

TECHNICAL APPENDIX 10.4: SCHEDULE OF WATERCOURSE CROSSINGS

Kirkton Energy Park

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1.0 Introduction

This Technical Appendix contains information relating to watercourse crossings at the proposed development as illustrated on **Figure 10.1** (EIAR Volume 3a: Figures).

The watercourse crossings were identified following review of the OS VectorMap District dataset. A survey of proposed watercourse crossings for the proposed development was then undertaken in October 2021 by an experienced SLR Hydrologist, the details of which are reported herein.

The design of new watercourse crossings would be regulated by SEPA in accordance with The Water Environment (Controlled Activities) (Scotland) (as amended) Regulations 2011 and would be confirmed as part of the detailed site design. Principals for the design of the watercourse crossings is given in the outline Construction Environment Management Plan (CEMP) (EIAR Volume 4a: **Technical Appendix 3.1**).




2.0 Watercourse Crossing Details


Table 2-1 presents information collected from the watercourse crossing survey conducted in October 2021.



Table 2-1: Watercourse Crossing Details

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
1	<p>Watercourse Crossing: WX01</p> <p>Status: Existing</p> <p>NGR: 288753 961422</p> <p>Location: Site entrance road, north of the proposed substation compound location.</p> <p>Watercourse width: - channel dry, ephemeral watercourse up to 0.5m wide</p> <p>Watercourse depth: - channel dry, ephemeral watercourse up to 0.3m wide</p> <p>Notes: Culvert overgrown but light passes through corrugated culvert</p>			







No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
2	<p>Watercourse Crossing: WX02</p> <p>Status: Existing</p> <p>NGR: 288723 961384</p> <p>Location: Site entrance road, north of the proposed substation compound location.</p> <p>Watercourse width: 0.2m</p> <p>Watercourse depth: 0.05m deep watercourse within 0.4m deep drainage channel</p> <p>Notes: Existing culvert blocked with flow diverted down trackside drain to culvert to the south.</p>			

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
3	<p>Watercourse Crossing: WX03</p> <p>Status: Existing</p> <p>NGR: 288662 961252</p> <p>Location: Site entrance road, north west of the proposed substation compound location.</p> <p>Watercourse width: - variable and braided upstream, 0.4m wide channels within 5-10m wide 'valley'</p> <p>Watercourse depth: 0.15m deep channels set within 2m deep 'valley'</p> <p>Notes: Corrugated iron, circular, 1.5m diameter culvert</p> <p>Brick and concrete headwall construction</p>			

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
4	<p>Watercourse Crossing: WX04</p> <p>Status: Existing</p> <p>NGR: 288603 961123</p> <p>Location: North east of the proposed construction compound, and west of the proposed substation compound location.</p> <p>Watercourse width: poorly defined overgrown 0.6m wide channel</p> <p>Watercourse depth: 0.15m deep channel with soft sediment bed</p> <p>Notes: Existing twin corrugated iron 1m diameter culvert. Brick and mortar headwall construction</p>			

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
5	<p>Watercourse Crossing: WX05</p> <p>Status: Existing</p> <p>NGR: 288466 960965</p> <p>Location: South of the proposed construction compound.</p> <p>Watercourse width: 0.4m</p> <p>Watercourse depth: 0.2m</p> <p>Notes: Existing corrugated iron 1m diameter culvert. Brick and mortar headwall construction</p>			

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
6	<p>Watercourse Crossing: WX06</p> <p>Status: New</p> <p>NGR: 288051 960870</p> <p>Location: South of the proposed turbine no.1 location. On the proposed track between turbines 1 and 2.</p> <p>Watercourse width: 0.5m</p> <p>Watercourse depth: 0.15m</p> <p>Notes: 1m/s flow at time of survey. Soil substrate. Incised in larger channel 6m deep, boulders exposed on banks.</p>			
7	<p>Watercourse Crossing: WX07</p> <p>Status: New</p> <p>NGR: 288456 960869</p> <p>Location: South of the proposed construction compound and WX05.</p> <p>Watercourse width: 2.5m (normal width, locally widened for existing ford crossing)</p> <p>Watercourse depth: 0.3m</p> <p>Notes: New WX at existing ford. Watercourse widened for crossing. Cobble substrate. 1.5m/s flow at time of site visit.</p>			
8	<p>Watercourse Crossing: WX08</p> <p>Status: New</p> <p>NGR: 288186 960599</p> <p>Location: East of the proposed turbine no.2 location and on the track to turbines 3 and 4. North east of borrow pit 2.</p>	<p>Crossing Not Surveyed – Located at the head of a minor watercourse and upstream of WX09 (crossing therefore expected to be smaller than at WX09)</p>		

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
9	<p>Watercourse Crossing: WX09</p> <p>Status: Existing</p> <p>NGR: 288485 960718</p> <p>Location: South of WX07 and on the track to turbines 5 to 11.</p> <p>Watercourse width: 0.8m</p> <p>Watercourse depth: 0.3m deep channel with 0.4m banks</p> <p>Notes: 1.8m diameter corrugated iron circular culvert.</p> <p>Some scour upstream and downstream in structure</p>			
10	<p>Watercourse Crossing: WX10</p> <p>Status: New</p> <p>NGR: 287891 958992</p> <p>Location: On the proposed new track between turbines 7 and 8.</p> <p>Watercourse width: 0.4m</p> <p>Watercourse depth: 0.15m</p> <p>Notes: 0.5m deep banks set within sinuous valley with rushes bound to the watercourse. 1m/s flow at time of site survey.</p>			

No.	Watercourse Crossing Details	Photograph of Existing/New Watercourse Crossing Point	Photograph Looking Upstream of Watercourse Crossing	Photograph Looking Downstream of Watercourse Crossing
11	<p>Watercourse Crossing: WX11</p> <p>Status: New</p> <p>NGR: 287902 958832</p> <p>Location: On the proposed new track between turbines 7 and 8. Just south of WX10.</p> <p>Watercourse width: 0.7m</p> <p>Watercourse depth: 0.4m</p> <p>Notes: Fast flowing 0.5m/s at time of survey, sinusoidal pattern with flat/shallow banks, potentially prone to localised flooding.</p>			

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