is served by SW public water supply. The property is positioned on the opposite side of a ditch from the nearest infrastructure proposals.	No
45	Upper Savoch Croft	Site visit	Mains	406063,843853	Property approximately 67 m southeast of nearest proposed infrastructure which comprises of proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
45a	Upper Savoch Croft	Questionnaire	Well	406105,843756	Source approximately 170 m southeast of	No – source assessed as not having a	Questionnaire suggests that this PWS is not currently in use, with the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
					nearest proposed access track (temporary) and 240 m southeast of nearest tower due to be dismantled.	hydrological connection.	property (Upper Savoch Croft ID: 45) supplied by mains. The questionnaire suggests that this may be used in the future but only for livestock purposes, not domestic purposes.	
46	Unknown	Unregistered Property	Unknown	406284,846003	Property approximately 745 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
47	West Toddlehills	Site visit	Mains	406378,844838	Property approximately 195 m northeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
48	Toad Hall	Site visit	Mains	406378,844838	Property approximately 160 m northeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
49	Unknown	Unregistered Property	Unknown	406587,844143	Property approximately 121 m south of nearest proposed tower and 75 m west of proposed access track (temporary).	No – due to lack of evidence to suggest this particular property is served by a PWS.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. Other properties in the vicinity are served by mains supply however a neighbouring property, Hill of Dens (ID: 9) is served by a PWS. This property is not on AC PWS register and there is no evidence to suggest this property is supplied by a PWS however the Principal Contractor should confirm	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
							the water supply prior to construction, including whether the property is connected to mains or forms part of a shared private supply with ID: 9.	
50	Sandside House	Unregistered Property	Unknown	406707,845214	Property approximately 680 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
51	Mirimar	Unregistered Property	Unknown	406766,845293	Property approximately 760 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply. Property is on the opposite side of an unnamed watercourse from the proposed infrastructure.	No
52	Unknown	Unregistered Property	Unknown	406787,845513	Property approximately 870 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
53	Toddlehills Cottage	Unregistered Property	Unknown	406873,845163	Property approximately 775 m northeast of	No – due to distance from proposed	Details of this PWS abstraction are unknown as a site visit was not	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
					nearest proposed infrastructure.	infrastructure and being assessed as not having a hydrological connection.	possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	
54	Parklands	Unregistered Property	Unknown	406922,844838	Property approximately 690 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
55	Unknown	Unregistered Property	Unknown	406990,844802	Property approximately 665 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
56	Netherdale	Unregistered Property	Unknown	407015,844589	Property approximately 520 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
57	Burnview Farm	Unregistered Property	Unknown	407071,844647	Property approximately 600 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
						having a hydrological connection.	abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	
58	Westburn	Unregistered Property	Unknown	407071,844760	Property approximately 730 m east of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
59	Burnview	Unregistered Property	Unknown	407084,844688	Property approximately 640 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
60	Knapperna House	Unregistered Property	Unknown	407116,844627	Property approximately 625 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
61	Savoch Stables	Unregistered Property	Unknown	407123,842764	Property approximately 990 m south of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
							potential that the property is served by SW public water supply.	
62	Little Dens Farm	Site visit	Mains	407152,843980	Property approximately 245 m northeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
63	Little Dens	Site visit	Mains	407282,844121	Property approximately 435 m northeast of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
64	Oldtown of Meikle Dens	Questionnaire	Mains	407398,843033	Property approximately 720 m south of nearest proposed infrastructure.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
65	Whitecairn	Unregistered Property	Unknown	407456,843106	Property approximately 660 m south of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
66	Unknown	Unregistered Property	Unknown	407749,844357	Property approximately 935 m northeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
67	Lower South Dens	Unregistered Property	Unknown	407844,843454	Property approximately 640 m southeast of	No – due to distance from proposed infrastructure and	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
					nearest proposed infrastructure.	being assessed as not having a hydrological connection.	questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	
68	South Dens	Unregistered Property	Unknown	407924,843372	Property approximately 750 m southeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
69	The Schoolhouse	Questionnaire	Mains	405070, 843986	Property approximately 149 m southeast of nearest tower due to be dismantled and 135 m southeast of nearest proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
70	Unknown	Site visit	Mains	405105, 844000	Property is approximately 166 m southeast of nearest tower due to be dismantled and 154 m southeast of a proposed access track (temporary).	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No
71	Unknown	Site visit	Mains	405139, 843753	Property is approximately 329 m southwest of nearest tower due to be dismantled and 228 m southeast of an existing access track which requires upgrading.	No – property is served by SW public water supply and does not use a PWS.	Property served by SW public water supply.	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
72	Unknown	Site visit	Unknown	403438, 843398	Property approximately 195 m south of nearest proposed tower and 45 m southwest of nearest proposed access track (temporary).	No – on the basis that the property is not in use and given that there is no data to suggest there is a PWS serving this property.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or there is potential that the property is served by SW public water supply. The property is also currently unoccupied.	No
73	Moss Side Croft	Council (property)	Not classified	405157, 843563	Property is approximately 564 m south of nearest tower due to be dismantled and 412 m south of nearest access track to be upgraded.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
74	Redbog Farm	Council (property)	Not classified	404517, 842810	Property is approximately 1.1 km southeast from nearest tower due to be dismantled and 1 km southeast of nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply. As the property is located > 250 m, the intervening distance between the PWS and nearest proposed infrastructure has led to this supply being screened out.	No
75	Smithy Croft	Council (property)	Borehole	408187, 843184	Property is 1 km southeast from nearest proposed infrastructure.	No – due to distance from proposed infrastructure and	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
						being assessed as not having a hydrological connection.	questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	
76	Oldmill Ludquharm	Council (property)	Well	402445, 844270	Property is approximately 1.1 km west of nearest proposed tower and 944 m northwest of nearest access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
77	Mormond View	Council (property)	Borehole	408247, 843358	Property is approximately 1 km southeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
78	Kimberley Cottage	Council (property)	Not classified	405348, 844391	Property is approximately 482 m northeast of nearest tower due to be dismantled and 425 m from nearest proposed access track (temporary).	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
79	Hillhead House	Council (property)	Borehole	408238, 843428	Property is approximately 1 km southeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the	No

PWS ID	Property Name	Data Source(s)	Source / Abstraction Type	Eastings and Northings	PWS / Property from nearest Infrastructure	Potential complete Source-Pathway-Receptor link?	Details	Risk Assessment Required?
						having a hydrological connection.	vicinity of the property, or the potential that the property is served by SW public water supply.	
80	Ferndale Cottage	Council (property)	Borehole	408199, 843127	Property is approximately 1.1 km southeast of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
81	Easterton Of Lenabo	Council (property)	Not classified	402303, 842784	Property is approximately 941 m southwest of nearest proposed infrastructure.	No – due to distance from proposed infrastructure and being assessed as not having a hydrological connection.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No
82	Easter Cottage Lenabo	Council (property)	Not classified	402247, 842681	Property is approximately 1 km southwest of nearest proposed infrastructure.	No – due to distance from proposed infrastructure.	Details of this PWS abstraction are unknown as a site visit was not possible and / or no feedback from questionnaire. It is assumed that the abstraction is situated within the vicinity of the property, or the potential that the property is served by SW public water supply.	No

5. RISK ASSESSMENT

5.1 General

5.1.1 The Proposed Development poses potential risks to PWS, primarily through the reduction of water volume or adverse changes in water quality. Understanding and managing these risks is crucial to ensure the continued safety and reliability of these water sources.

5.1.2 Effective risk management involves addressing the components of the Source-Pathway-Receptor chain. By breaking actual or potential pollutant linkages, we can eliminate hazards. Where residual risks remain, implementing management controls and contingency plans will minimise these risks to acceptable levels.

5.1.3 The risk assessment process evaluates the probability of impacts and the likely magnitude of changes at the receptor, assuming successful implementation of embedded and good practice mitigation measures. This detailed assessment, based on the CSM presented in **Section 3: Conceptual Site Model**, ensures that any elevated risks are identified and addressed with additional mitigation strategies.

5.2 Hazards

5.2.1 Hazards introduced by construction can affect the source of water recharging a PWS (surface water, groundwater, or both); and can also affect PWS delivery infrastructure through accidental damage.

5.2.2 Rainfall increases the risk of pollution and damage to the surface and groundwater environment. Rainfall derived surface runoff during construction works can mobilise and transport pollutants such as sediment, oils, chemicals, and building materials (e.g. concrete wash) into the surface and groundwater environment.

5.2.3 Key hazards acting as potential sources of pollution were identified as activities undertaken during the construction of the Proposed Development. These will be associated with:

- Enabling works, site clearance and demolitions;
- Platform earthworks and creation of a level platforms;
- Bund / screening earthworks;
- Construction of temporary access roads, perimeter and site drainage, including SuDS;
- Installation of electrical plant;
- Commissioning; and
- Reinstatement and planting.

5.2.4 The completion of the construction elements listed above will require additional activities to be undertaken which may also lead to potential impacts. These activities include:

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

5.3 Standard Good Practice Mitigation

5.3.1 There are nine General Environmental Management Plans (GEMPs) relevant to this chapter, all of which are listed below, and explained in further detail in **Chapter 2: Description of the Proposed Development (Volume 1)** of the EAR:

- Working in or Near Water;
- Working in Sensitive Habitats;
- Watercourse Crossings;
- Private Water Supplies;
- Soil Management;
- Working with Concrete;
- Oil Storage and Refuelling;
- Soil Management; and
- Bad Weather.

5.3.2 During the detailed design and construction phases, towers and associated infrastructure could be microsited within the LoD to avoid PWS, where various environmental and engineering requirements enable. Sections of track would be surveyed and microsited, to optimise the distances from the PWS, considering local topography and landscape characteristics.

5.3.3 A Private Water Supply Monitoring Plan (PWSMP) will include a pollution response plan and contingency measures, detailing responsibilities and lines of communication between the Principal Contractor, PWS users, and stakeholders. Contact details (land and mobile numbers / email addresses) for PWS users will be maintained by the Principal Contractor at all times.

5.3.4 In the event of an unforeseen impact on the existing PWS arising from the construction and operational impact of the Proposed Development, contingency measures will be implemented. These will include provisions to provide alternative water supplies on a temporary and permanent basis, including:

- Provision of bottled potable water in the event of a short or transient derogation of a water supply (bottled water would be retained on site ready for quick dispatch to any affected property);
- Provision of mobile potable water bowser or tanker water deliveries to an existing storage vessel, for short-medium term contingency, whilst engineering activities are occurring locally and increasing risk to supply (or if an event has occurred which has adversely affected the PWS); and
- Provision of an alternative PWS source (e.g. spring, borehole, alternative surface water abstraction location) or public water supply connection in the event of a permanent derogation of a water supply.

5.3.5 Based on methodology outlined in **Section 2: Methodology** and **Table 2.3**, where the initial risk rating is evaluated to be above low risk, additional mitigation measures have been proposed.

5.3.6 Prior to construction, the Principal Contractor must conduct an updated PWS risk assessment in accordance with SEPA guidance (2024). The final PWSRA will be reviewed in line with the final design consent and will include additional mitigation, where deemed appropriate.

5.4 Additional Measures

Further Investigation and Demarcation

5.4.1 To ensure the utmost protection of PWS during the construction phase, the Principal Contractor and Applicant will undertake comprehensive investigations prior to commencing any activities. These investigations will prioritise non-intrusive methods, such as cable avoidance technology (CAT) scanners, ground-penetrating radar (GPR), and other geophysical surveys, to accurately locate and assess PWS infrastructure. Where necessary, systematic trial pit surveys will be conducted by hand

to minimise disruption. This proactive approach will help identify any potential risks early on, allowing for the implementation of effective mitigation measures to safeguard water quality and supply continuity.

5.4.2 Following the completion of further investigation, it may be necessary to implement additional measures to safeguard PWS quality and quantity; these include:

- Demarcation, or fencing off the PWS intake and / or storage tank to avoid accidental damage;
- Demarcation of the supply distribution route on the ground using wooden pegs (or similar) to avoid accidental damage; and
- Making site operatives aware of PWS and the sensitivity of the catchment through toolbox talks and site induction.

Suitable Engineering Solution

5.4.3 Following further investigation, it may be confirmed that there is the potential for the PWS infrastructure to be impacted through planned construction works. Should this be the case, an assigned contractor will prepare specific construction or working methods to ensure the continuity of the PWS. These methods include refining the engineering design and a general arrangement drawing for crossing pipework.

5.4.4 Appropriate communication between PWS users and the Principal Contractor will be agreed and established between the Principal Contractor and SSEN Transmission to ensure the appropriate communication of construction programmes.

5.4.5 Engineering solutions will be discussed with AC and SEPA at the post planning permission pre-construction stage.

5.4.6 PWS abstraction locations and associated infrastructure shall be communicated to construction personnel via the provision of detailed mapping and / or toolbox talks conducted by the Principal Contractor.

Alternative Water Supply

5.4.7 It is unlikely that any PWS assessed will require an alternative water supply. However, if the Proposed Development is granted planning permission, then prior to the commencement of construction, the Principal Contractor will be required to undertake an assessment of all PWS that have been screened in within this PWSRA. If circumstances change and a PWS requires an alternative supply due to a high probability of detriment impact to a PWS as a result of the Proposed Development, the owners would be provided with a suitable alternative supply if deemed necessary. The Applicant will cover the costs of providing alternative supplies.

5.4.8 In the event of an alternative water source being implemented, SEPA and AC would be advised as soon as practicable.

5.5 PWS Monitoring Plan

5.5.1 A PWS Monitoring Plan (PWSMP) will be prepared by the Principal Contractor prior to construction. This will detail all mitigation measures to be delivered to secure the quality, quantity, and continuity of water supplies (which may be affected by the Proposed Development). The PWSMP will be provided to the PWS user, prior to construction and will contain contact information for the Construction Site Manager (or similar). PWS users will be informed of any planned works that may affect their supply.

Monitoring Arrangements

5.5.2 A water level and quality monitoring programme will be undertaken prior to any construction and during construction. The PWSMP will include water quality sampling methods and shall specify abstraction

points. Post-construction monitoring would also be completed to ensure there is no long-term impact on water quality or quantity, which could be associated with the Proposed Development.

5.5.3 The PWS water monitoring programme will be aligned with the Construction Environment Management Plan (CEMP). For example, sampling frequency, and analysis suite are matched at the surface water monitoring locations. The PWSMP would also outline any site-specific additional mitigation outlined in this assessment.

5.5.4 The monitoring arrangements would be discussed and agreed with AC and SEPA post-consent. An example monitoring strategy is included in **Annex B**.

5.6 Risk Assessment Summary

5.6.1 A Risk Assessment has been provided for those PWS identified as being plausibly at risk of impact from the Proposed Development. The Risk Assessment is presented in **Table 5.1** and should be read in conjunction with **Table 2.1**, **Table 2.2** and **Table 2.3**.

Table 5.1: Risk assessment of PWS sources that could be impacted by the Proposed Development

PWS ID	PWS Name	Abstraction Type	Risk Assessment Assuming Implementation of Standard Good Practice			Additional Mitigation Required?	Residual Risk
			Probability of Impact	Magnitude of Change	Risk		
9	Hill of Dens Cottage	Well	Low	Minor	Low	Yes	Negligible
14	Kinmundy Mains, Home Farm, Home Farm Cottage	Well	Medium	Minor	Medium	Yes	Low
16	Knockleith	Spring	Medium	Moderate	Medium	Yes	Low
18	Mains of Ludquharn and Salish Lodge	Spring	Medium	Moderate	Medium	Yes	Low

Hill of Dens Cottage PWS (ID: 9)

5.6.2 **Assessment notes**: Based on AC records and a questionnaire and site visit, the abstraction at **Hill of Dens Cottage** (406454, 844087) is a well. The source is situated approximately 235 m southwest of the nearest proposed tower and 215 m southwest of nearest proposed access track, both of which are anticipated to require excavations of >1 m. The elevation of the proposed tower is similar to that of the well however the topography falls away from the tower towards the northeast, resulting in any drainage flowing away from the PWS source. The proposed access track crosses the hill above the PWS and therefore this is likely to contribute to the catchment of the PWS, however due to the topography, this is likely to only be a short section of the track.

5.6.3 According to the CSM, the underlying bedrock is a low productivity aquifer, with groundwater flow pathways constrained to weathered zones or fractures. The well is at a similar elevation to the proposed excavations, and given the intervening distance, the topography and the low productivity aquifer linking the well and the nearest infrastructure the probability of impact is assessed as being **Low**, with the magnitude of change being **Minor**, and a consequential risk of **Low.**

5.6.4 **Additional Mitigation:** This PWS and its network will require further investigation by Principal Contractor prior to construction (this includes establishing any potential link between this supply and property ID: 49). Additional mitigation may include the demarcation of supply, the appropriate design

of standard good practice mitigation to avoid potential for impact on pipeline and source and a water quality monitoring plan.

5.6.5 **Residual Risk:** Assuming the implementation of additional mitigation and good practice measures, the probability remains **Low**, the magnitude of change is reduced to **Negligible**, and there is a consequential residual risk of **Negligible**.

Kinmundy Mains, Home Farm, Home Farm Cottage PWS (ID:14)

5.6.6 **Assessment notes:** Based on a site visit, the abstraction at **Kinmundy Mains, Home Farm and Home Farm Cottage** (404215, 844870) is a well. The source is situated approximately 60 m east of the nearest proposed access track which is anticipated to require an excavation of >1 m. The well appears to be of similar elevation to the proposed infrastructure however mapping suggests that there is a managed watercourse in between the well and the proposed infrastructure. During the site visit it was confirmed that the well is perched above the watercourse and is separated topographically from the proposed infrastructure. The majority of the flow from the proposed infrastructure is likely to be conveyed into this watercourse and to the north away from the PWS well source.

5.6.7 According to the CSM, the underlying bedrock is a low productivity aquifer, with groundwater flow pathways constrained to weathered zones or fractures. The well is at a similar gradient to the proposed excavations, and given the intervening distance, the topography and the low productivity aquifer linking the well and the nearest infrastructure, the probability of impact is assessed as being **Medium**, the magnitude of change is **Minor**. This result in a consequential risk of **Medium**.

5.6.8 **Additional Mitigation:** This PWS and its network will require further investigation by Principal Contractor prior to construction. Additional mitigation may include the demarcation of supply, appropriate design of standard good practice mitigation to avoid potential for impact on pipeline and source and a water quality monitoring plan.

5.6.9 **Residual Risk:** Assuming the implementation of the additional mitigation, the probability remains **Medium**, the magnitude of change is reduced to **Negligible**, and there is a consequential residual risk of **Low**.

Knockleith PWS (ID:16)

5.6.10 **Assessment notes:** Based on a questionnaire which was received for a neighbouring planning application, the abstraction at **Knockleith** (405965, 844130) is a spring. The source is situated approximately 186 m north of the nearest tower due to be dismantled and proposed access track which are anticipated to require excavations of >1 m. The spring is located downgradient of the proposed infrastructure, and given the slight steepening of the gradient, any drainage may flow towards it.

5.6.11 According to the CSM, the underlying bedrock is a low productivity aquifer, with groundwater flow pathways constrained to weathered zones or fractures. The spring is downgradient of the nearest tower due to be dismantled, and given the intervening distance, the topography and the low productivity aquifer between the spring and the nearest infrastructure, the probability of impact is assessed as being **Medium**, with the magnitude of change being **Moderate**, and a consequential risk of **Medium**.

5.6.12 **Additional Mitigation:** This PWS and its network will require further investigation by Principal Contractor prior to construction. Additional mitigation may include the demarcation of supply, appropriate design of standard good practice mitigation to avoid potential for impact on pipeline and source and a water quality monitoring plan.

5.6.13 **Residual Risk:** Assuming the implementation of the additional mitigation, the probability remains **Medium**, the magnitude of change is reduced to **Minor**, and there is a consequential residual risk of **Low**.

Mains of Ludquharn and Salish Lodge PWS (ID:18)

5.6.14 **Assessment notes:** Based on a questionnaire, the abstraction that supplies **Mains of Ludquharn and Salish Lodge** is a spring (404123, 845391). The spring is situated approximately 250 m northeast of the nearest proposed tower and 180 m northeast of nearest proposed access track, both of which are anticipated to require excavations >1 m. The spring is located adjacent to an unnamed watercourse / man-made drainage ditch and is downgradient of the proposed infrastructure. Additionally, the spring is directly downstream of two watercourse crossings which may influence the quality and / or quantity of surface water contributing to the spring.

5.6.15 According to the CSM, the underlying bedrock is a low productivity aquifer, with groundwater flow pathways constrained to weathered zones or fractures. The spring is downgradient of the nearest proposed tower and there is potential hydrological connection. This, combined with the intervening distance and the low productivity aquifer linking the spring and the nearest proposed infrastructure, results in the probability being **Medium**, with the magnitude of change being **Moderate**, and a consequential risk of **Medium**.

5.6.16 **Additional Mitigation:** This PWS and its network will require further investigation by Principal Contractor prior to construction. Additional mitigation may include the demarcation of supply, appropriate design of standard good practice mitigation to avoid potential for impact on pipeline and source and a water quality monitoring plan.

5.6.17 **Residual Risk:** Assuming the implementation of the additional mitigation, the probability remains **Medium**, the magnitude of change is reduced to **Minor**, and there is a consequential residual risk of **Low**.

6. CONCLUSION

6.1.1 A PWSRA has been conducted 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 AC on identified PWS within the Study Area, consultation with selected residents, OS mapping data, and site visits.

6.1.2 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 Proposed Development and the source, the local topographic conditions, hydrological conditions, and the underlying geology.

6.1.3 The PWS have been evaluated based on the information provided to determine the risks based on the prescribed matrix scenarios. To minimise the risk of construction activities (potentially impacting any PWS supply), mitigation measures have been outlined in **Section 5** which will be implemented by the Principal Contractor.

6.1.4 Standard good practice mitigation has been outlined in **Section 5** of this assessment and will be included within a CEMP which will be prepared by the Principal Contractor prior to construction. In addition to this mitigation, a PWSMP 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: Hydrology, Hydrogeology, Geology and Soils (Volume 1).**

6.1.5 Additional mitigation measures have been recommended for PWS at:

- Hill of Dens Cottage (ID: 9);
- Kinmundy Mains, Home Farm, Home Farm Cottage (ID: 14);
- Knockleith (ID: 16); and
- Tains of Ludquharn and Salish Lodge (ID: 18).

6.1.6 Mitigation measures should be agreed with owner / occupier and Aberdeenshire Council prior to works commencing.

6.1.7 For Hill of Dens Cottage (ID: 9), Kinmundy Mains, Home Farm, Home Farm Cottage (ID: 14), Knockleith (ID: 16) and Mains of Ludquharn and Salish Lodge (ID:18) assuming:

- The implementation of good practice measures to avoid potential for impact on pipeline and source;
- The demarcation of supply;
- The implementation of a water quality monitoring plan;
- The implementation of contingency measures (as described in **Section 5.5**) in the event of an unforeseen impact on the existing PWS arising from the construction and operational impact of the Proposed Development;

6.1.8 the consequential residual risk is reduced to **Low** or **Negligible.**

6.1.9 In the event that further information on PWS is obtained, this risk assessment should be updated to ensure that PWS are appropriately safeguarded.

6.2 Disclaimers and Limitations

6.2.1 This report has been prepared by WSP with all reasonable skill, care, and diligence for SSEN Transmission, for the specific purpose of assessing the risk to PWS posed from the construction and operation of the Proposed Development.

6.2.2 This report details the findings of the risk assessment considering information provided by AC, the relevant landowners and PWS users 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.

6.2.3 Due to restricted property access and the limited return of completed questionnaires, WSP encountered constraints in the assessment process. To address these limitations, WSP used professional experience in conjunction with a comprehensive desktop study to provide the most accurate and detailed information feasible.

6.2.4 WSP accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by WSP beforehand. Any such party relies upon the report at their own risk. WSP disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the services.

6.2.5 Owing to the inherent complexity of the subsurface, it is rarely possible to determine the mechanics of any hydrological system with absolute certainty. In this regard, investigations as part of this assessment will strive to determine the circumstances of each supply based on the evidence available to support this assessment. Where uncertainty exists associated with understanding the details of a PWS, or in accurately conceptualising the subsurface, this will be stated, and risks and assessment considered conservatively in accordance with the precautionary principle. Whilst the assessment assesses relative risk, no detailed quantitative risk assessment has been completed.

ANNEX A: PWS QUESTIONNAIRE

PRIVATE WATER SUPPLY QUESTIONNAIRE

Your details

Name: .....

Property name and address: .....

.....

Telephone number and/or email address: .....

If you are a tenant, please also provide your landlord's contact details:

Name: .....

Address: .....

Telephone number and/or email address: .....

Supply source type *(Please tick or specify if other)*

Borehole (please indicate approx. depth below) ☐ Well ☐ Spring ☐ River ☐

Lake ☐ Pond ☐ Stream ☐ Surface water ☐ Mains (Scottish Water) ☐

Other: .....

Supply source location

Source of supply known and marked on enclosed map? Yes ☐ No ☐

Approximate grid coordinates of source of supply: .....

Is water fed into a storage tank or reservoir prior to distribution? Yes ☐ No ☐

If yes, please provide grid coordinates for location of storage tank: .....

Supply uses *(Please tell us what the water is used for at your property – please tick as appropriate and tell us any other uses not listed)*

Domestic use ☐ Holiday let ☐ B&B/Hotel ☐ Catering ☐

Dairy farm ☐ Brewery ☐ Residential care home ☐ Tenanted property ☐

Livestock drinking water ☐

Other: .....

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ANNEX B: EXAMPLE MONITORING STRATEGY

Introduction

PWS Monitoring is recommended at properties that maintain a PWS source and where there is a source-pathway-receptor linkage to the Proposed Development.

Preconstruction monitoring can be used to establish baseline water levels and quality and assessment or trigger values to which routine monitoring data collected during construction can be compared against. These can be used to benchmark the effectiveness of pollution mitigation.

The final monitoring arrangements including the analytical suite, locations, frequency and escalation procedure will be outlined in the PWSMS and will be in agreement with SEPA and AC and is expected to be secured by way of planning condition.

Methodology

PWS Monitoring would be undertaken by an appropriately qualified and experienced contractor.

Monitoring methods will include visual and extractive, with the former comprising of pictures and notes on water conditions, weather, pollution, etc. The latter involves the collection of a water sample from the abstraction with analysis at a suitably accredited laboratory. All samples will be dispatched to the laboratory, under chilled conditions accompanied with the relevant chain of custody documentation. All samples will be dispatched to the laboratory within 24 hours of being collected.

An example analytical suite along with trigger values (assessment criteria) against which water quality results should be benchmarked is provided below.

Table B.1 – Example Monitoring Analytical Suite

Parameter	Units	Limit of Detection**	Method	Assessment Criteria*
pH	-	-	Probe	6.5-9.5
Colour	Pt/Co	1	Colorimetric	20
Electrical Conductivity	uS/cm	10	Potentiometric	2500
Alkalinity (as CaCO3)	mgCaCO3/L	3	Discrete Analyser	-
Calcium (dissolved)	mg/L	0.012	ICP-OES	-
Magnesium (dissolved)	mg/L	0.005	ICP-OES	-
Potassium (dissolved)	mg/L	0.025	ICP-OES	-
Sodium (dissolved)	mg/L	0.01	ICP-OES	200
Sulphate as SO4	mg/L	0.045	ICP-OES	250
Chloride	mg/L	0.15	Discrete Analyser	250
Orthophosphate (as PO4)	µg/L	62	Discrete Analyser	-
Nitrate (as N04)	mg/L	0.05	Colorimetric	50
Aluminium (dissolved)	µg/L	1	ICP-MS	200
Selenium (dissolved)	µg/L	0.6	ICP-MS	10
Iron (dissolved)	µg/L	0.004	ICP-OES	200
Manganese (dissolved)	µg/L	0.05	ICP-MS	50
Zinc (dissolved)	µg/L	0.5	ICP-MS	5000
Copper (dissolved)	µg/L	0.5	ICP-MS	10

Parameter	Units	Limit of Detection**	Method	Assessment Criteria*
Suspended Solids	mg/L	2	Gravimetric	-
Turbidity	NTU	1	Spectrophotometry	4
Dissolved Organic Carbon (DOC)	mg/L	0.1	TOC Analyser	-
TPH CWG inc BTEX & MTBE	µg/L	1 - 10	GC/MS	10
Total coliforms	MPN/100ml	0	-	0
E.coli	MPN/100ml	0	-	0
Enterococci	cfu/100mls	0	-	0
*PCV values taken from Statutory Instrument No. 209 - The Private Water Supplies (Scotland) Regulations 2006. Available at *https://www.legislation.gov.uk/ssi/2006/209/pdfs/ssi_20060209_en.pdf* (accessed November 2024). Total Petroleum Hydrocarbon Criteria Working Group (TPH CWG) PCV value taken from Statutory Instrument No. 2790 – The Private Water Supplies Regulations 1991 (revoked). Available at *http://www.legislation.gov.uk/uksi/1991/2790/made* (accessed November 2024).				
**Actual LOD may vary and can be confirmed with the nominated laboratory if required by the LPA				

Frequency and Duration

During the baseline (pre-construction) at least 12 monitoring visits should be undertaken across a minimum of 12 months and ideally capture a variety of flow and weather conditions. During the construction phase, monitoring should be monthly, but additional ad-hoc monitoring may also be required in the event of a spurious result or pollution incident. A period of post-construction monitoring should be undertaken with the frequency and duration subject to consultation with SEPA and AC.

Reporting

Reports summarising the results of water monitoring should be provided following the completion of each phase. Additional reporting requirements during the construction phase may be subject to consultation with SEPA and AC.

Trigger Levels and Escalation Procedures

Trigger levels refer to actions which must be taken in the event of an environmental incident that may affect a PWS. Trigger level actions could be required following the reporting of an incident by the Principal Contractor. In the event of a potential incident the Principal Contractor and the Environmental Clerk of Works (ECoW) would undertake a preliminary assessment to decide whether an incident requires an immediate stop to works. This should be undertaken as soon as possible following an incident being reported. In the event of a stop to works, a proportionate investigation should be undertaken to determine the cause for the impact and complete actions to minimise / mitigate any effects. Communication of any incident potentially affecting a PWS should be undertaken by the Project Manager or delegated representative as soon as possible. Depending on the scale of the incident, AC and SEPA may also need to be notified.

It is not proposed that the results of monitoring would trigger suspension of the construction works unless the results of the above assessment indicated a high risk to water quality if work is continued. Where exceedances have been recorded, a re-test of the samples may be requested, or confirmatory samples collected for confirmation of water quality degradation. This protocol should be included to avoid unnecessary cessation of site works on the basis of single results. Should works be suspended as a result of the monitoring values, the source of the problem would be investigated with emergency monitoring being undertaken and will continue whilst mitigation measures are being implemented. The duration of emergency monitoring will be determined based on the severity of the incident and following consultation with the Principal Contractor and the ECoW, and works would resume following consultation and approval with AC and SEPA.