

# Glendye Wind Farm Overhead Line Grid Connection

**Environmental Impact Assessment (EIA) Volume 4 | Appendix 9.5** 

Private Water Supply Risk Assessment
October 2025





# **APPENDIX 9.5: PRIVATE WATER SUPPLY RISK ASSESSMENT**

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Figure 9.5.1 Private Water Supplies



#### 1. INTRODUCTION

- 1.1.1 SLR Consulting Ltd (SLR) was commissioned by Scottish and Southern Electricity Networks (SSEN)
  Transmission to prepare a private water supply risk assessment (PWSRA) for the proposed Glendye Wind
  Farm Overhead Line Grid Connection (the Proposed Development).
- 1.1.2 This Technical Appendix considers the potential effects of the Proposed Development on the quality and quantity of water at Private Water Supply (PWS) sources within the study area. This includes a 500 m buffer of the Proposed Development, including the proposed overhead line (OHL) and new, temporary and existing access tracks that would be constructed or upgraded to facilitate construction and maintenance of the OHL, as agreed with consultees at the scoping stage of the Proposed Development. To complete the assessment a conceptual site model is presented, which uses a source-pathway-receptor linkage to assess the risk to each PWS. Where necessary, mitigation required to safeguard a water source is proposed.
- 1.1.3 The location of the PWS sources is shown on Figure 9.5.1 appended.
- 1.1.4 This Technical Appendix should be read in conjunction with Chapter 9 of the EIA Report which contains a detailed description of the local hydrology and hydrogeology, flow mechanisms and hydraulic properties of the soils and geology, the embedded mitigation incorporated in the development design, and an assessment of impacts on groundwater and surface water flows and quality.

#### 1.2 Survey Approach

- 1.2.1 This PWSRA forms an appendix to Chapter 9 of the EIA Report. The purpose of this assessment is to ascertain the potential risk to the identified PWS within the study area of the Proposed Development (see Section 9.3 in Chapter 9), as these could be affected due to construction and / or operation of the Proposed Development.
- 1.2.2 A data request was made to Aberdeenshire Council (AC) data for PWS sources within the study area. This data was then augmented with Ordnance Survey mapping and aerial photography.
- 1.2.3 Additional properties, and potential water users, were also identified following a programme of site-specific field investigation that involved visiting the properties within the study area, enquiring about their water use and source, and mapping water abstraction locations where permission was granted to do so. Further details on surrounding PWS sources were also obtained at public consultation events. A standard reporting questionnaire was used to ensure consistency of data collected.
- 1.2.4 The location of water sources (boreholes, springs, surface abstractions) and holding tanks etc. were recorded using a handheld GPS. When residents were unavailable on the day that the survey was conducted, questionnaires were left at properties requesting details of their water source or PWS be returned.
- 1.2.5 The field investigation was completed in May 2024, September 2024, February 2025, March 2025 and September 2025 by the author of this report and the assessment has been overseen and reviewed by Gordon Robb (BSc, MSc, MBA, C.WEM, FCIWEM), Technical Director (Hydrology and Hydrogeology) at SLR Consulting Limited. Mr Robb has more than 30 years' experience assessing renewable energy and electrical infrastructure projects and specifically their potential effects on soils, geology and the water environment. Based in Scotland, he has worked extensively across the country, including on sites in similar settings to the Proposed Development. A table outlining the relevant qualifications and experience of key personnel involved in the preparation of the EIA Report is provided in **Appendix 5.1**.



#### 1.3 Assessment Methodology and Report Structure

- 1.3.1 As required by the Scottish Environment Protection Agency (SEPA) groundwater abstraction impact assessment guidance<sup>1</sup>, this assessment has been undertaken by suitably qualified and experienced specialists (see **Appendix 5.1**).
- 1.3.2 The assessment has been undertaken with reference to SEPA's guidance<sup>1</sup> which sets out SEPA's expectations for assessing the impact of developments on groundwater abstractions, including both public and private water supplies. This guidance<sup>1</sup> applies to proposed infrastructure, both temporary and permanent, with the assumption that any temporary or permanent dewatering abstractions are unlikely to exceed 10 m<sup>3</sup>/ day.
- 1.3.3 SEPA recommends adopting a phased approach<sup>1</sup> to the assessment of risks to groundwater abstractions, with greater detail being required for higher risk sites or activities, as detailed below in **Table 1**.

Table 1: SEPA Methodology<sup>1</sup> – Assessment Steps

Step	Description
1	Identifying any Existing Groundwater Abstractions
	This covers both public and private water supply groundwater abstractions, both within and out with the Limit of Deviation (LoD). It is critical that it is the actual source of the abstraction, and not the property that it supplies, is identified.
	The relevant buffer zones for groundwater abstractions for all proposed infrastructure, both temporary and permanent (and provided expected dewatering rates do not exceed 10 m <sup>3</sup> / day), are:
	a) 10 m for all activities;
	b) 100 m radius of all subsurface activities less than 1 m in depth; and
	c) 250 m of all subsurface activities deeper than 1 m.
	Details of each private water supply source will require confirmation, including a site walkover survey. If there are no groundwater abstractions within the buffer zones, SEPA will not provide comment on this topic.
	If there are no groundwater abstractions within the buffer zones, there is no need to assess further and progress to Step 2.
2	Qualitative Impact Assessment
	A conceptual site model (CSM) should be provided as part of the Environmental Statement. This should include interpretation of the hydrogeological setting, including the groundwater flow regime. This may be supported, as appropriate, by intrusive ground investigation, groundwater monitoring, or groundwater modelling.
	Qualitative assessment of the potential impacts to any groundwater abstractions identified within the relevant buffer zones is required. This should consider the expected extent, magnitude, likelihood, and duration, frequency, and reversibility of any potential impacts.
	The impact assessment should consider the impacts to each groundwater abstraction individually, including any potential cumulative effects if the groundwater abstraction is near multiple parts of the Proposed Development.
	If the potential impacts to groundwater abstractions are considered low or less, no further risk assessment (e.g. Step 3) is required.
3	Detailed Quantitative Risk Assessment
	This would include characterisation of ground conditions at both the relevant infrastructure location(s) and the groundwater abstraction(s), plus the pathway(s) in between if appropriate. This will require ground investigation, including groundwater level and quality monitoring, to quantify the potential change(s) in groundwater levels or flow regime.

<sup>&</sup>lt;sup>1</sup> Scottish Environment Protection Agency (2024) Guidance on Assessing the Impacts of Developments on Groundwater Abstractions



Using this phased approach as recommended by SEPA – expanded to include surface water abstractions and the associated distribution pipework from both ground and surface water sources – the criteria outlined below in **Table 2** have also been applied to assess the potential risk to each PWS source from the Proposed Development.

**Table 2: Private Water Supply Risk Assessment Criteria** 

PWS Risk	Criteria
PWS source considered potentially at risk from the	PWS source is located within 10 m of any element of the Proposed Development;
Proposed Development	spring fed or groundwater source is located within 100 m of excavations less than 1 m deep (such as access tracks);
	spring fed or groundwater source is located within 250 m of excavations greater than 1 m deep (such pole foundations); and / or
	stream or surface water fed abstraction is located within the same surface water catchment and downstream of the Proposed Development.
PWS source is not considered at risk from the	PWS source is located at least 10 m away from any element of the Proposed Development;
Proposed Development, but distribution pipework may be	spring fed or groundwater source is not located within 100 m of excavations less than 1 m deep (such as access tracks);
impacted	spring fed or groundwater source is not located within 250 m of excavations greater than 1 m deep (such as pole foundations);
	stream abstraction is not located within the same surface water catchment and / or upstream of the Proposed Development;
	PWS source unconfirmed and need to be assessed prior to construction; and / or
	the distribution pipework between the PWS source and property may be crossed by the Proposed Development.
PWS source or pipework not considered to be at risk from	PWS source is located at least 10 m away from any element of the Proposed Development;
the Proposed Development	spring fed or groundwater source is not located within 100 m of excavations less than 1 m deep (such as access tracks);
	spring fed or groundwater source is not located within 250 m of excavations greater than 1 m deep (such as pole foundations);
	stream abstraction is not located within the same surface water catchment and / or upstream of the Proposed Development; and / or
	the distribution pipework between the PWS source and property will not be crossed by the Proposed Development.

- 1.3.4 The results of the PWS survey and assessment are presented in **Section 2** of this report in accordance with Step 1 of SEPA's guidance<sup>1</sup>. If any PWS are considered to be at risk from the Proposed Development, a qualitive risk assessment has been completed and is presented within **Section 3** of this report (in accordance with Step 2 of the SEPA guidance<sup>1</sup>).
- 1.3.5 Section 4 of this report gives detail of a potential water monitoring schedule and parameter list that could be used to monitor water quality at receptors with hydraulic linkage (e.g. flow pathway) to the Proposed Development. The monitoring frequency, parameter list and reporting programme would be subject to agreement with AC and SEPA should consent be granted, and it is anticipated water quality monitoring would be secured by an appropriately worded pre-commencement planning condition.



# 2. PRIVATE WATER SUPPLY RISK ASSESSMENT (STEP 1)

2.1.1 **Table 3** below presents information collected from the PWS field survey, returned questionnaires, data collected during the desk study and following consultation with AC. The results of the PWS survey are also shown on **Figure 9.5.1**. If a source lies within SEPA's **Error! Bookmark not defined.** specified buffers (as specified in their guidance document<sup>1</sup>) and has a hydraulic connection (e.g. a flow pathway) to the Proposed Development, a qualitative risk assessment and mitigation measures are provided, as detailed in **Section 3**.

The findings from **Table 3** (below) are summarised as follows:

- six PWS sources have been identified as potentially at risk from the Proposed Development (and are assessed further in Section 3);
- one PWS source is unconfirmed;
- one property area is confirmed to be on mains; and
- five PWS sources are assessed as not at risk from the Proposed Development.

**Table 3: Private Water Supply Risk Assessment** 

PWS ID (Figure 9.5.1)	Property Name	Data Source and Source Type	Location of PWS Source and Distance from the Proposed Development	Details	PWS Risk Assessment
PWS01	Bogburn Farm	Site Survey Spring	E 370843 / N 781680 Approximately 260 m southwest of the proposed temporary trackway and approximately 280 m southwest from pole 89.	Resident confirmed that the property and farm is supplied by a spring fed source which is located approximately 430 m northwest of the property and farm. Water is gravity fed from the spring to the properties and adjacent farmland.  No development is proposed within 250 m of the PWS source. The development will not cross any distribution pipework from the PWS source to the property. It is therefore considered that the PWS source and associated distribution pipework is not at risk from the Proposed Development.	PWS source and pipework not considered to be at risk.  No further assessment, monitoring or mitigation required.
PWS02	Woodland Cottage Glenfarquhar Lodge Herscha Crann Tara Templehill Croft	Returned Questionnaire Spring	E 371430 / N 781976 Approximately 25 m northwest of pole 83.	The resident for Crann Tara confirmed that the properties are supplied by a spring fed reservoir which is located approximately 715 m northwest of the properties at its closest extent. The reservoir is thought to be supplied by a spring which is located approximately 70 m northwest of the reservoir.  The PWS is located upstream but within 100 m of proposed temporary track, proposed new track and two pole locations	PWS source potentially at risk. Further assessment required (Step 2) – see Section 3.

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PWS ID (Figure 9.5.1)	Property Name	Data Source and Source Type	Location of PWS Source and Distance from the Proposed Development	Details	PWS Risk Assessment
				(poles 84 and 83). The PWS is therefore within the screening buffers given in SEPA's guidance and further assessment is required.	
PWS03	Tipperty	Site Survey Spring	E 372173 / N 782104 Approximately 195 m southwest of a proposed temporary access track.	Resident confirmed that the property and farm is supplied by a spring fed source which is located approximately 400 m west of the property and farm, near the Burn of Bankhead.  The only part of the Proposed Development within 250 m of the PWS are temporary trackway panels. The temporary access track is located >100 m from the PWS source and excavations associated with the temporary access track will be <1 m deep. It is therefore considered that PWS source is not at risk from the Proposed Development.  The Proposed Development will not cross any distribution pipework from the PWS source to the property. It is therefore considered that the PWS source and associated distributed pipework will not be at risk from the Proposed Development.	PWS source and pipework not considered to be at risk.  No further assessment, monitoring or mitigation required.
PWS04	Corsebauld Farm and Cottage	AC Unknown	E 372278 / N 782800 (approximate property location) Approximately 90 m northeast of a proposed access track and 230 m south of proposed pole 69.	The property has been visited twice (in September 2024 and September 2025), and the residents were unavailable during both surveys. Questionnaires have been left on both occasions and neither have been returned at the time of reporting. AC data suggest the properties are supplied by a PWS source although the location and details of the PWS source are currently unknown.  Should the project gain planning consent and prior to construction, the location and risk to the PWS should be confirmed.	PWS source will need to be confirmed.
PWS05	Chapelton Croft West Bogton	Site Survey Spring	E 373412 / N 783811 Approximately 90 m southeast of the proposed pole 54.	Residents at West Bogton confirmed that the two properties are supplied by a spring fed source which is located approximately 450 m north of West Bogton. Water is gravity-fed from the PWS source to West Bogton before it is piped onto Chapelton Croft.	PWS source potentially at risk. Further assessment required (Step 2) – see Section 3.

PWS ID (Figure 9.5.1)	Property Name	Data Source and Source Type	Location of PWS Source and Distance from the Proposed Development	Details	PWS Risk Assessment
				Part of the Proposed Development including part of an existing access track which is scheduled to be upgraded, temporary access tracks and poles 52 to 56 are within 250 m of the PWS source. The PWS is therefore within the screening buffers given in SEPA's guidance <sup>1</sup> and further assessment is required.	
PWS06	Bogton Westburn Cottage Westburn House	Site Survey Spring	E 373917 / N 783999 Approximately 160 m south of the proposed pole 49.	Residents confirmed that the properties are supplied by a spring fed source which is located approximately 270 m north of the properties.  Part of the Proposed Development including temporary access tracks and poles 48 to 50 are within 250 m of the PWS source. The PWS is therefore within the screening buffers given in SEPA's guidance <sup>1</sup> and further assessment is required.	PWS source potentially at risk. Further assessment required (Step 2) – see Section 3.
PWS07	Brawliemuir Farm Brawliemuir Steading Mosshead Knowe	Site Survey Spring	E 374707 / N 784489 Approximately 50 m east of the proposed pole 41.	Residents confirmed that the properties are supplied by a spring fed source which is located between 550 m northeast and 1.3 km north of the properties. Water is diverted from the spring to a holding tank approximately 260 m southwest of the source (at E 374667 / N 784237) before it is gravity fed to the three properties. Part of the Proposed Development including temporary access tracks, proposed ATV access tracks and poles 39 to 42 are no within 250 m of the PWS source. The PWS is therefore within the screening buffers given in SEPA's guidance <sup>1</sup> and further assessment is required.	PWS source potentially at risk.  Further assessment required (Step 2) – see Section 3.
PWS08	Inchbreck House and Mains of Inchbreck	OS mapping Mains	E 374922 / N 783435 (property location) Approximately 320 m southwest of an existing track which is scheduled to be upgraded.	Residents have confirmed that the properties are supplied by mains. No further assessment is required.	Properties on mains.  No further assessment, monitoring or mitigation required.

PWS ID (Figure 9.5.1)	Property Name	Data Source and Source Type	Location of PWS Source and Distance from the Proposed Development	Details	PWS Risk Assessment
PWS09	Cairnmoss Braeview Moss Side of Lawgavin Brae Schoolhouse Lawgavin Cottage Goosecruives Steading Goosecruives Farm Wester Cotbank	AC data Spring	E 375878 / N 782780  1.1 km southeast of an existing access track which is scheduled to be upgraded.	Residents at Cairnmoss have confirmed that the properties are supplied by a spring fed source which is located approximately 380 m south of Wester Cotbank.  No development is proposed upgradient of the properties or within 250 m of the PWS source. It is therefore considered that if the properties are supplied by a PWS source, it will not be at risk from the Proposed Development. The development is also unlikely to cross any distribution pipework from the PWS source to the properties.	PWS source and pipework not considered to be at risk.  No further assessment, monitoring or mitigation required.
PWS10	Bogjurgan Farmhouse Bogjurgan Steading	Site Survey Spring	E 375457 / N 784665 Approximately 130 m south of proposed pole 34.	The residents confirmed that the properties are supplied by a spring fed source which is located approximately 370 m north of the properties.  Part of the Proposed Development including temporary access tracks, proposed ATV tracks and poles 32 to 36 are within 250 m of the PWS source. The PWS is therefore within the screening buffers given in SEPA's guidance <sup>1</sup> and further assessment is required.	PWS source potentially at risk.  Further assessment required (Step 2) – see Section 3.
PWS11	Cleuch Head Kennels	Returned Questionnaire Spring (unconfirmed)	E 376026 / N 784869 Approximately 80 m south of proposed pole 28.	The residents confirmed that the properties are supplied by a spring fed source which is located at the top of the field north of the property.  Part of the Proposed Development including temporary trackways, proposed new permanent access tracks, proposed ATV routes, poles 26 to 30 and temporary pulling station are within 250 m of the assumed PWS source. The PWS source is therefore within the screening buffers given in SEPA's guidance and further assessment is required.	PWS source is potentially at risk. Further assessment required (Step 2) – see Section 3.

PWS ID (Figure 9.5.1)	Property Name	Data Source and Source Type	Location of PWS Source and Distance from the Proposed Development	Details	PWS Risk Assessment
	East Town Farm East Town Cottages	Site Survey Spring	Approximately 460 m south of proposed pole 23.	Residents confirmed that the properties are supplied by a spring fed sunken holding tank which is located approximately 310 m northwest of the East Town Farm.  No development is located within 250 m of the spring fed tank. The development will not cross any distribution pipework from the PWS source to the property. It is therefore considered that the PWS source and associated distributed pipework will not be at risk from the Proposed Development.	PWS source and pipework not considered to be at risk.  No further assessment, monitoring or mitigation required.



# 3. QUALITATIVE IMPACT ASSESSMENT (STEP 2)

3.1.1 This Section of the report provides assessment of private water supplies which have been identified as potentially at risk from the Proposed Development.

#### 3.2 Embedded Mitigation and Good Practice Measures

- 3.2.1 Chapter 9 of the EIA Report details the mitigation measures that would be deployed and used to safeguard the water environment and abstractions during the construction and operational phases of the Proposed Development. Of relevance to this report and assessment are the following:
  - The commitment to use good practice construction techniques and procedures that have been agreed with statutory consultees, including SEPA and NatureScot. These are set out within the Applicant's General Environmental Management Plans (GEMPs), included in **Appendix 3.5** of the EIA;
  - The production of a project specific Construction and Environmental Management Plan (CEMP) which would be agreed with statutory consultees prior to commencement of any works;
  - The deployment of an Environmental Clerk of Works (EnvCoW) to oversee all works and with the authority
    to cease works should a risk to the water environment (e.g. change in water flow or quality) become
    apparent;
  - The use of a Limit of Deviation (LoD) to allow micrositting of the Proposed Development including pole locations and access tracks;
  - The commitment that the Principal Contractor and Applicant will ensure that all PWS sources and infrastructure are known prior to any construction being undertaken; and
  - A commitment to undertake preconstruction (baseline), construction and post construction water quality monitoring and reporting.

# 3.3 Assessment of PWS02 (Woodland Cottage, Glenfarquhar Lodge, Herscha, Crann Tara and Templehill Croft)

Table 4: PWS02 - Summary Details

Descriptor	Details
Date Visited	September 2024
Source Type	Spring-fed reservoir
Location	E 371430 / N 781976
	Approximately 25 m northwest of pole 83.
Photograph of Source	N/A (Questionnaire Response by Resident)

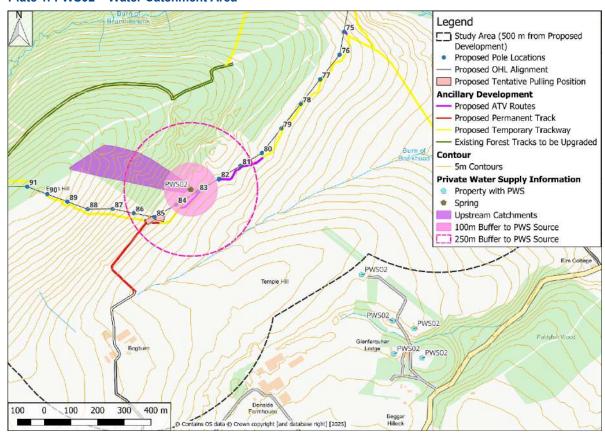
- 3.3.1 Ground elevations locally fall southeast towards the Burn of Bankhead, a tributary of the Bervie Water. Published geology plans show that the source is located on micaceous psammites of the Glen Lethnot Grit Formation. No superficial deposits are mapped at the PWS source location. The bedrock has been designated as a low productivity aquifer whereby small amounts of groundwater may be present within the upper weathered surface or secondary fractures. It is therefore considered that the groundwater flow is likely to follow local surface gradients.
- 3.3.2 The upstream catchment (which can be used as a reliable proxy for a spring catchment area in this site setting) has been delineated using the 5 m contours extracted from the OS 5m Digital Terrain Model (DTM) and is presented below on Plate 1.

The water catchment is shown to extend to the northwest. No development is proposed within the upstream catchment. The following development is proposed within 250 m of the spring / reservoir; six poles (81 to 86), a

Appendix 9.5: Private Water Supply Risk Assessment October 2025

temporary pulling station, 160 m of temporary access track, 250 m of ATV track and 100 m of proposed permanent access tracks.

Plate 1: PWS02 - Water Catchment Area



3.3.3 **Table 5** presents a qualitative risk assessment of PWS02. No significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance<sup>1</sup>, e.g. a quantitative risk assessment.

Table 5: PWS02 - Qualitive Risk Assessment

Descriptor	Assessment
Risk to Water Quality	No development is proposed within upstream catchment to the PWS source and therefore no impacts to the water quality which sustains the PWS source would occur.
Risk to Water Quantity	The PWS source likely intercepts water from shallow weathered bedrock.
	Works associated with access tracks, proposed pole construction and temporary pulling station compounds are proposed within 100 m and 250 m of the PWS source.
	Works associated with the access tracks will be limited to excavations which are <1 m deep. Within 100 m of the PWS source works will be limited to shallow surface dressing associated with temporary access tracks. No construction activities are required for the proposed ATV route.
	Excavations required to establish the poles are also shallow (<3 m) very small compared to the catchment area to the spring. Poles will be constructed sequentially and foundations not left open for a prolonged period and thus no significant dewatering is required to facilitate construction of the poles.
	No permanent dewatering is required for any element of the Proposed Development.
	No short or long-term effect on water levels of flow direction is expected and therefore no detrimental effect on the yield to the PWS source is anticipated.



Descriptor	Assessment
	The distribution pipework from the reservoir to the properties is likely to be crossed by the Proposed Development. This pipework needs to be protected to maintain existing water quantity.
Recommendation	The PWS source should be clearly marked, and no development should occur within 10 m of the spring / reservoir.
	The distribution pipework should also be marked and protected.
	Confirmatory baseline, construction and post construction water level / flow and quality monitoring at the PWS source should be undertaken.
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.
Overall Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard surface water and groundwater which sustains this PWS source. The likelihood and magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not significant.

## 3.4 Assessment of PWS05 (Chapelton Croft and West Bogton)

## Table 6: PWS05 - Summary Details

Descriptor	Details
Date Visited	September 2024
Source Type	Spring
Location	E 373412 / N 783811 Approximately 90 m southwest of the proposed pole 54.
Photograph of Source	

3.4.1 Ground elevations locally fall to the southeast, towards the Burn of Guinea (which is part of the larger Bervie Water surface water catchment). Published geology plans show that the source is located on glacial till

deposits which are underlain by psammites, pelites and semipelites of the Glen Lethnot Grit Formation. Sand and gravel in the glacial till can yield groundwater but typically yields are low and unreliable given the variation in thickness and extent of the sand and gravel. The upper weathered surface of the bedrock can sustain small groundwater abstractions. In both deposits groundwater flow is likely to follow local surface gradients (e.g. be approximated by the upstream surface water catchment).

3.4.2 The water catchment (**Plate 2**, below) is shown to extend to the northwest of the PWS source. Approximately 150 m of existing tracks which are scheduled to be upgraded, 100 m of proposed temporary track and proposed pole 54 are within the upstream catchment. Five poles (52 to 56), approximately 260 m of existing access tracks which are scheduled to be upgraded and approximately 530 m of temporary access tracks are noted within 250 m of the PWS source.

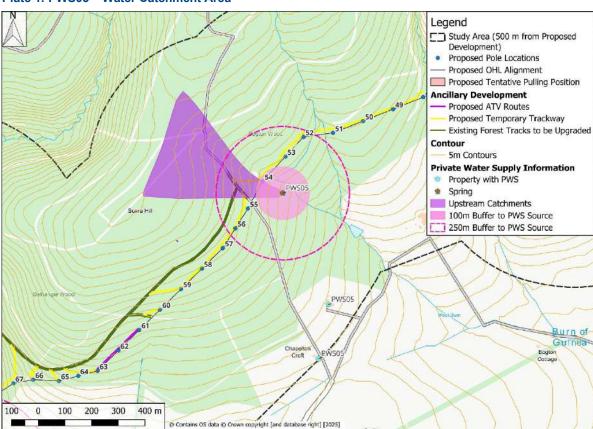


Plate 1: PWS05 - Water Catchment Area

3.4.3 **Table 7** below presents a qualitative risk assessment of PWS05. No significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance<sup>1</sup>, e.g. a quantitative risk assessment.

Table 7: PWS05 - Qualitative Risk Assessment

Descriptor	Assessment
Risk to Water Quality	Elements of the Proposed Development are noted upstream of the PWS source. The shallow groundwater flow is vulnerable to pollution.
Risk to Water Quantity	PWS source likely abstracts water from the glacial till and/or shallow weathered bedrock which catchment will follow local surface gradients.  Works associated with existing and temporary access tracks and proposed pole construction are proposed within 100 m and 250 m of the PWS source.  Works associated with the access tracks will be limited to excavations which are <1 m deep. No access tracks are noted within 100 m of the PWS source.

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Descriptor	Assessment
	Excavations required to establish the poles are shallow (<3 m) and very small compared to the likely water catchment area. No permanent dewatering is required to facilitate construction or operation of the poles.
	No short or long-term effect on water levels or flow direction is expected and therefore no detrimental effect on the yield to the PWS source would occur.
Recommendation	The PWS should be clearly marked, and no development should occur within 10 m of the PWS source.
	Works within the PWS surface water catchment should be supervised and measures deployed to prevent and minimise the generation of pollutants and suspended solids (these measures should form part of the final agreed CEMP).
	Confirmatory baseline, construction and post construction water level/flow and quality monitoring at the PWS source should be undertaken.
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.
Overal Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard water which sustains this PWS source. The likelihood and magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not significant.

# 3.5 Assessment of PWS06 (Bogton, Westburn Cottage and Westburn House)

## Table 8: PWS06 - Summary Details

Descriptor	Details
Date Visited	September 2024
Source Type	Spring
Location	E 373917 / N 783999
	160 m south of the proposed pole 49
Photograph of Source	

- 3.5.1 Ground elevations locally fall to the southeast, towards an unnamed tributary of the Burn of Guinea (which is part of the larger Bervie Water surface water catchment). Published geology plans show that the source is located on glacial till deposits which are underlain by psammites, pelites and semipelites of the Glen Lethnot Grit Formation. Sand and gravel in the glacial till can yield groundwater but typically yields are low and unreliable given the variation in thickness and extent of the sand and gravel. The upper weathered surface of the bedrock can sustain small groundwater abstractions. In both deposits groundwater flow is likely to follow local surface gradients (e.g. be approximated by the upstream surface water catchment).
- 3.5.2 The water catchment (**Plate 3**, below) is shown to extend to the northwest of the PWS source. Approximately 110 m of proposed temporary track is noted within the upstream catchment. Four poles (47 to 50), approximately 290 m of temporary access tracks and 10 m of proposed ATV track are noted within 250 m of the PWS source.

Legend Study Area (500 m from Proposed Development) Proposed Pole Locations Proposed OHL Alignment Proposed Tentative Pulling Position **Ancillary Development** Proposed ATV Routes Proposed Permanent Track Proposed Temporary Trackway Existing Forest Tracks to be Upgraded Existing Field Tracks to be Upgraded 5m Contours Private Water Supply Information Property with PWS Spring Upstream Catchments 100m Buffer to PWS Source 250m Buffer to PWS Source PWS06 PWS06

Plate 2: PWS06 - Water Catchment Area

3.5.3 Table 9, below, presents a qualitative risk assessment of PWS06. No significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance Error! Bookmark not defined., e.g. a quantitative risk assessment.

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Table 9: PWS06 - Qualitative Risk Assessment

400 m

Descriptor	Assessment
Risk to Water Quality	Elements of the Proposed Development are located upstream of the PWS source, although they are limited to the construction / use and removal of a temporary access track.
	Shallow groundwater flow is vulnerable to pollution.
Risk to Water Quantity	The PWS source likely abstracts water from the glacial till and shallow weathered bedrock.

Appendix 9.5: Private Water Supply Risk Assessment

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200 300

Descriptor	Assessment
	Works associated with temporary access tracks and proposed pole construction are proposed within 250 m of the PWS source. No development is proposed within 10 m or 100 m of the PWS source.
	Works associated with the access tracks will be limited to excavations which are <1 m deep. No access tracks are noted within 100 m of the PWS source.
	Excavations required to establish the poles are shallow (<3 m deep) and very small and shallow compared to the groundwater catchment area. No permanent dewatering is required to facilitate construction or operation of the poles.
	No short or long-term effect on water levels of flow direction is expected and therefore no detrimental effect on the yield to the PWS source would occur.
Recommendation	The PWS source should be clearly marked, and no development should occur within 10 m of the PWS source.
	Works within the PWS surface water catchment should be supervised and measures deployed to prevent and minimise the generation of pollutants and suspended solids (these measures should form part of the final agreed CEMP).
	Confirmatory baseline, construction and post construction water level/flow and quality monitoring at the PWS source should be undertaken.
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.
Overal Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard surface water and groundwater which sustains this PWS source. The likelihood and

## 3.6 Assessment of PWS07 (Brawliemuir Farm, Brawliemuir Steading and Mosshead Knowe)

significant.

## Table 10: PWS07 - Summary Details

Descriptor	Details
Date Visited	March 2025
Source Type	Spring
Location	E 374707 / N 784489
	Approximately 50 m east of the proposed pole 41

magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not

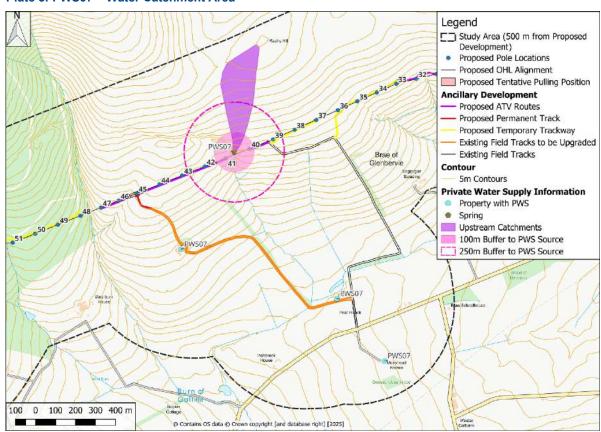


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Descriptor	Details
Photograph of Source	

- 3.6.1 Ground elevations locally fall to the southwest, towards an unnamed tributary of the Burn of Guinea (which is part of the larger Bervie Water surface water catchment). Published geology plans show that the source is located on psammites, pelites and semipelites of the Glen Lethnot Grit Formation. No superficial deposits are mapped at the PWS source location. The bedrock has been designated as a low productivity aquifer whereby small amounts of groundwater may be present within the upper weathered surface or secondary fractures. It is therefore considered that the groundwater source is shallow and flow is likely to follow local surface gradients.
- 3.6.2 The water catchment (**Plate 4**, below) is shown to extend to the northeast of the PWS source. No development is noted within the upstream catchment. Four poles (39 to 42), approximately 70 m of temporary access track and 300 m of proposed ATV track are noted within 250 m of the PWS source.

Plate 3: PWS07 - Water Catchment Area



3.6.3 Table 11 below presents a qualitative risk assessment of PWS07 and shows no significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance Error! Bookmark not defined., e.g. a quantitative risk assessment.

Table 11: PWS07 - Qualitative Risk Assessment

Descriptor	Assessment
Risk to Water Quality	No development is proposed within the upstream catchment to the PWS source and therefore no impacts to the water quality which sustains the PWS source are anticipated.
Risk to Water Quantity	PWS source likely abstracts from water from the shallow weathered bedrock and catchment area will follow local surface gradients.
	Works associated with the use of ATV access tracks and proposed pole construction are proposed within 100 m and 250 m of the PWS source.
	No construction activities are required for the proposed ATV tracks.
	Excavations required to establish the pole foundations are shallow (<3 m deep) and very small compared to the water catchment area to the spring. No permanent dewatering is required to facilitate construction or operation of the poles.
	No short or long-term effect on water levels of flow direction is expected and therefore no detrimental effect on the yield to the PWS source is anticipated.
	The distribution pipework from the PWS source to the properties could be crossed by the Proposed Development. This pipework needs to be protected to maintain existing water quantity.
Recommendation	The PWS source should be clearly marked, and no development should occur within 10 m of it.
	The distribution pipework should also be marked and protected if required.

Appendix 9.5: Private Water Supply Risk Assessment



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Descriptor	Assessment
	Confirmatory baseline, construction and post construction water level/flow and quality monitoring at the PWS source should be undertaken.
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.
Overal Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard surface water and groundwater which sustains this PWS source. The likelihood and magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not significant.

# 3.7 Assessment of PWS10 (Bogjurgan Farmhouse and Bogjurgan Steading)

#### Table 12: PWS10 - Summary Details

Descriptor	Details		
Date Visited	September 2024		
Source Type	Spring		
Location	E 375457 / N 784665		
	Approximately 130 m south of proposed pole 34		
Photograph of Source			

- 3.7.1 Ground elevations locally fall to the southeast, towards an unnamed tributary of the Carron Water. Published geology plans show that the source is located on an igneous deposits (North Britain Siluro-Devonian Calcalkaline Dyke Suite), which are intruded into the surrounding metamorphic bedrock. Both the igneous and metamorphic bedrock units have been designated as a low productivity aquifer whereby small amounts of groundwater may be present within the upper weathered surface or secondary fractures. It is therefore considered that the groundwater flow is likely to follow local surface gradients.
- 3.7.2 The spring is located in a minor watercourse valley and it is possible that there is a hydraulic connection between the watercourse and the spring given their relative proximity.

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3.7.3 The water catchment (**Plate 6**, below) extends to the northwest of the PWS source. Approximately 90 m of proposed temporary track is located within the upstream catchment. Five poles (32 to 36), approximately 460 m of temporary access track and 100 m of proposed ATV track are located within 250 m of the PWS source.

Plate 4: PWS10 - Water Catchment Area

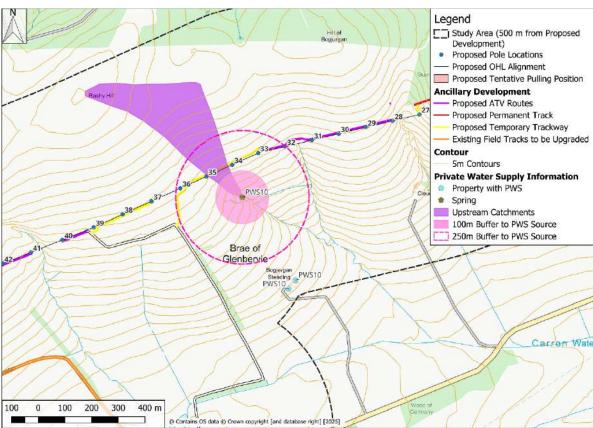


Table 13, below, presents a qualitative risk assessment of PWS10 and confirms no significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance Error!

Bookmark not defined., e.g. a quantitative risk assessment.

Table 13: PWS10 - Qualitative Risk Assessment

Descriptor	Assessment
Risk to Water Quality	Elements of the Proposed Development are noted upstream and within the water catchment of the PWS source, although it is noted that these are restricted to the use of temporary trackway. The shallow groundwater flow is vulnerable to pollution.
Risk to Water Quantity	The PWS source likely abstracts water from the shallow weathered bedrock which will follow local surface gradients. There may be a connection to surface water in the adjacent watercourse.
	ATV route, temporary trackway and OHL poles are proposed within 250 m of the PWS source. No development is proposed within 100 m of the PWS source.
	Works associated with the access tracks will be limited. ATV tracks and trackway do not require excavation of soils.
	Excavations required to establish the poles are shallow (<3 m deep) and are very small and localised compared to the water catchment area to the PWS source. No permanent dewatering is required to facilitate construction or operation of the OHL poles.
	No short or long-term effect on water levels of flow direction is expected and therefore no detrimental effect on the yield to the PWS source would occur.



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Descriptor	Assessment	
Recommendation	The PWS should be clearly marked, and no development should occur within 10 m of the PWS source.	
	Works within the PWS surface water catchment should be supervised and measures deployed to prevent and minimise the generation of pollutants and suspended solids (these measures should form part of the final agreed CEMP).	
	Confirmatory baseline, construction and post construction water level / flow and quality monitoring at the PWS source should be undertaken.	
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.	
Overal Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard surface water and groundwater which sustains this PWS source. The likelihood and magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not significant.	

#### 3.8 Assessment of PWS11 (Cleuch Head Kennels)

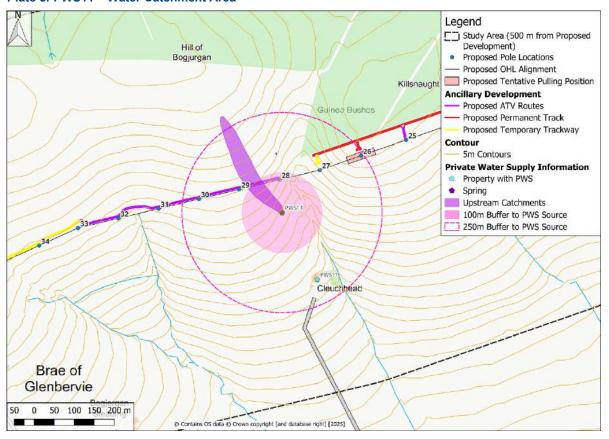
Table 14: PWS11 - Summary Details

Descriptor	Details		
Date Visited	September 2024 and September 2025		
Source Type	Spring		
Location	E 376026 / N 784869 Approximately 80 m south of proposed pole 28.		
Photograph of Source			

- 3.8.1 Ground elevations locally fall to the south, towards an unnamed tributary of the Carron Water. Published geology plans show that the source is located on psammite of the Glen Lethnot Grit Formation. The bedrock has been designated as a low productivity aquifer whereby small amounts of groundwater may be present within the upper weathered surface or secondary fractures. It is therefore considered that the groundwater flow is likely to follow local surface gradients.
- 3.8.2 The water catchment (**Plate 7**, below) is shown to extend to the northwest of the PWS source. Approximately 40 m of proposed ATV track is located within the upstream catchment. Five poles (26 to 30), a proposed

temporary pulling station, approximately 20 m of temporary trackway, 250 m of proposed ATV track and 100 m of proposed permanent access track are located within 250 m of the PWS source.

Plate 5: PWS11 - Water Catchment Area



3.8.3 **Table 15,** below, presents a qualitative risk assessment of PWS11 and confirms no significant risk is identified to the PWS source and therefore there is no requirement to progress to Step 3 of SEPA's guidance**Error! Bookmark not defined.**, e.g. a quantitative risk assessment.

Table 15: PWS11 - Qualitative Risk Assessment

Descriptor	Assessment
Risk to Water Quality	The only element of the Proposed Development upstream of the PWS source is the proposed ATV track. No construction activities are associated with the ATV track. Therefore, no impacts to the water quality which sustains the PWS are anticipated.
Risk to Water Quantity	The PWS source likely abstracts water from the shallow weathered bedrock which has a surface water catchment that can be approximated by the surface water catchment to the source.
	Works associated with ATV and permanent tracks, temporary pulling position and proposed pole construction are proposed within 250 m of the PWS source.
	Works associated with the access tracks and pulling position will be limited to excavations which are <1 m deep. The only tracks within 100 m of the PWS source are the proposed ATV access tracks and no construction activities are required to establish these.
	Excavations required to establish the poles are shallow (<3 m deep) and very small compared to the water catchment area to the PWS source. No permanent dewatering is required to facilitate construction or operation of the poles.

Appendix 9.5: Private Water Supply Risk Assessment October 2025



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Descriptor	Assessment
	No short or long-term effect on water levels of flow direction is expected and therefore no detrimental effect on the yield to the PWS source is anticipated.
Recommendation	The PWS should be clearly marked, and no development should occur within 10 m of the PWS source.
	Confirmatory baseline, construction and post construction water level/flow and quality monitoring at the PWS source should be undertaken.
Additional Mitigation	None over and above that specified in <b>Chapter 9</b> of the EIA report.
Overal Risk Assessment	The controls which would be adopted during construction and operation of the Proposed Development, which are in accordance with good practice (see <b>Chapter 9</b> of the EIA) and will be agreed in the CEMP, will safeguard surface water and groundwater which sustains this PWS source. The likelihood and magnitude of impact on the PWS source is therefore assessed as negligible, and the resultant significance of effect is assessed as negligible and not significant.



#### 4. EXAMPLE MONITORING AND CONTINGENCY PLAN

- 4.1.1 Monitoring of the surface water catchments that drain from the Proposed Development, including those that drain the River Dee Special Area of Conservation (SAC), and PWS sources identified as at risk from the Proposed Development (as identified in **Section 3**) has been recommended to confirm that the embedded mitigation included in the development design and committed to in the EIA Report are effective and that there is no impairment of the water environment and water sources.
- 4.1.2 Pre-development monitoring data can be used to establish baseline water levels, flows, and quality, as well as to define assessment or trigger values against which routine monitoring data collected during construction can be compared.
- 4.1.3 A separate water monitoring and reporting plan would be developed during the detailed project design phase.

  The monitoring programme would be secured by a pre-development planning condition to be agreed with AC. It is expected that the water monitoring plan would contain the following:
  - in accordance with SEPA guidance<sup>1</sup>, monthly baseline monitoring for a period of at least 12 months, fortnightly monitoring at PWS sources and monthly at other locations, and post construction monitoring at a frequency of not less than monthly;
  - location of proposed monitoring locations (NGR and plan);
  - proposals for baseline, construction and post construction monitoring and reporting;
  - commitment to prepare and adhere to a pollution incident response plan; and
  - a commitment to maintain wholesome water supplies at all private water supply sources.
- 4.1.4 **Table 16**, below, shows an example schedule which could be used as a basis to agree a water monitoring protocol with AC.



**Table 16: Example Monitoring Protocol\*** 

Location	Frequency	Determine and Suite <sup>1</sup>
PWS05 PWS06 PWS07 PWS10 PWS11 Surface water catchments that drain the Proposed Development, including those that drain to the River Dee SAC	Monthly for 12 months prior to, during construction and 12 months post construction.	Field Sampling  pH  Electrical conductivity  Dissolved Oxygen  Redox  Temperature  Water Level and / or flow Extractive Samples  Chloride  Alkalinity  Sulphate  Sodium  Potassium  Calcium  Magnesium  Ammoniacal Nitrogen  Nitrate  Nitrite  Orthophosphate  Biological Oxygen Demand  Chemical Oxygen Demand  Iron (total and dissolved)  Manganese (total and dissolved)  Manganese (total and dissolved)  Total suspended solids  Dissolved organic carbon  Colour  Turbidity

<sup>\*</sup> Monitoring locations, suite and frequency to be agreed with statutory consultees

# 4.2 Monitoring and Reporting Personnel

4.2.1 The monitoring and reporting would be undertaken by appropriately experienced and trained staff.

#### 4.3 Monitoring Methodology

- 4.3.1 Water samples would be collected following guidance within SEPA, July 2003, Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water, v2<sup>2</sup> (specifically **Section 9** thereof).
- 4.3.2 Prevailing weather conditions, qualitative flow conditions as well as other visual indicators would be recorded in order to aid the sample reporting.
- 4.3.3 The water samples would be placed directly into appropriate sterile bottles, which would be labelled and dispatched to a UKAS accredited laboratory under chilled conditions and accompanied by the relevant chain of custody documentation.

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<sup>&</sup>lt;sup>2</sup> SEPA (2003) Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water, Version 2 https://www.sepa.org.uk/media/28992/guidance-on-monitoring-of-landfill-leachate-groundwater-and-surface-water.pdf



#### 4.4 Example Intervention Strategy

4.4.1 In the unlikely event that the routine monitoring data recorded potential pollution at a private water supply, an investigation would be undertaken and intervention strategy would be implemented. The details of this would be agreed prior to any construction and secured by an appropriately worded pre-commencement planning condition.

Alerting Potentially Affected Properties

- 4.4.2 Contact details (land and mobile numbers / email addresses) for private water supply users would be maintained by site management at all times.
- 4.4.3 In the event that monitoring data collected at any private water supply is above the baseline monitoring record and above prescribed regulatory standards<sup>3</sup>,<sup>4</sup> then property owners would be advised and repeat water sampling undertaken (if agreed with the property owners). Property owners would be advised within 24 hours of receipt of monitoring results. Repeat water sampling would be undertaken as soon as reasonably practicable and within 72 hours.
- 4.4.4 Details of any affected property would be reported to AC within the timeframe as agreed with AC when the monitoring programme was agreed and finalised.

#### 4.5 Provision of Alternative Water Supplies

- 4.5.1 The Applicant commits to maintaining the yield and wholesomeness of water supplies.
- 4.5.2 The following measures may be deployed in the unlikely event a private water supply is impaired by the works:
  - at a property, 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); and
  - provision of an alternative water source (e.g. spring, borehole, alternative surface water abstraction location) in the event of a permanent derogation of a water supply.
- 4.5.3 In the event of an alternative water source being implemented, AC and SEPA would be advised as soon as is practical.

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Appendix 9.5: Private Water Supply Risk Assessment

<sup>&</sup>lt;sup>3</sup> Scottish Government (2006) Private Water Supplies (Scotland) Regulations

<sup>&</sup>lt;sup>4</sup> Scottish Government (2017) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations

