CALEDONIA
Offshore Wind Farm

Code: UKCAL-CWF-CON-EIA-RPT-00007-7E37

Volume 7E Proposed Development (Onshore) Appendices

Appendix 6-4 Watercourse Crossing Inventory

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Volume 7E Appendix 6-4 Watercourse Crossing Inventory

Code	UKCAL-CWF-CON-EIA-RPT-00007-7E37
Revision	Issued
Date	18 October 2024

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Acronyms and Abbreviations

AMSC	Approval for Matters Specified within Conditions
CAR	Controlled Activities Regulations
CEMP	Construction Environmental Management Plan
EIAR	Environmental Impact Assessment Report
GBR	General Binding Rules
GPS	Global Positioning System
HDD	Horizontal Directional Drilling
OCT	Open Cut Trenching
OnTI	Onshore Transmission Infrastructure
OS	Ordnance Survey
RLB	Red Line Boundary
SEPA	Scottish Environment Protection Agency
WFD	Water Framework Directive

1 Introduction

1.1.1.1 This technical appendix supports Volume 5, Chapter 6: Hydrology and Hydrogeology of the Environmental Impact Assessment Report (EIAR).

1.1.1.2 This watercourse crossing inventory records the presence of watercourses which may be required to be intersected by the Onshore Transmission Infrastructure (OnTI). This has been assumed to be any watercourse within the OnTI Red Line Boundary (RLB). Watercourses are presented on Figure 6-1: Surface Water Features within Volume 7E, Appendix 6-6: Hydrology and Hydrogeology Figures.

1.1.1.3 This Technical Appendix provides a baseline description of watercourse crossings and outlines the strategic approach to those proposed crossings. At this stage of the Proposed Development (Onshore) design, the exact location of watercourse crossing locations and accompanying detailed engineering designs are not available. The EIAR and supporting appendices therefore consider that cable trenches and their associated watercourse crossings may be located anywhere within the OnTI RLB.

1.2 Regulatory background

1.2.1.1 Under the terms of the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (known as the Controlled Activities Regulations (CAR)) (Scottish Parliament, 2011[1]), it is an offence to undertake the following activities without appropriate level of authorisation in place:

- Discharge to any wetland, surface water or groundwater;
- Disposal of waste water or effluent to land;
- Abstraction from any wetland, surface water or groundwater;
- Impoundment (dam or weir) of any river, loch, wetland or transitional water; and
- Engineering works in any inland water or wetland.

1.2.1.2 Therefore, the potential crossing of a watercourse, classified as engineering works in any inland water or wetland, may be subject to CAR.

1.2.1.3 Three different types of authorisation under CAR allow for proportionate and risk-based regulation. The authorisation process operates at three levels which are:

- General Binding Rules (GBR);
- Registration; and
- Licence (Simple or Complex).

1.2.1.4 Scottish Environment Protection Agency (SEPA) guidance (SEPA, 2021[2]) specifies that authorisations are not normally required for engineering works on watercourses that are not shown on the 1:50,000 scale Ordnance Survey

(OS) maps (Landranger series). Additional crossing of watercourses absent from 1:50,000 OS maps are likely to be necessary but would not require formal authorisation for CAR, beyond compliance with the GBRs.

1.2.1.5 Table 1-1 is reproduced from SEPA guidance (SEPA, 2021[2]) and presents different cable crossing techniques and the expected level of authorisation that they would require. On this basis, some watercourse crossings required to facilitate the OnTI would require a CAR licence and others would only be subject to compliance with the relevant GBRs. For 'bridges and other types of crossings' only one of either GBR, Registration or Simple Licence is required as per SEPA guidance (SEPA, 2021[2]).

Table 1-1: Engineering - levels of authorisation.

Example of works	Level of Authorisation		
	GBR	**Registration**	**Simple licence**
	Pipeline or cable crossing by boring beneath the bed of inland surface water [GBR7]	Pipeline or cable crossing beneath bed by isolating open cut or mole plough (Activity H)	All other pipeline or cable crossings, e.g., by direct open cut or laid on channel bed

2 Potential Watercourse Crossings

2.1.1.1 The OnTI includes a number of components that may require watercourse crossings such as the Onshore Cable Circuits, temporary access tracks, and access for one landowner in the vicinity of the Onshore Substations.

2.1.1.2 Based on the OnTI RLB, a desk-based assessment has been carried out to review indicative watercourse crossing locations that may be required. Watercourse crossing surveys were also carried out week commencing 30 October 2023 and watercourse data and characteristics were collected and recorded.

2.1.1.3 It should be noted, there may be additional field ditches and land drainage channels that are not identified on OS mapping and therefore have not been included in this inventory. Localised land drainage features will be considered within the Approval for Matters Specified within Conditions (AMSC) application that will be submitted at detailed design stage.

2.1.1.4 At the time of assessment, in the absence of detailed design information, it is assumed that any watercourse within the OnTI RLB has the potential to require a crossing. As such, a number of assumptions have been made to support the watercourse crossing inventory:

- The conditions recorded at each location visited during the site surveys were assumed to be indicative of the rest of the watercourse; and
- A watercourse may be crossed at any point with the most sensitive reach of the watercourse considered within the assessment.

2.1.1.5 Two main types of techniques are likely to be used for watercourse crossings;

- Open Cut Trenching (OCT); and
- Trenchless techniques, such as Horizontal Directional Drilling (HDD)[i].

2.1.1.6 To represent a conservative assessment, it has been assumed that where confirmed construction methods are not available, OCT will be the default crossing construction technique. The use of HDD is assumed to be implemented on all Water Framework Directive (WFD) watercourses and salmonoid watercourses, as secured in the Outline Construction Environmental Management Plan (CEMP).

2.1.1.7 In line with SEPA guidance, the number of watercourse crossings required has been minimised as far as practicable during the OnTI design refinement, and where possible will be further refined at detailed design.

[i] Trenchless crossing techniques hereafter referred to as 'HDD' in this appendix to the EIAR.

2.2 Types of Crossing

2.2.1 Open Cut Trenching

2.2.1.1 OCT involves damming the watercourse upstream and downstream of the crossing to create a dry area where the cable circuits cross the watercourse. Once the area has been pumped out, with suitable environmental and ecological mitigation and controls, the banks and bedding material is excavated and stockpiled. Once the trench is at the correct depth, it will be prepared, and cable circuits placed within in. The trench is then filled with the stockpiled material, reinstating the watercourse bed and banks, before the dams are removed and the watercourse returns to its baseline function.

2.2.1.2 OCT is the primary technique proposed for the Proposed Development (Onshore); however, it is not yet confirmed whether this will be through isolated open cutting (CAR Registration) or by direct open cutting (CAR Simple Licence). This will be confirmed at the detailed design phase.

2.2.2 Horizontal Directional Drilling

2.2.2.1 HDD forms an underground tunnel that follows an arc line from the entry point, located outside the riparian vegetation buffer, down under the watercourse, and then resurfaces on the opposite bank outside the riparian vegetation buffer.

2.2.2.2 This technique, or other trenchless solutions, is proposed for use on five watercourses:

- Burn of Boyndie;
- Burn of Brydock;
- River Deveron;
- Unnamed Tributary of the Burn of Kinminty 4; and
- Burn of Monquhitter.

2.2.2.3 These watercourses are those that are either too large for OCT, are considered to be a sensitive receptor that would not be suitable for OCT or are a WFD watercourse. This technique would be subject to GBR by CAR.

3 Watercourse Crossing Inventory

3.1.1.1 As identified above, there is the potential for any watercourse within the OnTI RLB to require a crossing to facilitate construction. The locations of these watercourses and proposed crossing construction technique are provided within the support tables below. For details on the ecological value of the watercourses including fish habitat suitability and otter surveys, see Volume 5, Chapter 3: Terrestrial Ecology and Biodiversity.

3.1.1.2 The physical attributes of the watercourses were collected during the watercourse surveys. The surveyors visited each watercourse and collected a number of data points. Data was collected using a Esri FieldMap application and a smart phone, equipped with Global Positioning System (GPS) capabilities and a camera. A ranging pole was used to aid estimations of depth and width.

3.1.1.3 The following data was collected and is presented in Table 3-1 to Table 3-37:

- Channel width and depth;
- Bed substrate material;
- Hydromorphological features;
- Bank condition; and
- Photographs.

3.1.1.4 Due to health and safety constraints or access difficulties, it was not possible to survey all watercourses in detail. The watercourses that could not be surveyed include:

- Unnamed Tributary of Boyne Bay 8;
- Unnamed Drain 1;
- Unnamed Tributary of the Burn of Brydock 1.1;
- Unnamed Tributary of the Burn of Brydock 1;
- Unnamed Tributary of the River Deveron 5;
- Burn of Kinminty;
- Unnamed Tributary of the Burn of Monquhitter 3;
- Unnamed Tributary of the Burn of Monquhitter 5.1;
- Unnamed Tributary of the Burn of Balquholly 1;
- Unnamed Tributary of the Burn of Balquholly 7;
- Tifty Burn; and.
- Unnamed Tributary of the Burn of Asleid 1.1

3.1.1.5 The watercourses where field data was unable to be obtained have been omitted from the following tables.

Table 3-1: Unnamed Tributary of Boyne Bay 7

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (metre (m))	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Boyne Bay 7	No	0.5	0.5	Incised field ditch Heavily vegetated and silted bed Fast flowing	Steep banks On SEPA Flood Risk Map – Surface flooding in immediate channel area, medium likelihood	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-2: Unnamed Tributary of Boyne Bay 6

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Boyne Bay 6	No	0.5	0.5	Slow flow Incised field ditch Heavily silted and vegetated bed	Gorse grasses along bank. Not identified as being floodplain on SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						No image available

Table 3-3: Unnamed Tributary of Boyne Bay 5

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Boyne Bay 5	No	0.5	0.5	Incised field ditch. Culverted channel Heavily vegetated and silted bed	Shallow banks. Outfall down muddy slope Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						No image available.

Table 3-4: Unnamed Tributary of Burn of Boyndie 4.1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 4.1	No	0.7	0.5	Heavily vegetated bed with little water present Incised watercourse	Choked with heavy vegetation SEPA Flood Risk Map – Surface water flooding, low likelihood	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-5: Unnamed Tributary of Burn of Boyndie 4

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 4	No	0.5	0.5	Bedding material consisting of small stones and fine sediment. Channelised watercourse	Banks choked with vegetation. SEPA Flood Risk Map – Surface and river flooding in immediate channel area, medium likelihood	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
No image available					No image available	

Table 3-6: Burn of Boyndie

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Boyndie	Yes	2.5	1.5	Bedding material of gravel and silt. Moderate to fast flow. Terraced and channelised.	Steep and shallow banks choked with grasses. Some evidence of erosion. SEPA Flood Risk Map - SEPA Flood Risk Map – Surface and river flooding in immediate channel area, medium likelihood	Crossing type: HDD
Downstream		Channel			Upstream	Wider Area
						

Table 3-7: Unnamed Tributary of Burn of Boyndie 6

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 6	No	1.0	0.5	Heavily vegetated bed. Little to no water present. Incised field drain.	Banks choked with vegetation. SEPA Flood Risk Map – Surface water flooding in immediate channel area, medium likelihood	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
		No image available				No image available

Table 3-8: Unnamed Tributary of Burn of Boyndie 6

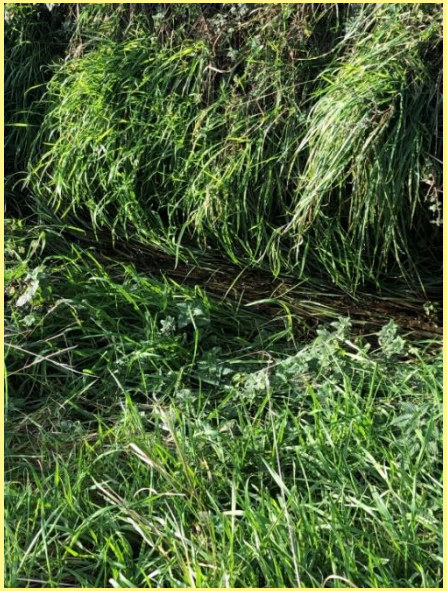
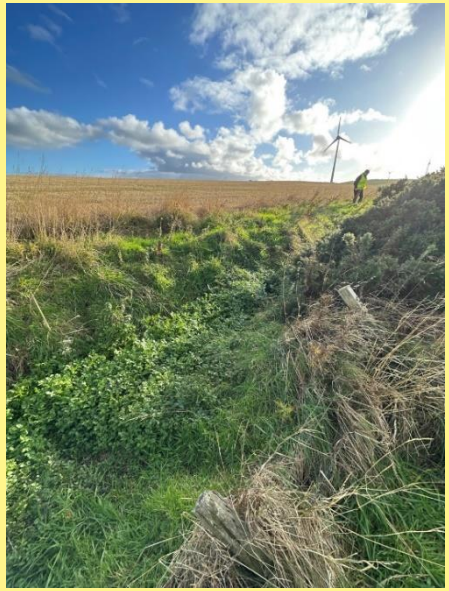
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 6	No	1.2	1.0	Bedding material of grasses. Little to no water present. Incised field drain.	Banks choked with vegetation. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-9:Unnamed Tributary of Burn of Boyndie 7

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 7	No	0.5	0.5	Incised field ditch. Heavily vegetated bed	SEPA Flood Risk Map – Surface water flooding in immediate channel area, medium likelihood	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						No image available.

Table 3-10: Unnamed Tributary of Burn of Boyndie 7.1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 7.1	No	0.5	0.5	Deep cut field drain channel. Heavily vegetated bed	Bankside grasses. Flowing south Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-11: Unnamed Tributary of Burn of Boyndie 5.2.1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 5.2.1	No	1.0	0.5	Bedding of grasses and shrubbery. No water visibly present. Incised field drain.	Banks choked with vegetation. SEPA Flood Risk Map – Surface water flood risk identified in immediate channel area, low likelihood. Adjacent to surface water flood risk, medium likelihood.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						No image available

Table 3-12: Unnamed Tributary of Burn of Boyndie 5.2.2

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 5.2.2	No	0.4	0.5	Water up to 0.1m. Slow flow of water beneath the vegetation. Incised road drain.	Choked with vegetation. Not identified on as being floodplain SEPA Flood Risk Map	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-13: Unnamed Tributary of Burn of Boyndie 5.2

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Boyndie 5.2	No	0.8	0.5	Bed consists of grasses and shrubbery. Well fenced off. Incised field drain with minimal flow.	Banks choked with vegetation. Steep banks with no erosion. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-14: Unnamed Tributary of the Burn of Boyndie 5.2.3

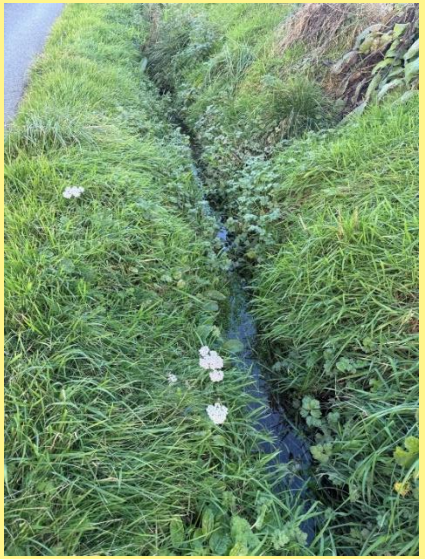
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Boyndie 5.2.3	No	0.3	0.5	Slow and steady stream of water. Bedding material of gravel and fine sediments. Incised road drain.	Banks choked with grasses. SEPA Flood Risk Map – Surface flood risk identified in immediate channel area, low likelihood.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-15: Unnamed Tributary of the Burn of Brydock 2.1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Brydock 2.1	No	1.0	0.5	Walled and fenced in. Unable to see bedding material. Incised field drain.	Banks choked with trees and vegetation. Not identified on as being floodplain SEPA Flood Risk Map	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-16: Burn of Brydock

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Brydock	Yes	1.0	1.0	Minimal bed material; silt and vegetation on bed. Moderate flow. Incised watercourse.	South bank steep and high. Some bank erosion. SEPA Flood Risk Map – River flood risk identified in immediate channel area on the north bank, medium likelihood.	Crossing type: HDD
Downstream		Channel			Upstream	Wider Area
						

Table 3-17: Unnamed Drain 27

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Drain 27	No	0.5	0.5	Highly vegetated bed. Moderate flow Incised watercourse	Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
					No image available.	

Table 3-18: Unnamed Drain 26

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Drain 26	No	0.4	0.4	Highly vegetated bed. No visible water Incised watercourse	Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
					No image available.	

Table 3-19: River Deveron

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
River Deveron	Yes	10.0	2.0	Bedding of shingle and rocks. Fast flowing, deep water. Tall grasses visible on flooded banks. River debris visible above the water level.	First flood banks broken. Vegetated banks. SEPA Flood Risk Map – River flood risk identified in immediate channel, high likelihood. Channel is well connected to the floodplain.	Crossing type: HDD
Downstream		Channel			Upstream	Wider Area
						

Table 3-20: Unnamed Tributary of the River Deveron 4

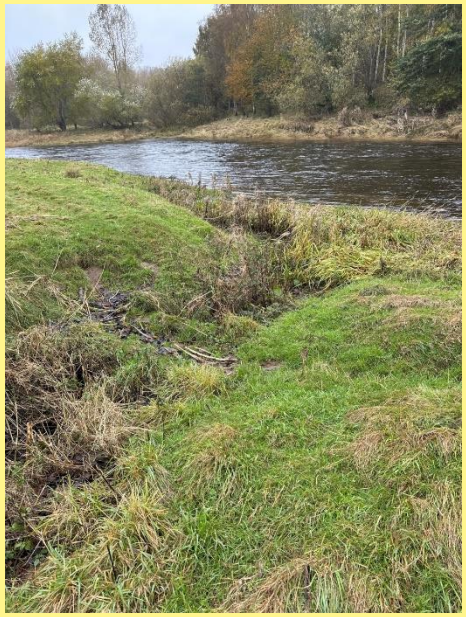
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the River Deveron 4	No	No data available	No data available	Culverted channel Vegetated Small/minor flow into grass bed.	SEPA Flood Risk Map – River flood risk identified in immediate channel, medium likelihood. Channel is well connected to the floodplain.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-21: Lenshie Burn

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Lenshie Burn	No	1.3	0.5	Bedding material mostly grasses. Slow to medium flow. Adjacent to pooling of water at side of the field. Incised field ditch.	No erosion. Choked with leaves and grasses. Not identified on as being floodplain SEPA Flood Risk Map, water level appears high with saturated ground.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-22: Unnamed Drain 41

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Drain 41	No	0.7	0.5	Grassy bed. Little water present. Incised field ditch.	Choked with vegetation and leaves. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-23: Unnamed Tributary of Burn of Kinbate 3

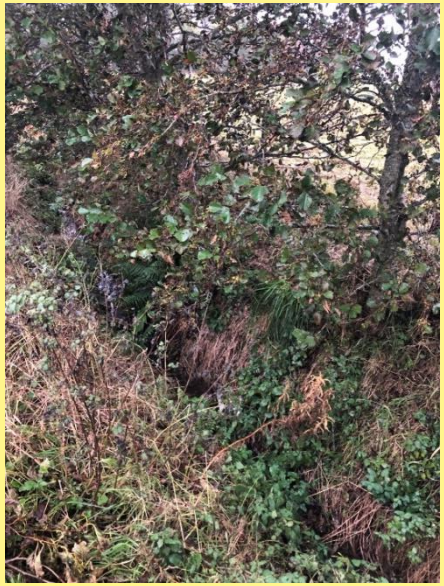
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Kinbate 3	No	0.4	0.5	Stagnant to slow flow of water. Leaves and vegetation in the water. Incised field drain.	Banks choked with grasses. Steep banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-24: Unnamed Tributary of the Burn of Kinminty 4

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Kinminty 4	Yes	0.8	0.2	Fenced in, incised field drain. Moderate to fast flow.	Banks choked with vegetation. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: HDD
Downstream		Channel			Upstream	Wider Area
						

Table 3-25: Unnamed Tributary of the Burn of Kinminty 4

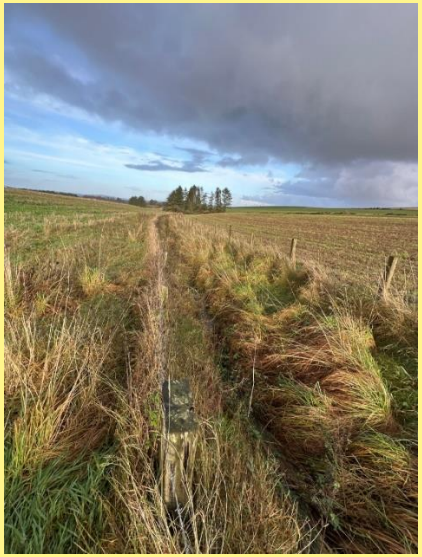
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of Burn of Kinminty 4	Yes	0.7	0.5	Heavily vegetated bed. Fenced, incised field drain. Little water present. Moderate flow.	Heavily vegetated banks (grasses, nettles, docs). Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-26: Burn of Muiryfold

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Muiryfold	No	0.5	0.5	Slow flowing. Bedding of gravel and cobbles. Incised field drain.	Highly vegetated banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-27: Unnamed Tributary of the Burn of Muiryfold 3

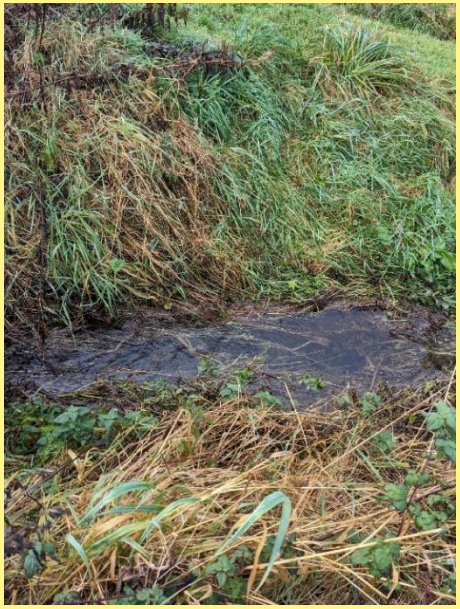
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Muiryfold 3	No	0.5	0.5	Slow flowing. Bedding of small stones and fine sediment. Incised drain.	Highly vegetated banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-28: Burn of Monquhitter

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Monquhitter	Yes	0.75	1.0	Fast flowing. Riffles present. Incised watercourse. Bedding of gravel and cobbles.	Banks choked with vegetation. SEPA Flood Risk Maps – River flood risk identified in immediate channel, medium likelihood.	Crossing type: HDD
Downstream		Channel			Upstream	Wider Area
						

Table 3-29: Unnamed Tributary of the Burn of Monquhitter 5.1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Monquhitter 5.1	No	N/A: Vegetation has infilled the watercourse so that there is no distinguishable channel.		Small drain covered in vegetation. Little channel remaining due to encroaching vegetation and sedimentation.	Highly vegetated banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
		No image available			No image available	No image available

Table 3-30: Unnamed Tributary of the Burn of Monquhitter 5.2

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Monquhitter 5.2	No	0.5	0.5	Heavily vegetated bedding. Little water present. Incised and fenced field drain.	Grassy banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-31: Glen Burn

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Glen Burn	No	0.5	0.5	No water visibly present. Highly vegetated bed. Fenced and incised field ditch.	Highly vegetated banks. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-32: Unnamed Tributary of the Glen Burn 4

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Glen Burn 4	No	0.5	1.0	Fenced and incised field ditch. No water visibly present, sedimented channel.	Banks dense with vegetation. Not identified on as being floodplain SEPA Flood Risk Map.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						No image available

Table 3-33: Unnamed Drain 65

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Drain 65	No	0.5	0.5	Wide grassy channel. Slow flowing / stagnant water visible in the centre. Incised field drain.	Banks choked with vegetation. Not identified on as being floodplain SEPA Flood Risk Map	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-34: Burn of Balquholly

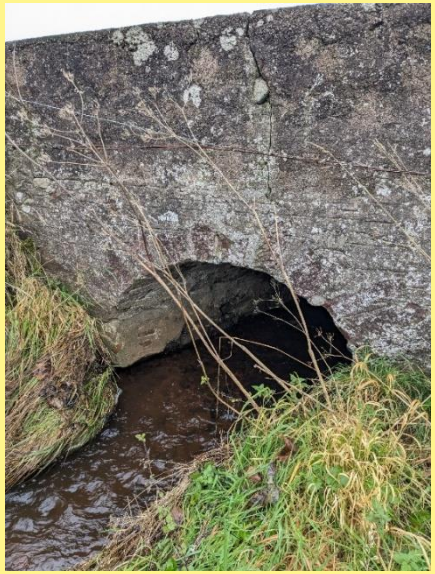
Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Balquholly	No	0.5	1.0	Bed of rocks and silt. Fast flowing. Riffles and runs with a slightly meandering channel.	Vegetated banks. SEPA Flood Risk Map – River flood risk identified upstream from crossing point, medium likelihood.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-35: Unnamed Tributary of the Burn of Balquholly 7

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Balquholly 7	No	0.5	0.5	Bed consisting of small stones and fine sediments. Incised field drain.	Banks choked with grasses. Not identified on as being floodplain SEPA Flood Risk Map	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-36: Unnamed Tributary of the Burn of Asleid 1

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Unnamed Tributary of the Burn of Asleid 1	No	0.5	1.5	Areas of rocky bedding. Fast flow. Incised, fenced field drain.	Highly vegetated. Grassy banks. Not identified on as being floodplain SEPA Flood Risk Map	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

Table 3-37: Burn of Asleid

Watercourse name	WFD or visible on 1:50,000 OS Mapping	Channel width (m)	Bank height (m)	Bed material and physical features	Riverbank and floodplain description	Crossing type
Burn of Asleid	No	1.5	1.0	Gate to keep animals out. Fast flowing. Incised watercourse. Bedding of gravel and small stones.	Grassy banks. SEPA Flood Risk Map – River flood risk identified adjacent to channel, medium likelihood.	Crossing type: OCT
Downstream		Channel			Upstream	Wider Area
						

4 References

[1] Scottish Parliament (2011) 'The Water Environment (Controlled Activities) (Scotland) Regulations 2011'. Published by the Scottish Parliament. Available at: https://www.legislation.gov.uk/ssi/2011/209/contents (Accessed 11/09/2024).

[2] SEPA (2021) 'The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended): A Practical Guide'. Published by SEPA. Available at: https://www.sepa.org.uk/media/cd3doeli/car-a-practical-guide.docx (Accessed 11/09/2024).

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