

# **PWS Assessment**

## Introduction

This appendix is to support the Hydrology, Hydrogeology, Geology and Soils Chapter of the Environmental Appraisals for

- i) Cambushinnie Substation;
- ii) Underground Cable Connection (UGC);
- iii) Overhead line (OHL) tie-ins; and
- iv) Haul Road.

Herein, iii), is to be defined as the "Proposed Development". In each case, the Environmental Appraisal should be read in conjunction with the respective chapter.

Private Water Supply (PWS) data was received from Perth & Kinross Council (PKC) on the 17<sup>th</sup> of January 2024 and from Stirling Council on the 31<sup>st</sup> of January 2024 (see Table 3).

Letters were sent out to property owners targeting potential PWS which were at risk, to confirm their location, usage and source of supply. One response was received on the 20<sup>th</sup> of February 2024 from the owner at Calzieveg. They confirmed the location and the usage of the PWS as well as provided information of the surrounding properties. House of Feddal PWS responded on the 6<sup>th</sup> June 2024, confirming that their PWS is no longer in use. They provided further details on the 30<sup>th</sup> of August by phone to the SSENT communities manager. A response from Blairmore PWS was received on the 2<sup>nd</sup> of September 2024. They noted that they recently failed their annual testing water quality due to heavy rain which reduced the efficiency of the treatment.

# Methodology

A three-step process was conducted for assessing the likely risk to a PWS. For this assessment a 1 km study area was used.

**Step 1:** Screen out any data points which are not required to be assessed as there is no known risk (i.e. no impact pathway, PWS no longer in use or well out of study area).

**Step 2:** Assess a general risk rating based on distance from the Proposed Development (see Table 1). Before assessing the source-pathway-receptor impact in Step 3, an initial risk assessment has been applied. Where a PWS is located within 50 m of a component of the Proposed Development or where construction works may occur it was considered to be in a high-risk zone. Between 50 to 250 m is considered to be a moderate risk, and excess of 250 m is considered to be low risk.

| Distance<br>(m)  | Risk<br>Factor | Justification  |
|------------------|----------------|--|
| 50               | High           | Travel time between source and receptor would be quick and there is likely to be less barriers to block contamination.   |
| 50-250           | Moderate       | There will be a bit more time for the source to travel to receptor. There would also be a higher likelihood for there to be more barriers to block contamination.  |
| More<br>than 250 | Low            | The larger distance between the source and receptor will allow for longer travel time<br>and a large dispersion effect. There will also be less direct flow paths and more<br>barriers to block contamination. |

#### Table 1 Risk factors



**Step 3:** Establish any pathways present between sources and PWS and assess whether the PWS should be considered for any mitigation/monitoring (see Table 2).

# Information Sourced Public Surveys & Consultations

The property owner of House of Feddal PWS contacted SSE on the 6<sup>th</sup> June 2024 to confirm that their property is now connected to the mains. They also confirmed that the old PWS was located at NN 817 098 and was a groundwater spring source.

Letters were sent out the property owners at Calzieveg, Carsemeg, Ochilview and Ochilview Cottage in February 2024. From the response the following can be assumed:

- According to the owner of the PWS at Calziebeg, the PWS is situated in "the left-hand side behind her house in the middle of the field, It is a large plastic tank that in underground level" Using satellite imagery, the PWS possibly located at NN 80868 09128, which 184 m north of the location provided by the council. However, that is still over 250 m away from any works. It can also be assumed that the source of this PWS is likely to be a spring, as it is described to be underground.
- Bentick, Casemeg and Calziebeg all have their own PWS. Therefore, suggesting that the data supplied by the Perth and Kinross council (PKC) is correct.
- No one occupies Bentick, but the PWS is likely to supply agriculture.

A communication with Braco Castle Farm around their PWS has been received by SSE on 2<sup>nd</sup> September 2024. Reports indicate that this supply may be liable to failure/non-compliant under high rainfall events. No specific data is available but further investigation may be required.

## **Limitations and Assumptions**

The data collected from PKC and Stirling Council do not clarify whether the coordinates correlate to the property served by the PWS or the actual PWS location. For the purposes of this assessment, it has been assumed that the coordinates received from Councils correspond to the location of the PWS i.e. no ground truthing has been undertaken at this stage.

Some clarification on the location of Calzieveg was received from the property owner which revealed that the PWS could be situated around NN 80868 09128. For the purposes of this assessment this location will be used for Calzieveg.

PWS data from PKC on the 17<sup>th</sup> of January 2024 and from Stirling Council on the 31<sup>st</sup> of January 2024, and so only represent the PWS that were recorded at that time.

# **Summary of Findings and Recommendations**

## **Step 1 Results**

There was a total of eleven PWS identified from PKC and Stirling council records. However, only four of which were within the study area. The remaining seven were scoped out of the assessment.

#### **Step 2 Results**

Of the four within the study area (Table 2), only one PWS was within 250m of the Site, Blairmore Supply. The other three properties are all out with 250 m of the Site.

## **Step 3 Results**

Accidental spillages of fuels, solvents, oil and other construction chemicals have the potential to enter the water environment and contaminate these PWS. Similarly high levels of fine sediments in runoff from the access also has the potential to impact the quality at these PWS.



Blairmore Supply is situated approximately 40 m downstream of the proposed existing access track upgrades. It is likely to be a spring source, however, this is not confirmed. During construction, the main risks of contamination will stem from the daily use of the road and any associated accidental spillages. However, these construction impacts are likely to be temporary and highly unlikely when implementing measures outlined in the CEMP and the use of road drainage.

As for operation, the proposed existing access track upgrades will have similar use as it already exists at this location, therefore, operational impacts will likely be the same as the current impacts. Additionally, any contaminated runoff will likely be captured by the road drainage.

Overall, it is recommended that the Blairmore Supply is incorporated into any monitoring plans. Information was provided by a 3<sup>rd</sup> party, the PWS owner, who did suggest that the quality of the PWS is already poor. However, without a physical inspection of the PWS source it cannot be ruled out of monitoring at this stage.

Water quality should be monitored pre-construction (at least 12 months) and during construction. Water samples should be collected from the raw source and the customer's tap on a monthly basis. If it were to be determined that any effects were due to construction, then the provision of an alternate supply would be needed to be provided. It is advised that trigger levels for quality are set after the pre-construction monitoring has been undertaken. A commitment to this effect is included in the EA.

#### Table 2: PWS Assessment

|              |                             |                      | Step 1: Dis                 | p 1: Distance Step 2: Source-Pathway-Recept         |  | ay-Receptor  | Step 3:  |
|--------------|-----------------------------|----------------------|-----------------------------|---|--|--|--|
| ID           | Property                    | NGR                  | Distance<br>to works<br>(m) | Closest<br>works                                    | Source   | Pathway  | At Risk?   |
| PWS-<br>B-01 | Bentick<br>Farm<br>Supply   | NN<br>80708<br>08820 | 998                         | Proposed<br>existing<br>access<br>track<br>upgrades | Accidental spillages<br>from construction<br>chemical and<br>sediment from track<br>and bare earth | Potential road run-<br>off, but likely too<br>far to cause<br>impacts. | No<br>(Additionally, it is<br>likely used for<br>agricultural purposes<br>and not used as a<br>drinking supply)                                    |
| PWS-<br>B-02 | Blairmore<br>Supply         | NN<br>80792<br>09925 | 41                          | Proposed<br>existing<br>access<br>track<br>upgrades | Accidental spillages<br>from construction<br>chemical and<br>sediment from track<br>and bare earth | Contaminated run-<br>off from the road                                 | Possibly<br>Within close<br>proximity to the road,<br>contaminated runoff<br>could leach into<br>shallow aquifers and<br>contaminate the<br>source |
| PWS-<br>B-03 | Calziebeg<br>Farm<br>Supply | NN<br>80868<br>09128 | 770                         | Proposed<br>existing<br>access<br>track<br>upgrades | Accidental spillages<br>from construction<br>chemical and<br>sediment from track<br>and bare earth | Potential road run-<br>off, but likely too<br>far to cause<br>impacts. | No   |
| PWS-<br>B-04 | Carsemeg<br>Farm<br>Supply  | NN<br>81300<br>09200 | 680                         | Proposed<br>Existing<br>access<br>track<br>upgrades | Accidental spillages<br>from construction<br>chemical and<br>sediment from track<br>and bare earth | Potential road run-<br>off, but likely too<br>far to cause<br>impacts. | No   |

#### **Table 3: Private Water Supply Information**

| Supply                         | Council | National<br>Grid<br>Reference | Classification           | Source | Use | Volume<br>(m³) | Information<br>Supplied<br>from<br>Property<br>Oweners | Scoped<br>In/Out                            |
|--------------------------------|---------|-------------------------------|--------------------------|--------|-----|----------------|--|---|
| Craigovall<br>Supply           | РКС     | NN 83200<br>07000             | W13 PWS<br>Type B Supply |        |     | 0.5            |  | Scoped<br>Out –<br>outwith<br>study<br>area |
| Ochilview<br>Cottage<br>Supply | РКС     | NN 83388<br>07401             | W13 PWS<br>Type B Supply |        |     | 0.5            |  | Scoped<br>Out –<br>outwith<br>study<br>area |



| Supply                                      | Council             | National<br>Grid<br>Reference | Classification                 | Source                 | Use  | Volume<br>(m³) | Information<br>Supplied<br>from<br>Property<br>Oweners      | Scoped<br>In/Out                            |
|---|---------------------|-------------------------------|--------------------------------|------------------------|--|----------------|---|---|
| Rottearns<br>Spring Supply                  | РКС                 | NN 83561<br>07663             | W13 PWS<br>Type B Supply       |                        |  | 1.2            |   | Scoped<br>Out –<br>outwith<br>study<br>area |
| House of<br>Feddal Supply                   | РКС                 | NN 817<br>098                 | W13 PWS<br>Type B Supply       |                        |  | 0.5            | No longer in<br>use   | Scoped<br>Out – no<br>longer in<br>use      |
| Bentick Farm<br>Supply                      | РКС                 | NN 80708<br>08820             | W13 PWS<br>Type B Supply       |                        |  | 0.5            | Farm<br>buildings,<br>PWS likely<br>used for<br>agriculture | Scoped<br>In –<br>proximity<br>to site      |
| Calziebeg<br>Farm Supply                    | РКС                 | NN 80868<br>09128.            | W13 PWS<br>Type B Supply       |                        |  | 0.5            | Serves only<br>the one<br>property.                         | Scoped<br>In –<br>proximity<br>to site      |
| Carsemeg<br>Farm Supply                     | РКС                 | NN 81300<br>09200             | W13 PWS<br>Type B Supply       |                        |  | 0.5            |   | Scoped<br>In –<br>proximity<br>to site      |
| Blairmore<br>Supply                         | РКС                 | NN 80792<br>09925             | W18 New<br>Regulated<br>Supply |                        | Rented<br>Property                               | 1.5            |   | Scoped<br>In –<br>proximity<br>to site      |
| Cambushinnie<br>SSE<br>Substation<br>Supply | РКС                 | NN 78390<br>10505             | W18 New<br>Regulated<br>Supply | Surface –<br>Rainwater | Workers<br>Canteen<br>and<br>Hygiene<br>Facility | 0.4            |   | Scoped<br>Out –<br>rainwater<br>supply      |
| Cambshinnie<br>Cottage                      | Stirling<br>Council | NN 79140<br>06587             | N/A                            | Spring                 | Domestic<br>Property                             |                |   | Scoped<br>Out –<br>outwith<br>study<br>area |
| Cromlix Home<br>Farm                        | Stirling<br>Council | NN 77805<br>06396             | N/A                            | Spring                 | Commercial                                       |                |   | Scoped<br>Out –<br>outwith<br>study<br>area |