

Tangy IV Wind Farm Section 36C Variation

Technical Appendix 9.1: Private Water Supply Assessment

Technical Appendix 9.1 PWS Assessment

1.1. Introduction

- 1.1.1. The identification of known Private Water Supplies (PWS) and assessing the impacts of developments on groundwater abstractions is part of the Environment Impact Assessment Report (EIA Report) process and is guided by SEPA's guidance document, '*Guidance on Assessing the Impacts of Developments on Groundwater Abstractions*'¹.
- 1.1.2. The guidance does not cover the assessment of impacts to existing surface water abstractions; however, in the absence of other relevant guidance, this assessment process has been applied to known surface water PWS for this scheme. This appendix is to support **Chapter 9** and should be read in conjunction with the chapter.
- 1.1.3. The assessment identifies any known PWS located within a Study Area of up to 250m from the Proposed Varied Development and associated preliminary activities (keyhole tree felling and ground investigation), and of a qualitative impact assessment of whether these supplies may be impacted by the Proposed Varied Development. **Figure 9.2** displays the locations of each of the identified PWS.
- 1.1.4. The potential risks to PWS during construction include:
 - Spillages of fuel, hydraulic fluids, solvents, grouts, paints and detergents and other potentially polluting substances which will be stored and/or used on the Proposed Varied Development;
 - Uncontrolled sediment laden runoff from construction activity;
 - Impacts to supply from dewatering activities; and
 - Changes to aquifer recharge zones due to more impermeable surfaces.
- 1.1.5. In general, operational risks are thought to be minor in comparison to construction risks.
- 1.1.6. This document also summarises a supply response plan for application in the event of a contamination or supply incident to a PWS.

Definition of Private Water Supplies

- 1.1.7. In Scotland, PWS are defined as potable supplies that are not provided by the mains water provider Scottish Water. They may be surface water abstractions, or abstractions

¹ SEPA, 2024. Guidance on Assessing the Impacts of Developments on Groundwater Abstractions. Available online: Guidance and advice notes | Scottish Environment Protection Agency (SEPA).

from groundwater via wells, boreholes and springs. As a private supply, the only treatment of the supply will be provided by any facilities installed and maintained by the owner of the supply or by those who benefit from the supply.

1.1.8. The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017² aim to protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that the water meets water quality standards. This legislation requires that all PWS within the Study Area must be registered with Argyll & Bute Council. PWS are registered with Argyll & Bute Council by filling out an online application. There are two types of PWS defined in the regulations:

- Type A are larger supplies (serving over 50 or more persons) or supplies that have a commercial or public activities usage irrespective of size. These are regulated by the Water Intended for Human Consumption (Private Supplies) (Scotland) 2017.
- Type B are those on serving 50 persons or less and are regulated by Private Water Supplies (Scotland) Regulations 2006³.

1.2. Methodology

1.2.1. SEPA's guidance recommends that the risk assessment process is separated into three steps: Step 1: Identify any Existing PWS, Step 2: Qualitative Risk Assessment and Step 3: Quantitative Risk Assessment. This assessment only progresses to Step 2 as no PWS are deemed to be at high risk when considering mitigation.

Step 1 Identify Existing Abstractions

1.2.2. The assessment of risks to abstractions, both groundwater and surface water, first requires the identification of all existing abstractions, both within and outwith the site boundary. The guidance defines the relevant buffer zones for groundwater abstractions for all subsurface activities deeper than 1m, as 250m from the site boundary – this buffer zone has also been applied to the identification of surface water abstractions. The following actions have been undertaken to identify abstractions within this buffer zone.

Previous EIA Findings

1.2.3. A previous EIA conducted in 2018 identified 14 PWS serving 30 properties within a 2km Study Area. These were identified through a data request to Argyll & Bute Council and a questionnaire sent to 62 properties of interest, which gained 20

² Scottish Statutory Instruments. 2017. The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 ([legislation.gov.uk](https://www.legislation.gov.uk)).

³ Scottish Parliament, 2006. The Private Water Supplies (Scotland) Regulations 2006. Available Online: <https://www.legislation.gov.uk/ssi/2006/209/contents>

responses regarding 34 properties. Targeted interviews with local residents and a field survey were also undertaken. The data gathered is presented in **Appendix A**, which includes the additional information gathered from local residents. From this assessment, PWS 02 (identified from the previous assessment) and PWS 13 were considered to be at risk of potentially significant impact from the works.

Argyll & Bute Council

- 1.2.4. A freedom of information (FOI) request was sent on 25 November 2025 to Argyll & Bute Council to identify PWS within the 2km Study Area. A response was received on 05 January 2026 which identified 21 PWS. Of these, six were found to be the same PWS as the ones identified in 2018. The data received from Argyll & Bute Council is displayed in **Appendix B**.

Site Walkover

- 1.2.5. A programme of site walkovers have been carried out since 2023 at PWS 13 (noting that PWS 12 was disused and therefore excluded), and PWS 02 which was the only PWS considered as potential risk of significant impact in the 2018 EIA. Site walkovers have consisted of four visits in 2023, five visits in 2024, one visit in 2025 and at present, one visit in 2026. Photos of the two PWS have been taken at each visit. During these visits monthly water quality sampling and In-Situ field measurements have been carried out at eight locations, six of which are surface waterbodies and two at PWS 13.

Screening in/out

- 1.2.6. Step 1 includes screening out any data points which are not required to be assessed as there is no known risk (i.e. no impact pathway or outside of the Study Area).
- 1.2.7. The following list of criteria was used to screen in and out PWS identified:
- SEPA guidance contains buffer zones for groundwater abstractions. These buffer zones include abstractions within 100m radius of any excavations and less than 1m deep, and groundwater abstractions within 250m of any excavations and deeper than 1m could be at a risk of derogation of supply and/ or contamination⁴. This guidance also requires a 10m buffer for all other activities. For this assessment, all PWS within 250m of the works have been screened into the assessment.

⁴ SEPA.2024. Guidance on Assessing the Impacts of Developments on Groundwater Abstractions. Available online: [guidance-on-assessing-the-impacts-of-developments-on-groundwater-abstractions.docx](#)

- Any surface water sources which are directly downstream of any construction works were screened into the assessment and within the Study Area.

1.2.8. Before assessing the source-pathway-receptor impact in Step 2, each of the PWS are given a general risk rating based on the relevant buffer zones for groundwater abstractions, as indicated in SEPA's guidance and displayed in **Table 1**. If a PWS is deemed to be a moderate or high risk, it has been taken forward into Step 2: Qualitative Risk Assessment.

1.2.9. Further works to the access tracks as well as new tracks will be required. Some existing tracks will also be removed as part of the Proposed Varied Development. As design information for these works is unknown, a 250m buffer for all other activities will be used during the assessment assuming there is a possibility that works at depth will be required.

Table 1 Risk Factors

Groundwater Criteria	Surface Water Criteria	Risk Factor	Justification
Within 100m of an excavation less than 1 m. Or within 10m of any works	Less than 100m downstream of any surface level construction works	High	Travel time between source and receptor would be quick and likely to be less barriers to block any pathway for contamination to reach receptor
Between 100m to 250m of any excavation greater than 1m.	Between 100m and 250m downstream of any surface level construction works	Moderate	There will be more travel time between source and receptor. There would also be a higher likelihood for there to be barriers that block any pathway for contamination to reach the receptor.
More than 250m away from any works.	Over 250m from any surface level construction works	Low	The larger distance between the source and receptor will allow for longer travel time and a large dispersion effect. There will also be fewer direct flow paths and potentially barriers that block any pathway for contamination to reach the receptor.

Step 2 Qualitative Risk Assessment

1.2.10. A qualitative risk assessment has been carried out using a source-pathway-receptor approach. The potential contaminant flow pathways have also been assessed for the surface water supplied PWS. If it is found that without suitable

mitigation and monitoring measures there would be a significant risk to any of the PWS, they are then taken forward into Step 3: Quantitative Risk Assessment.

Step 3 Quantitative Risk Assessment

1.2.11. If any of the PWS are deemed to potentially have any significant effects, a quantitative risk assessment would be required, in accordance with SEPA guidance.

Limitations and Assumptions

1.2.12. With this assessment, there are a number of limitations and assumptions, as follows.

- Information gathered during the 2018 PWS assessment, such as that from questionnaires and interviews displayed in **Appendix A**, has not been checked and may be out of date or incorrect.
- This updated assessment was carried out in February 2026 and so it can only be used to represent the PWS that were recorded at this point in time.
- There is very little groundwater information from publicly available sources for the Proposed Varied Development. There is no freely available groundwater level or flow data, and no British Geological Society (BGS) borehole correlates with the identified PWS, therefore, the nature and character of the groundwater aquifers is largely unknown.

1.3. Results

Step 1 Identifying Existing Abstractions

1.3.1. **Table 2** displays the PWS identified and taken forward to Stage 2 of the assessment. Of the PWS identified in both the previous and current PWS assessments, the closest distance to the works have been used where two coordinates are available. The latest PWS data request identified eight additional PWS, however two of the previous PWS identified (PWS 01 and PWS 03) were not reported. It is possible that these are no longer used as PWS. PWS 12 which was previously identified had been scoped out as it was outwith the designated buffer zones.

Table 2 Assessment of Identified PWS

ID	Name (as given in latest FOI)	Listed in 2026 FOI?	NGR*	Source of Supply	Name of Source (if known)	Distance to Proposed Varied Development (m)**	Scoped In/Out
02	Tangytavil/ Lagalarve Farm	Yes	NR 65837 29280 (source thought to be at NR 66897 29383)	N/A- potentially Spring	Argyll Group- low productivity aquifer	208 (source) from borrow pit (a)	Scoped in- source within buffer zones
04	Tangymoile Farm	Yes	NR 66216 28538	GS	Argyll Group- low productivity aquifer	727 from borrow pit (b)	Scoped out- out of buffer zone
05	Killarow Cottage and Tangy Village	Yes	NR 66067 27767 and NR 66065 27743	GW and GS	Argyll Group- low productivity aquifer	1152 from turbine and 1165 from turbine (b)	Scoped out- out of buffer zones
06	Killarow Dairy Farm	Yes	NR 66536 28149	GW	Argyll Group- low productivity aquifer	635 from turbine (a)	Scoped out- out of buffer zone
07	Tangy Mill	Yes	NR 66966 27691	GS	Argyll Group- low productivity aquifer	456 from turbine (a)	Scoped out- out of buffer zone
08	High Ballevain Farm (Dairy Farm)	Yes	NR 66906 26559	GS	Argyll Group- low productivity aquifer	1642 from turbine	Scoped out- out of buffer zone

ID	Name (as given in latest FOI)	Listed in 2026 FOI?	NGR*	Source of Supply	Name of Source (if known)	Distance to Proposed Varied Development (m)**	Scoped In/Out
09	Breakachy House	Yes (two extra PWS added)	NR 67082 26805	GB	Argyll Group- low productivity aquifer	1365 from turbine	Scoped out- out of buffer zone
10	Drumalea - Dairy Farm	Yes	NR 67083 27355	GS	Argyll Group- low productivity aquifer	530 from works to access track (b,c)	Scoped out- out of buffer zone
11	Breakachy Cottages	Yes	NR 67518 27459	GS	Argyll Group- low productivity aquifer	100 from works to access track	Scoped in- within the buffer zone
12	Tangy Windfarm	Yes	NR 68091 28348	GS	Argyll Group- low productivity aquifer	172 from borrow pit (a)	Scoped out- advised by client that PWS is no longer in use.
13	Tangy Farm (Dalnaspidal)	Yes	NR 68110 28340	GS	Argyll Group- low productivity aquifer	156 from borrow pit (a)	Scoped in- within buffer zones
14	Gobagrennan	Yes	NR 70759 29799	GS	Argyll Group- low productivity aquifer	1603 from turbine	Scoped out- out of buffer zones
15	Drumaird (Drum) - Dairy Farm	Yes	NR 66793 25848	SB	Unnamed tributary of Kilchenzie Burn	2300 from turbine (1470 from access track works)	Scoped out- out of buffer zones

ID	Name (as given in latest FOI)	Listed in 2026 FOI?	NGR*	Source of Supply	Name of Source (if known)	Distance to Proposed Varied Development (m)**	Scoped In/Out
3	Little Keills	Yes	NR 67064 26899	GB	Argyll Group- low productivity aquifer	1207 from turbine (500 from access track works)	Scoped out- out of buffer zones
16	Largiemore Farm	Yes	NR 67595 26042	GS	Argyll Group- low productivity aquifer	1975 from borrow pit (1130 from access track works)	Scoped out- out of buffer zones
17	Low Ballevain Farm	Yes	NR 66016 25816	GS	Argyll Group- low productivity aquifer	2556 from turbine (1960 from access track works)	Scoped out- out of buffer zones
18	Low Park Farm	Yes	NR 70609 25725	GS	Southern Highland Group- low productivity aquifer	3241 from borrow pit (3410 from access track works)	Scoped out- out of buffer zones
19	Skeroblin Farms East & West	Yes	NR 70822 26735	GS	Southern Highland Group- low productivity aquifer	2626 from borrow pit (3360 from access track works)	Scoped out- out of buffer zones
20	High Park Steading	Yes	NR 69498 25765	GS	Southern Highland Group- low productivity aquifer	2839 from borrow pit (2440 from access track works)	Scoped out- out of buffer zones

ID	Name (as given in latest FOI)	Listed in 2026 FOI?	NGR*	Source of Supply	Name of Source (if known)	Distance to Proposed Varied Development (m)**	Scoped In/Out
21	Breakachy Farm	Yes	NR 67056 26811	GS	Argyll Group- low productivity aquifer	1299 from turbine (550 from access track works)	Scoped out- out of buffer zones
22	Largiebeg Farm	Yes	NR 67249 25789	GS	Argyll Group- low productivity aquifer	2291 from borrow pit (1360 from access track works)	Scoped out- out of buffer zones
23	Rowan Garry	Yes	NR 69402 27066	N/A – likely spring	Southern Highland Group- low productivity aquifer	1456 from borrow pit (1850 from access track works)	Scoped out- out of buffer zones

*NGR may correlate to property location and not the source.

**Where distance quoted in the 2018 and current assessments varies substantially. (a) represents changes to varied infrastructure identified, e.g borrow pit search area rather than borrow pit working area. (b) represents significant changes (more than 10m difference) between the previous and current NGRs returned from the data requests. (c) represents new infrastructure introduced.

Step 2 Qualitative Risk Assessment

- 1.3.2. Overall, the distances between the PWS and the Proposed Varied Development revealed that only three PWS (PWS 02, PWS 11 and PWS 13) are considered to present a moderate risk with none presenting a high risk. All other PWS are considered to be low risk and have been scoped out of further assessment. The three PWS considered at risk of significant impact were identified within the previous assessment and have been scoped into the next stage of the assessment.

PWS 02



Plate 1 Tangytavil /Lagaltarve Farm PWS 02. Collection tank/chamber of collector pipes from a spring or shallow groundwater (taken February 2026).

- 1.3.3. *Impacts to Quality* – Potential sources of contamination include accidental spillages associated with the works which may migrate towards PWS 02. As the borrow pit is upgradient from the works it is possible that there may be a significant level of impact without mitigation. Keyhole felling works may also cause mobilisation of soils and sediment which has the potential to migrate via surface run-off. However, impermeable layers within the surrounding till and peat will likely help impede the amount of contaminants able to reach the supply source, and any effect is only likely to occur during the construction period involving the borrow pit, and during a very brief period for keyhole felling. Considering the relative distance of the PWS from the borrow pit, it is anticipated that with standard and embedded mitigation any impact to quality will likely have a small extent, magnitude and likelihood. There are also no long term or cumulative impacts predicted.
- 1.3.4. *Impacts to Quantity* – Localised dewatering likely required for the borrow pit within superficial deposits could cause a localised drop in the surrounding water table which could cause a drop in the water level of the PWS source. It is likely that any dewatering will only temporarily impact the PWS, and level monitoring will help observe any

significant impacts. However, there is a small degree of uncertainty as there is limited information on the aquifer properties and flow directions.

PWS 11

1.3.5. *Impacts to Quality* – PWS 11 is unlikely to be impacted by the migration of any contamination caused as a result of the works to the access track. The works are expected to be limited to where the access track crosses watercourse TB22 which is down hydraulic gradient from the PWS. As such no flow path to the PWS is feasible, and any pollutants which may enter the groundwater are likely to follow the topography and migrate away from the PWS instead. There are no other works taking place within the 250m buffer zone from PWS 11.

1.3.6. *Impacts to Quantity* – Localised dewatering may be required for the access track works which could cause a temporary drop in the water level of the PWS. Although the PWS is upgradient from the works, depending on the extent of any dewatering required drawdown may still occur. However, the works are situated on the Neoproterozoic Basic Minor Intrusion Suite-Amphibolite and hornblende schist, and PWS 11 is situated on the boundary of this and the Loch Tay Limestone Formation-Metalimestone and till. Due to the expected low permeability of the bedrock formations and superficial deposits, any drawdown as a result of dewatering is likely to cause a negligible and temporary impact on the PWS. Level monitoring will help determine the extent of any impact and provide assurance to the PWS owner.

PWS 13



Plate 2 Tangy Farm. Groundwater spring on the existing Tangy Windfarm. Cylindrical plastic with a plastic lid and a metal covering (taken February 2026).

- 1.3.7. *Impacts to Quality* – Potential sources of contamination include accidental spillages associated with the works which may migrate towards PWS 13. Keyhole felling works may also cause mobilisation of soils and sediment which has the potential to migrate via surface run-off. Groundwater flow is likely to follow the topographic gradient south towards Tangy Burn rather than migrating cross-gradient towards the supply. The borrow pit is situated primarily on exposed bedrock, whereas the PWS is situated on till. It is not known whether the PWS draws its supply from perched water within the till or bedrock, however if from within the bedrock, the supply is at a greater risk of contaminants from the borrow pit which is also situated on the bedrock. Any effect however is only likely to occur during the construction period involving the borrow pit, and with standard and embedded mitigation any impact to quality will likely have a small extent, magnitude and likelihood. There are no long term or cumulative impacts predicted.
- 1.3.8. *Impacts to Quantity* – Localised dewatering likely required for the borrow pit could cause a localised drop in the surrounding water table within the bedrock aquifer, which could cause a drop in the water level of the PWS source, if this is within the bedrock or it is hydraulically connected. It is likely that any dewatering will only temporarily impact the PWS, and level monitoring will help observe any significant impacts. However, there is a small degree of uncertainty as there is limited information on the aquifer properties and flow directions.

Step 3 Quantitative Impact Assessment

- 1.3.9. No quantitative impact assessment has been carried out as it is likely that each of the potential impacts will be temporary. With appropriate mitigation measures in place, there is unlikely to be major impacts. Monitoring of certain PWS will also ensure that the mitigation measures in place are working.

1.4. Monitoring and contingency planning

- 1.4.1. The following sections provide an overview of the monitoring, mitigation and actions in the event of incident to a PWS. The PWS Response Plan will be implemented in the event that the quality and quantity of the supply to any of the PWS is affected during construction.
- 1.4.2. The precise definition of what 'impact' would require a response will be determined in consultation with Argyll & Bute Councils Environmental Health Officer (EHO) or other appropriate person, and SEPA, but it is expected that the response plan will have a hierarchy of actions. The most significant response would be where the supply is contaminated and is no longer potable, or the flow is significantly disrupted, reducing the supply quantity.
- 1.4.3. Overall, the PWS Response Plan will cover how local PWS users can raise a concern with their supply, how the incident will be investigated, and what temporary and/or permanent water supply solutions need to be implemented.

Monitoring

- 1.4.4. PWS are water receptors and if impacted, have the potential to risk human health and safety. Monitoring will help identify any deterioration that might be a consequence of the construction works so that appropriate action can be taken.
- 1.4.5. Appendix B of the 'Guidance on Assessing the impacts of development on groundwater abstractions'¹ recommends at least 12 months of monitoring before construction, fortnightly during construction and at least monthly for 12 months post construction. Additional sampling maybe required in the event of an investigation of an incident as described below.
- 1.4.6. Due to the nature of the scheme, it is likely that there will need to be a phased approach to monitoring. It may be suitable to begin construction monitoring for a PWS when construction works are within 250m of the PWS. **Figure 9.3** shows the 250m buffer zone around the affected PWS.
- 1.4.7. The following suite of parameters may be appropriate for monitoring groundwater PWS. This suite will also be suitable for surface water PWS as well.

- pH, electrical conductivity, dissolved oxygen, redox, temperature;
- Chloride, alkalinity, sulphate;
- Sodium, potassium, calcium, magnesium;
- Ammoniacal nitrogen, nitrate, nitrite, orthophosphate;
- Biochemical oxygen demand, chemical oxygen demand;
- Iron, manganese (total and dissolved);
- Total suspended solids;
- Dissolved organic carbon;
- Colour, turbidity, taste and odour;
- Hydrocarbons; and
- Metals.

1.4.8. From Step 2 Qualitative Assessment, it is recommended that PWS 02 (of the previous PWS identified) and PWS 13 are incorporated into the monitoring plan.

Mitigation

1.4.9. To avoid any impacts to the quality and quantity of PWS, mitigation measures will be implemented during the construction works. Standard mitigation methods and environmental practices can avoid most pollution incidents. At a minimum, construction works will adhere to guidance laid out by SEPA, including Guidance for Pollution Prevention (GPP)⁵, key CIRIA documents⁶, Planning Advice Notes (PANs)⁷ and supporting documents for The Environmental Authorisations (EASR) (Scotland) Regulations 2018⁸.

1.4.10. Further mitigation details are set out in the Construction Environmental Management Plan (CEMP)⁹. This includes details of the mitigation to avoid any incidents which could impact local PWS describing what action will be taken, when it will be taken, and who else would be consulted.

Response Plan

Notification of an Incident

⁵ NetRegs. Guidance for Pollution Prevention (GPP). Available Online: <https://www.netregs.org.uk/environmentaltopics/guidance-for-pollution-prevention-gpp-documents/>

⁶ CIRIA. All Publications. Available Online: https://www.ciria.org/CIRIA/CIRIA/Store_Home.aspx?hkey=4a041b49-608b-4f489a46-51681945f4c0

⁷ Scottish Government. Planning Advice Notes and Guidance. Available Online: <https://www.gov.scot/collections/planningadvice-notes-pans/>

⁸ Scottish Government (2018). The Environmental Authorisations (Scotland) Regulations 2018. Available at: [The Environmental Authorisations \(Scotland\) Regulations 2018](#)

⁹ SSE Renewables (2018) Construction Environmental Management Plan (CEMP): Tangy IV Wind Farm. Version 1.0. Available at: https://www.sserenewables.com/media/iutjmvor/r170_1106_ta5-1_cemp_3.pdf

- 1.4.11. There will be several ways in which the contractor can be notified of an incident to the quality or quantity of water for each PWS.
- 1.4.12. During construction, if there are any material exceedances of parameters from the baseline or environmental quality standards (WFD standards¹⁰, Drinking Water Standards¹¹ and PWS Regs¹²) action will be triggered. This may be considered as a self-notification of an incident.
- 1.4.13. Additionally, before construction, all PWS owners and/or users will be provided with relevant information including details of what to do and whom to contact if they themselves notice a problem with their PWS. For instance, if PWS users observe a change in colour, pressure, temperature or taste there will be a telephone number and mailbox email address they can contact. This will also be considered as a third-party notification of a possible incident.

Investigation of an Incident

- 1.4.14. If there has been a notification of a change in water quality and quantity from either the monitoring work or from the owner/user of the PWS, there will be immediate action by the contractor. An initial triage of the incident will be required to assess the severity of the event and critically whether the water in the supply is no longer potable.
- 1.4.15. Post initial triage, the event will be investigated to try and determine the cause of the impact, and whether it is or may be connected to any construction works that are ongoing. Investigation measures will vary depending on which PWS is affected and the type of impact. However, investigation measures could include the following actions.
- A visit to review the PWS and collect additional water quality samples. If groundwater level monitoring occurs at this PWS then manual dip readings will be collected also. Data collected will confirm whether an incident has occurred. It is anticipated that this visit will take place within a few days of the impact being notified.
 - The PWS owner could be consulted to better determine the exact details of the impact as well as whether there could be other causes not related to the construction works. Questions asked during the interview would be related to the timings, frequency and exact 'symptoms' of the incident.
 - The works being conducted will be investigated as well as the mitigation being used to avoid contamination/pollution. Contaminant pathways from the works

¹⁰ SEPA. Available at: <https://www.sepa.org.uk/media/152957/wat-sg-53-environmental-quality-standards-for-discharges-to-surfacewaters.pdf>

¹¹ Drinking Water Quality Regulator for Scotland. Available at: <https://dwqr.scot/public-water-supply/national-water-quality/>.

¹² Scottish Parliament, 2006. The Private Water Supplies (Scotland) Regulations 2006. Available Online: <https://www.legislation.gov.uk/ssi/2006/209/contents>

being carried out at the Proposed Varied Development to the PWS would be investigated to determine whether any exist.

- The Argyll & Bute Council's EHO (and potentially SEPA) will be notified of the... incident within 24 hours of receipt of the notification so that they may support the investigation and actions to mitigate the impact and disruption to the affected users.

Actions in the event of supply disruption

- 1.4.16. In the event of an incident, there will be immediate action from the point of notification to investigate the cause as described above. However, whilst the outcome of an investigation is pending, there will be a need to temporarily provide an alternative water supply, as well as advice to those affected, in collaboration with the Local Planning Authority.
- 1.4.17. The response will differ depending on the cause of the incident and the PWS set up. The sections below outline the potential temporary and permanent steps which could be carried out, although the final response plan, included in the CEMP, need not be limited to this.

Temporary Solutions

- 1.4.18. While the incident is being investigated a temporary source of potable water may be required for the PWS. There are several options of temporary water supply. The options used will depend on the type of incident and the PWS affected. For instance, the water may be safe for activities apart from drinking, washing food/utensils, clothes etc. and therefore only drinking water will need to be supplied.
- 1.4.19. A temporary solution will be used for as long as necessary. Solutions could include the delivery of bottles of water, crates of water, small tanks or bowser delivered direct to properties door. However, it should be noted that temporary water supply solutions are not limited to this list. Sufficient supplies of potable water will be provided as soon as reasonably possible.

Permanent Solutions

- 1.4.20. The temporary solutions described above would only be used until a permanent solution is found. There are several options for a permanent solution. If the source of the problem is identified and it can be removed or mitigated, the PWS will go back to the original supply. Monitoring will continue until it can be confirmed that the supply is safe to drink. In the unlikely event it is found that the source of the problem cannot be removed or mitigated then a new, permanent supply will need to be provided. Solutions could involve a new treatment process for the supply, a new borehole or it may be possible to connect the property to the mains supply in some instances, subject to discussion and agreement with the owner of the affected property.

Summary and Recommendations

- 1.4.21. In summary, two PWS (PWS 02 and PWS 13 of the previous PWS identified) are deemed to be at potential risk from significant impacts as a result of the works. To account for potential changes to the supplies from contaminants and dewatering quality and level monitoring will be undertaken during the preconstruction, construction and post construction phases. With standard and embedded mitigation it is thought that the PWS identified at risk will **not** be subject to any significant impacts. An Emergency Response Plan set out within the CEMP will also alleviate any potential impacts in the case of a pollution incident.

Appendix A – 2018 EIA Data

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
1	Killocrow Farm(1A) & Tighavullin Farm(1B)	Well (1,100m above farmhouse to the ESE and close to the windfarm) (V).	167071	630229	117	1997	592 to Turbine 8	Domestic & livestock - reliable source.	Periodic check - very good (15' deep source protected from surface contamination by concrete rings).	138
2	Lagalarve Farm (2A) & Tangytavil (2B)	Collector tank located above farmhouse high up to the ENE and close to the windfarm (V). The source type is not confirmed beyond doubt but likely to be either a spring or shallow groundwater collector system. The source is believed to	166897	629383	173	>100 years ago	244 from source collection point to borrow pit working area.	Domestic, livestock & commercial satisfactory for needs.	Checked 30 years ago then 15 years ago.	120

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
		incorporate buried collector pipes, but their presence is not confirmed and, if present, their extent / layout is unknown (A).								
3	Am Fasgadh (3A)	Spring (just above house) (V).	165810	629023	16	Unknown	1134 to Borrow Pit C working area	Domestic - never run dry (recent landslide directly adjacent).	Council check periodically - tank storage - good quality.	123
4	Tighnamoile (4A) & Tangymoill Farm (4B)	Spring (from tile drain above stream flowing west from windfarm) (V).	166339	628590	116	-	792 to Borrow Pit C working area.	Domestic & livestock - can dry up.	Filtration - quality reports varied, clear and good taste though water can be cloudy after extreme rainfall.	132

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
5	Killarow Cottage (5A), Tangy Glen Cottages (5B) & Maleen (5C)	Spring - (near to Killarow Farm spring and underground) (A). Collection tank position verified (V).	166536	628149	Approx. 114 (same as F)	-	779 to Turbine 1	Domestic - can dry up in summer months (see Killarow Farm).	Not known / buried source, separate tank storage (see Killarow Farm).	Near 118 (separate spring)
6	Killarow Farm (6A) & Tigh-Na-Mara (6B)	Spring (approx. 350m east of farmhouse under field used by cattle) (V).	166536	628149	114	-	779 to Turbine 1	Domestic & livestock - can dry up in summer months (then water pumped from burn).	Not known / buried source, separate tank storage, water brown after heavy rainfall.	118
7	Tangy Mill (7A)	Spring (next to Tangy Burn flowing from the east through the windfarm area above) (V).	166966	627691	90	-	576 to Turbine 1	Commercial – not known.	Not known / tank storage.	125

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
8	High Balevain Farmhouse (8A)	Spring (under field on hillside NE of farmhouse) (V).	166906	626559	85	1965	1642 to Turbine 1	Domestic & dairy cattle - never run dry.	UV with pre-filter - buried source tested annually, tank storage, water brown after heavy rainfall.	127
9	Breakachy Farmhouse (9A)	Borehole (in farmyard) (V).	167082	626805	125	Not known	1365 to Turbine 1	Domestic	Filtration - tank storage, poor quality, iron and other parameters a problem, water brown, checked January 2018.	130
10	Drumalea Farm (10A) & Drumalea Farm Cottage (10B)	Dammed stream (flowing from forested area upstream to east of windfarm) (V).	167916	627384	124	2006	634 to Borrow Pit B working area	Domestic & livestock - good yield, use <2m ³ /day, CAR/R/1014147 permit up to 11m ³ /day	Filtration - holding tank, water sometimes discoloured due to peaty land source.	117

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
11	Breakachy Cottages (3 properties) (11A) & High Balevain Farm (8A)	Spring(s) (issuing from rock at top of fenced-off area to the northeast & below windfarm) (V).	167518	627459	104	2001	610 to Borrow Pit B working area (c)	Domestic & livestock - recent frozen pipes.	Fenced-off area livestock free - untreated water - Council checked June 2016.	116
12	Tangy Windfarm (12A)	Groundwater Collector (V).	168091	628348	169	2004	255 to Turbine 2	SSE employees	Tested annually, failed last 2 years for high Magnesium.	101
13	Tangy Farm (13A), Dalnaspidal (13B) & TangyLea (13C)	Spring (next to windfarm track north of Tangy Farmhouse) (V).	168110	628340	168		254 to Turbine 4	Domestic, commercial & livestock - never run dry.	Last council check Aug 2017 - UV with pre-filter - good quality.	99

PWS Source ID	Properties Supplied	Source Type (V – Verified A – Anecdotal)	X Coords	Y Coords	Elevation (m)	Date Installed	Approximate Distance from Nearest Excavations (m)	Usage / Reliability	Quality and Treatment (where information available). Data Provided by Landowners / Property Owners.	GPS Ref.
14	Gobagrennan (14A)	Spring (on hillside north of house) (V).	170759	629799	157	1967	1603 to Turbine 11	Domestic & livestock - never run dry.	Tested 1967 & Nov 2017 - limey water, filtered to ionise - good quality.	140

Appendix B Latest PWS Data Received

EASTINGS	NORTHINGS	SOURCENAME	SOURCETYPE
166408	628048	Killarow Dairy Farm	GW
166793	625848	Drumaird (Drum) - Dairy Farm	SB
167083	627355	Drumalea - Dairy Farm	GS
166847	626494	High Balevain Farm (Dairy Farm)	GS
168091	628339	Tangy Windfarm	GS
167064	626899	Little Keills	GB
167595	626042	Largiemore Farm	GS
168105	628314	Tangy Farm (Dalnaspidal)	GS
166977	627703	Tangy Mill	GS
166016	625816	Low Ballevain Farm	GS
170609	625725	Low Park Farm	GS

EASTINGS	NORTHINGS	SOURCENAME	SOURCETYPE
170822	626735	Skeroblin Farms East & West	GS
167056	626811	Breakachy Farm	GS
167080	626809	Breakachy House	GB
169498	625765	High Park Steading	GS
166067	627767	Killarow Cottage	GW
167584	627372	Breakachy Cottages	GS
167249	625789	Largiebeg Farm	GS
170762	629799	Gobagrennan	GS
169402	627066	Rowan Garry	
166065	627743	Tangy Village	GS
166216	628538	Tangymoil Farm	GS
165837	629280	Tangytavil	