Technical Appendix 8.6: Private Water Supplies Assessment’

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1.1 Introduction

1.1.1 The purpose of this Technical Appendix is to identify the location of Private Water Supplies (PWS) relative to the Proposed Development, and to undertake an assessment of potential impacts on them.

1.1.2 A PWS is considered to be a small abstraction of less than 10 m^3 per day from a source such as a borehole, spring/ well or surface water body. The Scottish Environment Protection Agency (SEPA) typically requires that all groundwater abstractions be identified within 100 m of proposed roads, tracks and trenches or within 250 m from borrow pits and foundations[1]. In addition to screening for PWS within these buffers, this assessment also considers other supplies, within a 2 km study area, in potential hydrological connection to the Proposed Development.

1.1.3 PWS are categorised as Type A, or Regulated Supplies that serve 50 or more persons in total or which serve commercial properties (regulated under *The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017*)[2], and Type B, or Exempt Supplies that serve only domestic properties (regulated under The Private Water Supplies (Scotland) Regulations 2006)[3].

1.2 Private Water Supply Locations

1.2.1 Following a request for information by Ramboll, South Lanarkshire Council (SLC) provided the most recent records of PWS locations within a 5 km radius of the Proposed Development (received May 2024).

1.2.2 Only two (2) PWS abstraction sources are recorded within 5 km of the Site and these are identified below in Table 8.6.1 and in Figure 8.6.1 (of this Technical Appendix).

Table 8.6.1: Private Water Supply Abstraction Sources

Reference (see Figure 8.3.1)	PWS Category	Source Type	X	Y	PWS User Name
1*	No Stated	Spring	291800	624500	Duneaton House
2*	No Stated	Spring	289970	623563	Nether Abington

1.2.3 The Nether Abington PWS is located approximately 350 m south of the Site and 1.3 km south of the nearest area of Proposed Development (a borrow pit search area to the north of Black Hill). The PWS is therefore not within a 250 m distance of the Proposed Development and detailed hydrogeological assessment is not required under LUPS-GU31. The Nether Abington PWS is located to the south of the Black Burn and Duneaton Water and therefore surface water runoff from the Site would not interact with the PWS source. There is therefore assessed to be a negligible risk that the Proposed Development would lead to a negative impact at this location.

1.2.4 The Duneaton House PWS is located approximately 270 m to the east of the Site at its nearest point and 350 m east of the nearest area of Proposed Development, the proposed solar array to the east of Black Hill. A second area of solar array is proposed 370 m to the east of the PWS. The PWS is therefore not within a 250 m distance of the Proposed Development and detailed hydrogeological assessment is not required under LUPS-GU31. The Duneaton House PWS is located to the east of Duneaton Water and is therefore not in hydrological connection to the proposed solar array to the west of the river. The PWS is located on the north west slope of Craighead Hill and therefore surface water runoff from the solar array proposed on the north east of Craighead Hill would not interact with the PWS. There is therefore assessed to be a negligible risk that the Proposed Development would lead to a negative impact at this location.

1.2.5 All PWS identified within the 2 km study area are therefore assessed to be outside of potential hydrological connectivity to the Proposed Development. PWS located at a greater distance than 2 km from the Site are considered highly unlikely to be within hydrological connection to the Site and have been scoped out of further assessment.

1.3 Site Best Practice and Environmental Management

1.3.1 As set out in Section 1.2, based on information provided by SLC and site observations, no PWS have been identified that would be affected by the Proposed Development. However, there is the potential for other PWS that are not recorded, this chapter identifies the precautionary management controls to ensure potential for impact is appropriately controlled in such an instance.

1.3.2 The construction works would follow good practice principles to be set out within the detailed CEMP. An Outline CEMP setting out the general principles of Site management is included in **Technical Appendix 2.1: OCEMP (EIAR Volume 4)**.

1.3.3 To ensure that all drainage measures employed during the construction phase of the Proposed Development are maintained appropriately and remain effective, the performance of the drainage measures would be monitored. The drainage management works would be supervised by the Ecological Clerk of Works (ECoW). All monitoring and supervision of the drainage management works would be recorded.

1.3.4 The following good practice measures are considered applicable to the Proposed Development:

- Engineering activities such as culverts, bridges, watercourse diversions, bank modifications and dams would be avoided wherever possible in order to maintain the natural state of the water environment;
- Appropriate buffer zones between water bodies and construction areas would be established;
- No large capacity build-up of surface water would occur that could lead to additional loadings being placed on the surrounding ground that could lead to soil failure, especially in areas with peat stability concerns;
- Any effects on natural flora and fauna would be minimised, and there would be no indirect impacts on any surrounding designated sites;
- Pollution prevention and environmental protection legislation would be adhered to;
- Works would be allowed to progress efficiently without flash wash-out events affecting partially completed sections; and
- The completed development would be suitably operated with the minimum maintenance to the installed drainage systems.

1.3.5 Such measures would ensure that, as well as avoiding impact to PWS during construction, the availability of water resources more widely would not be impacted as a result of the Proposed Development.

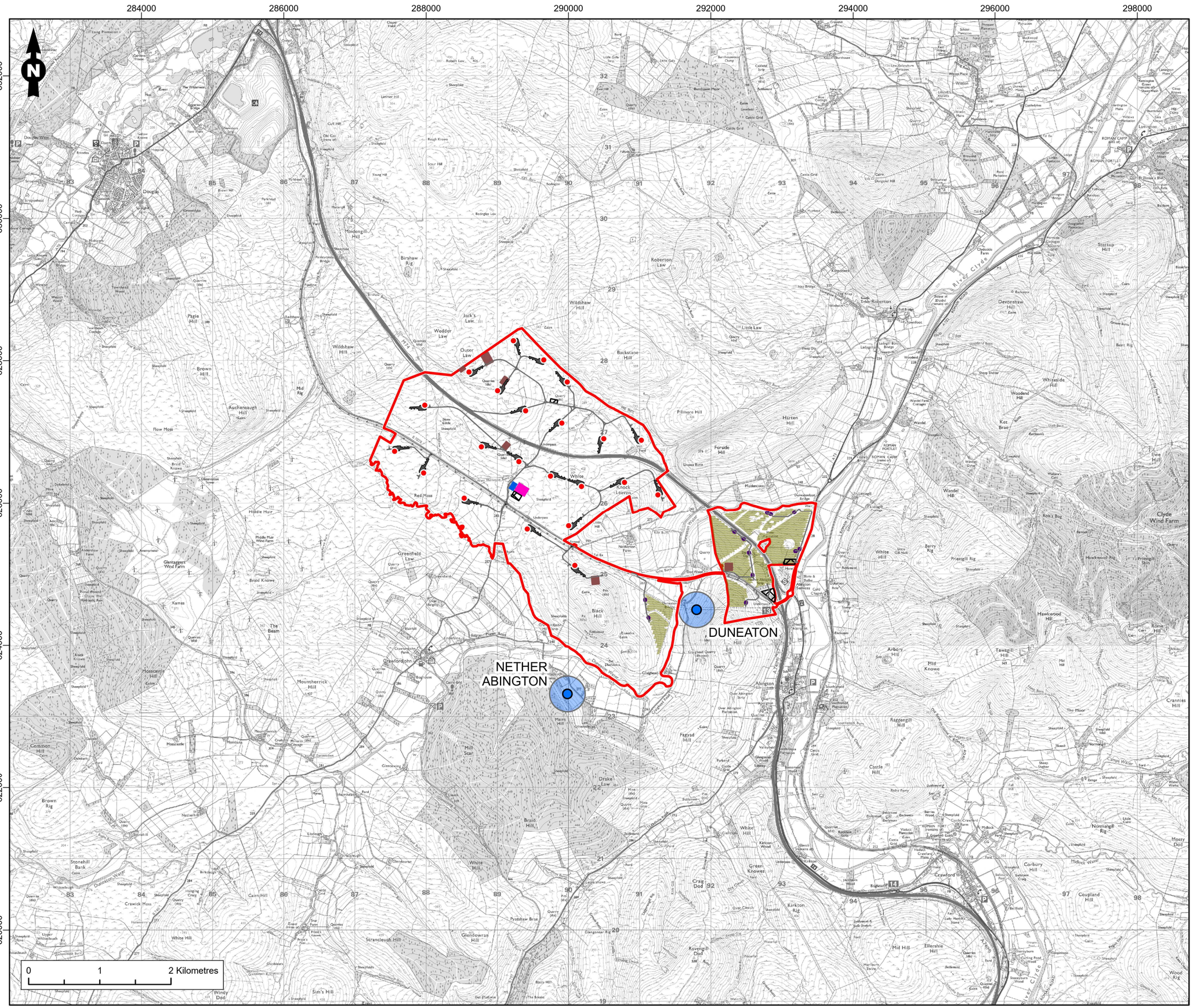
1.4 Conclusions

1.4.1 The assessment has concluded that the risk of potential impact to PWS as a result of the Proposed Development would be negligible.

[1] LUPS-GU31 , SEPA 2017 Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems

[2] https://www.legislation.gov.uk/ssi/2017/282/contents/made

[3] https://www.legislation.gov.uk/ssi/2006/209/contents/made



Legend

- Site Boundary
- Turbines
- Solar PV Modules
- Inverter
- Substation
- Construction Compound
- Battery Site
- Borrow Pit Location
- Turbine Hardstanding Concrete
- Access Track, Junction & Turning Heads
- Private Water Supply
- PWS 250 m Buffer

Figure Title
Private Water Supplies

Project Name
M74 West Renewable Energy Park

Project Number	Figure No.
1620015684	8.6.1
Date	**Prepared By**
August 2024	BE
Scale	**Issue**
1:50,000 @A3	1

Client
M74 West Ltd

RAMBOLL

Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936.
1620015684-RAM-MA-IA-0000X_Fig8.6.1PrivateWaterSupplies_03.pagx

Technical Appendix 8.7: Assessment Methodology

Technical Appendix 8.7: Hydrology, Hydrogeology and Geology Method of Assessment

1.1.1 The assessment methodology, including criteria for assessing sensitivity of receptors, magnitude of change and cumulative effects, as well as overall significance criteria, is detailed below: Criteria for Assessing the Sensitivity of Receptors

1.1.2 Effects on water resources are described as beneficial, neutral or adverse and are considered with reference to the value or sensitivity of the receptor, as described in **Table 8.7.1**.

Table 8.7.1: Sensitivity of Environmental Receptor

Sensitivity of Receptor	Definition	Typical Criteria
High	International or national level importance. Receptor with a high quality and rarity, regional or national scale and limited potential for substitution/ replacement.	• High likelihood of fluvial/ tidal flooding in the sub catchment – defined as 1:10 probability in a year. • European Commission (EC) Designated Salmonid / Cyprinid fishery. • Surface Water Framework Directive (WFD) class 'High'. • Scottish Government Drinking Water Protected Areas. • Aquifer providing regionally important resource such as abstraction for public water supply, abstraction for private water supply. • Supporting a site protected under EC or UK habitat legislation/ species protected by EC legislation. • Protected Bathing Water Area. • Active floodplain. • Highly GWDTEs. • Average peat depth >1 m within the sub-catchment.
Medium	Regional, county and district level importance. Receptor with a medium quality and rarity, regional scale and limited potential for substitution/ replacement.	• Medium likelihood of fluvial/ tidal flooding in the sub catchment – defined as a 1:200 probability in a year. • Surface water WFD class 'Good' or 'Moderate'. • Aquifer providing water for agricultural or industrial use. • Local or regional ecological status/ locally important fishery. • Contains some flood alleviation features. • Average peat depth >0.5 m within the sub catchment. • Moderately GWDTEs.
Low	Local importance Receptor is on-site or on a neighbouring site with a low quality and rarity, local scale. Environmental equilibrium is stable and is resilient to changes that are greater than natural fluctuations, without detriment to its present character.	• Surface water WFD class 'Poor'. • Unproductive strata/ no abstractions for water supply. • Sporadic fish present. • No flood alleviation features. • Sewer. • Average peat depth <0.5 m within the sub catchment.

Criteria for Assessing the Magnitude of Change

1.1.3 The size or magnitude of each impact is determined as a predicted deviation from the baseline conditions during construction, operation and decommissioning of the Proposed Development, as described in **Table 8.7.2**.

Table 8.7.2: Magnitude of Impact on a Receptor

Magnitude of Impact	Criteria
Large	Large alteration/ change in the quality or quantity of and/ or to the physical or biological characteristics of environmental resource.
Medium	Medium alteration/ change in the quality or quantity of and/ or to the physical or biological characteristics of environmental resource.
Small	Small alteration/ change in the quality or quantity of and/ or to the physical or biological characteristics of environmental resource.
None	No alteration/ change detectable in the quality or quantity of and/ or to the physical or biological characteristics of environmental resource.

Criteria for Assessing Cumulative Effects

1.1.4 The potential for cumulative effects to occur as a result of the Proposed Development is assessed based on:

- the potential hydrological connection of other similar developments, which are the subject of a valid planning application;
- the potential for concurrent phases of construction with other similar developments with the potential for hydrological connection to the Wind Turbine Array; and
- applicable planning conditions with regards to the potential impact of other similar developments on the water environment.

Criteria for Assessing Significance

1.1.5 **Table 8.7.3** illustrates how residual effects are determined by comparison of the sensitivity of receptors with the magnitude of impact (i.e. predicted change). For the purposes of this assessment significant effects are **Major** or **Moderate**.

Table 8.7.3: Significance Criteria

		Magnitude of Impact			
		None	**Small**	**Medium**	**Large**
Sensitivity of Receptor	**High**	None	Minor	Major	Major
	Medium	None	Minor	Moderate	Moderate
	Low	None	Negligible	Minor	Minor

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