

Memorandum

To: Gavin Kemble Of: Southdown Holdings
From: Ian Mcindoe Date: 3 June 2009
Subject: **WILLIAMSON HOLDINGS PROJECT SUMMARY**

1 BACKGROUND

(Note: Maps in this summary available in A3 format).

1.1 Property Location

Map References: NZMS 260 H39:598-287

Legal Description: Section 5 SO 372652

Physical Description: Killermont Station

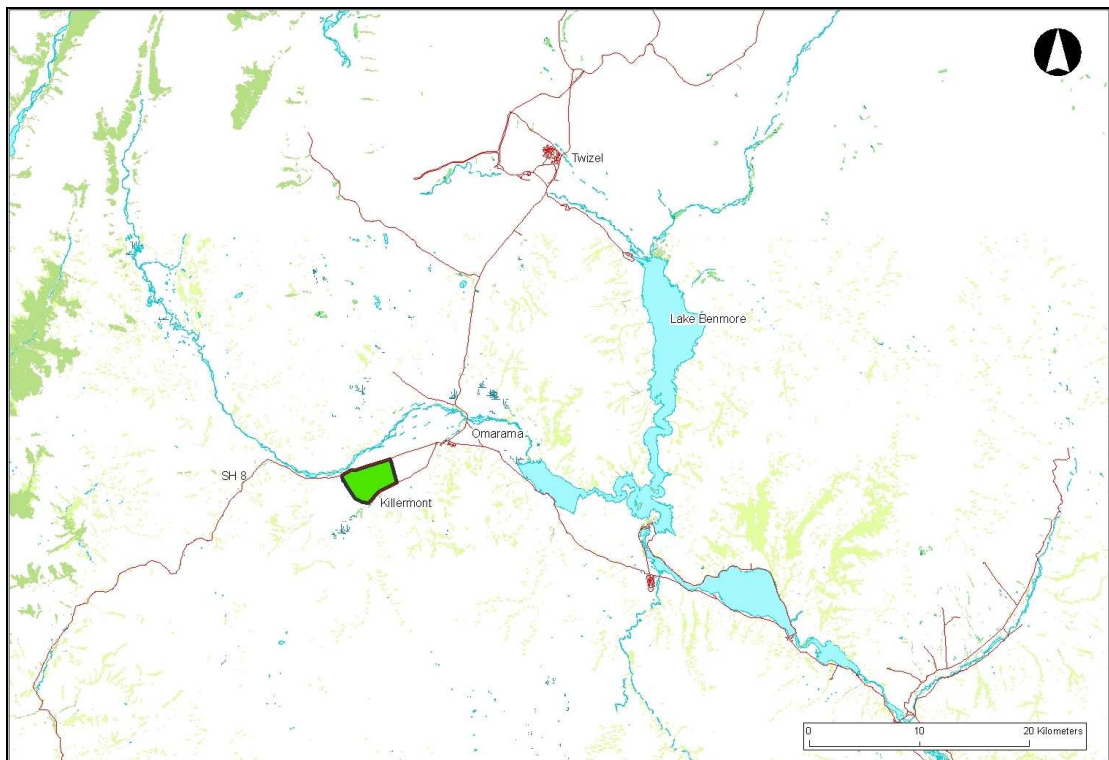


Figure 1: Property location

1.2 Intake/ delivery Options

1.2.1 Option 1:

Intake and pumping station at map reference H39:598-287 on banks of Ahuriri River approximately 250 m north of NW corner of property.

1.2.2 Option 2:

Intake in Ahuriri River approximately 5 km upstream of NW corner of property. Water to be gravity fed in a pipeline from the intake to the property.

1.3 Consent Applications

1.3.1 Option 1:

- a) CRC041787 - A land use consent to disturb the bed and banks of the Ahuriri River between map references H39:596-285 to H39:599-288.
- b) CRC041788 - A water permit to take up 750 ℓ/s and 6,600,000 m³/year of water from the Ahuriri River, at or about map reference H39:598-287 for spray irrigation of pasture and crops, for stock water and domestic use.

1.3.2 Option 2:

- a) CRC073112 - A land use consent to disturb the bed of the Ahuriri River at or about map reference H39:547-283.
- b) CRC073113 - A land use consent to disturb the bed and banks of the Ahuriri River between map references H39:544-287 to H39:546-285.
- c) CRC073114 - A water permit to discharge up to 950 ℓ/s to the Ahuriri River at or about map reference H39:547-283
- d) CRC073115 - A water permit to divert up to 950 ℓ/s of water from the Ahuriri River, at or about map reference H39:545-285, and to take up 750 ℓ/s and 6,600,000 m³/year of water from the Ahuriri River, at or about map reference H39:545-284 for spray irrigation of pasture and crops, for stock water and domestic use.

2 IRRIGATION

Location of irrigated area: Part of Killermont Station, located to the south of SH8 and to the west of Omarama in the Mackenzie Basin. See Figure 2.

Area proposed to be irrigated: 1,100 ha, within a total area of 1,300 ha.

Proposed land use: Pasture for livestock farming, including dairy/ dairy support.

Irrigation method: Centre-pivots covering 999 ha, K-Line covering up to 101 ha. See Figure 7.

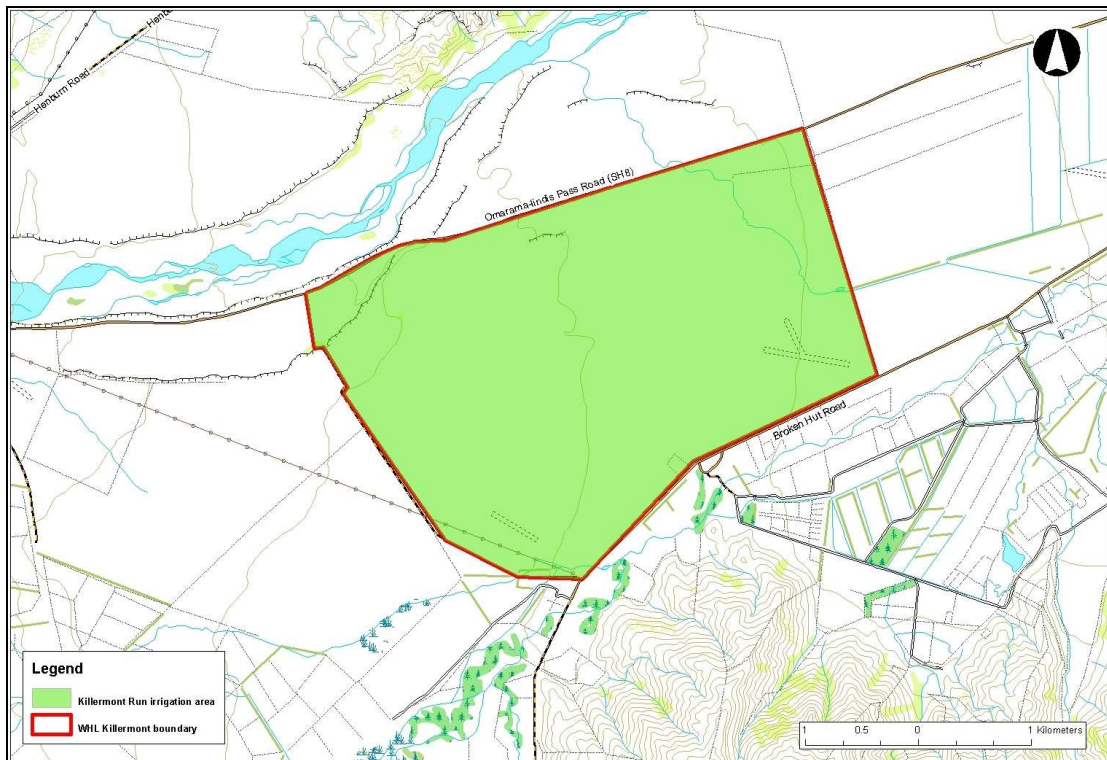


Figure 2: Irrigated area

3 WATER TAKE

3.1 General/ Option 1

MIC shares held: 1,100

Source: Ahuriri River

Maximum flow rate taken: 750 l/s

System capacity: 0.68 l/s/ha, 5.9 mm/d

Daily volume: 64,800 m³/d

Annual volume: 6,600,000 m³/y for irrigation, stockwater, domestic

3.2 Option 2

Maximum flow rate taken: 750 l/s

Daily volume: 64,800 m³/d

Annual volume: 6,600,000 m³/y for irrigation, stockwater, domestic

4 NUTRIENT MANAGEMENT

A high level of nutrient management over the property is proposed.

Stocking rates: On average, 3.5 cows per ha

Grazing plan: Intent to house cows indoors (cubicle stables) part time

Fertilizer plan: Detailed in Ravensdown Nutrient Budget Report dated 18 May 2009.

5 INFRASTRUCTURE DETAILS

5.1 Intake layout and design

Galleries installed beneath the bed of the Ahuriri River are proposed for both Options 1 and 2. (Note changed from original applications).

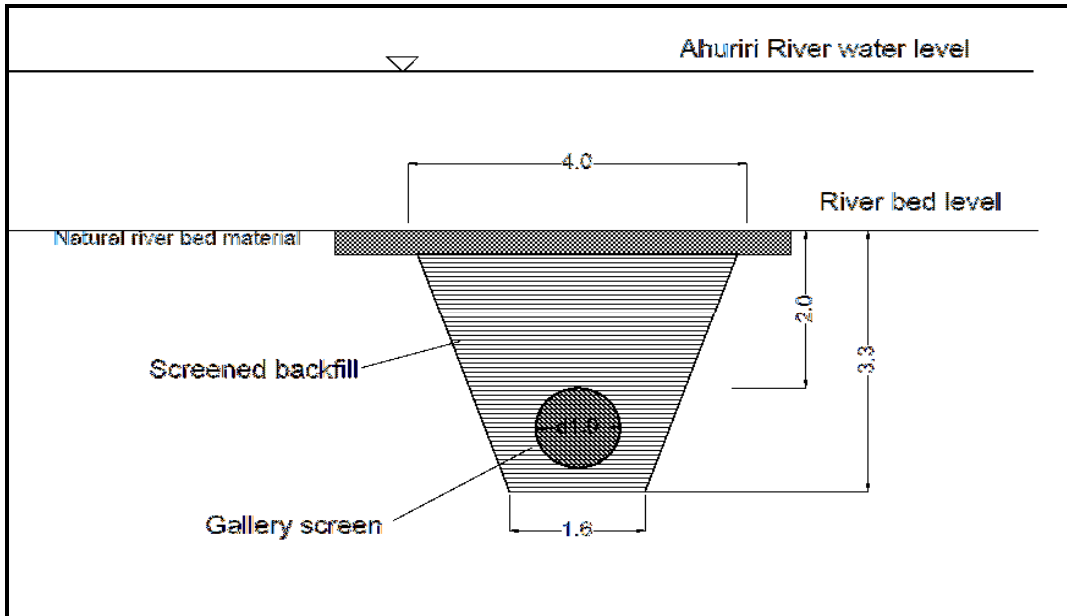


Figure 3 : Gallery cross section

5.1.1 Option 1

Intake type: Buried gallery

Screen type and size: No screen required.

Pump type: Low head surface/submersible - booster system.

Pump control shed: Between SH8 and Ahuriri.River, or near NW corner of proposed irrigated area – depends on final pump selection.

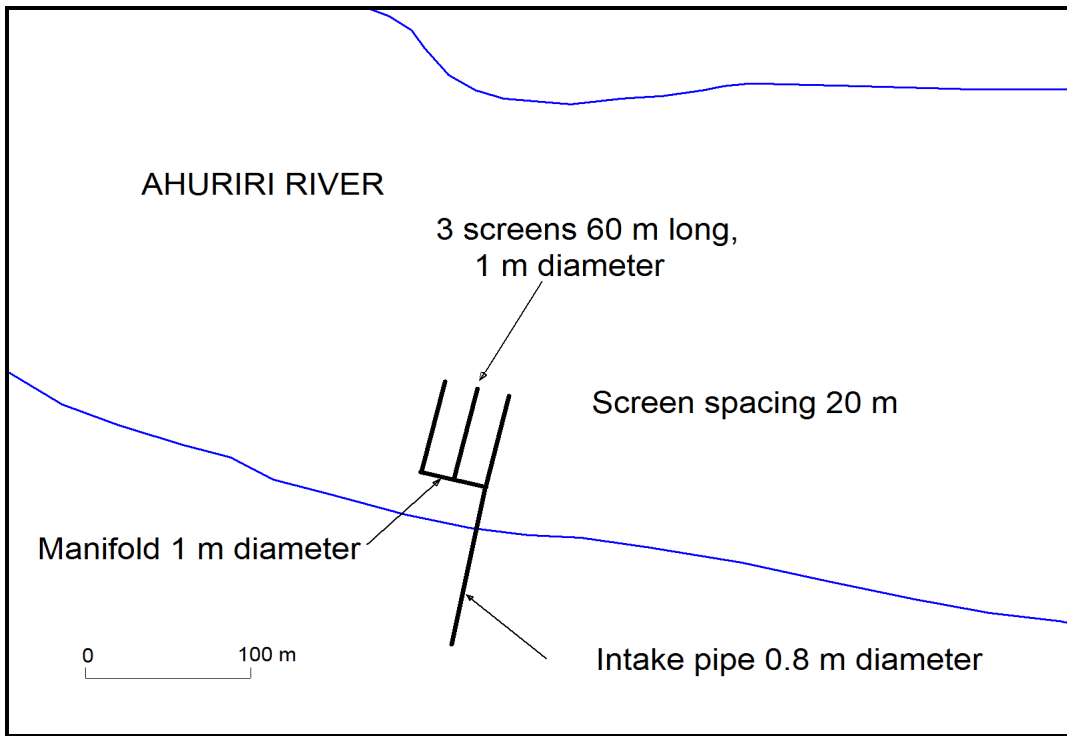


Figure 4 : Gallery plan lower intake option

5.1.2 Option 2

Intake type: Buried gallery

Screen type and size: No screen required.

Pump type: No pumps necessary at intake – gravity system to farm.

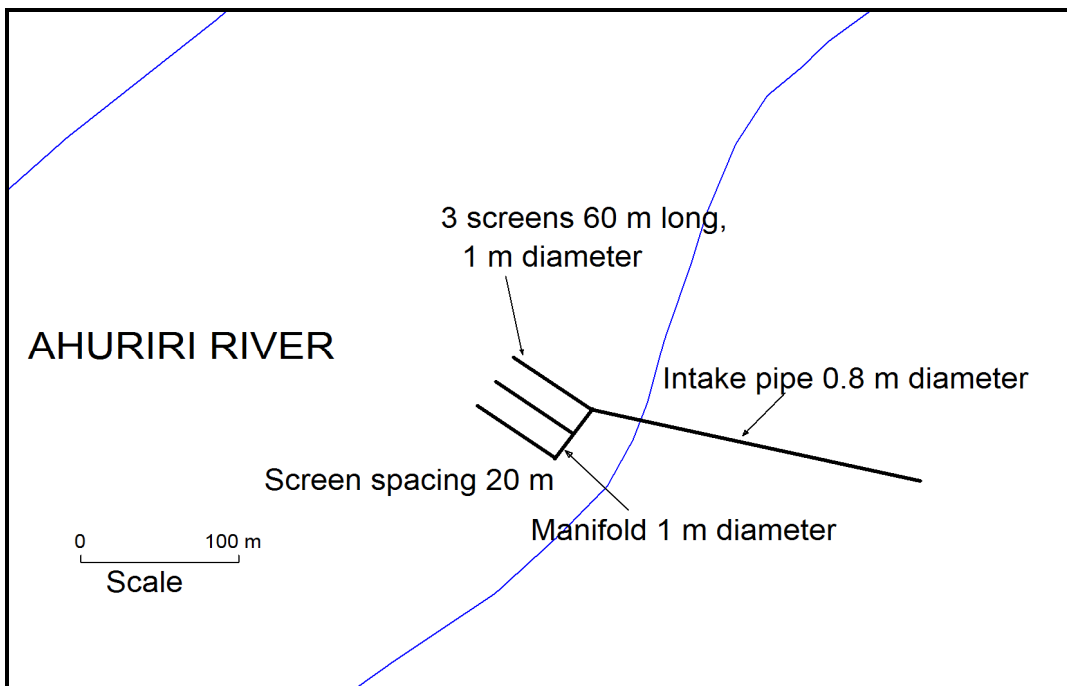


Figure 5 : Gallery plan upper intake option

5.2 Distribution from intake to farm

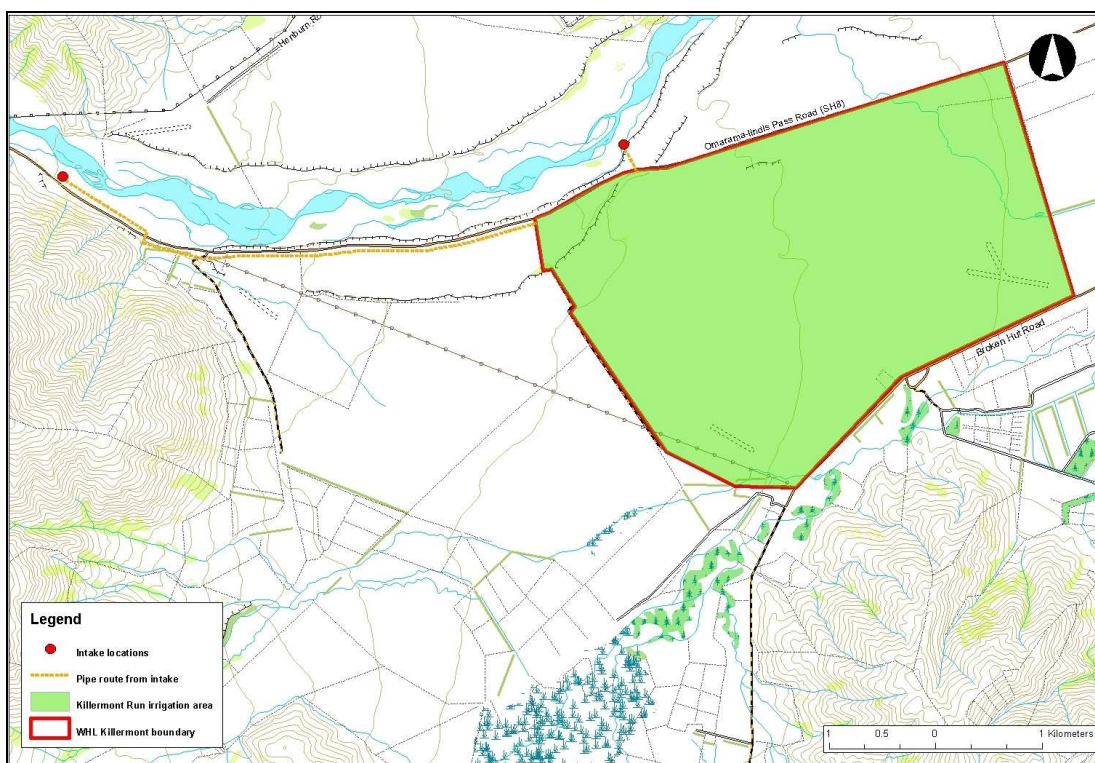


Figure 6: Proposed intake and pipeline locations

5.2.1 Option 1

Pipeline: Proposed 2 x 500 mm diameter PN6 PVC pipe, buried with minimum 400 mm cover, approx 250 m long.

Road crossings: SH8 at or about map reference H39:598-284

Location: Crosses Killermont Station land for about 250 m between SH8 and Ahuriri River (Figure 6).

5.2.2 Option 2

Pipeline: 1 x 900 mm diameter GRP or LDP pipe, buried with 500 mm cover

Road crossings: SH8 at or about map reference H39:553-278

Location: Runs adjacent to the Ahuriri River bed on the northern side of SH8 for approximately 700 m, crosses SH8 above Killermont Station homestead, then runs parallel to SH8 along Killermont Station land for approximately 3.7 km (Figure 6).

5.3 Irrigation system

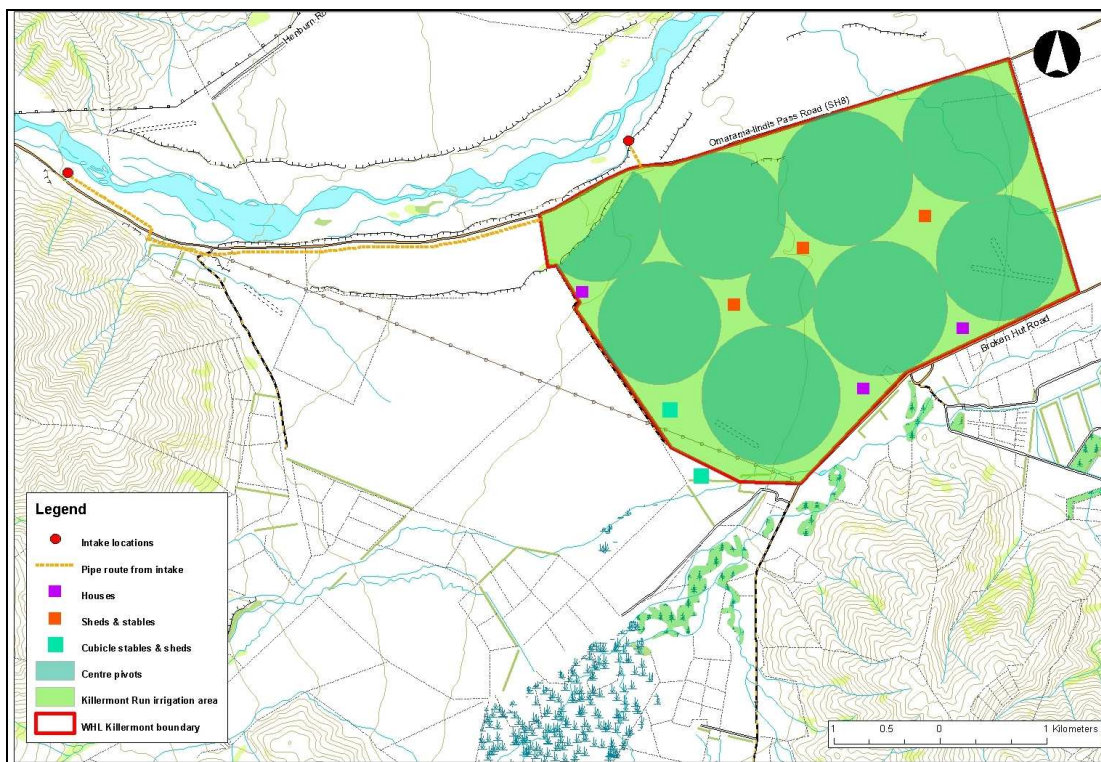


Figure 7: Proposed irrigation layout

5.3.1 Design layout

Irrigators: 9 centre-pivots (8 full circle, 1 half circle, ranging from 325 m to 717 m long). K Lines in gaps and corners (Figure 7).

Pipelines: Buried PVC pipe or similar.

5.3.2 Powerlines

Required to supply electricity to pumps and irrigators and other infrastructure. Lines for conveying up to 110kV, lines for conveying telecommunication signals and transformers and substations are all permitted activities under the Waitaki District Plan.

5.3.3 Culverts & bridges

Minimal required. Bridges and/or culverts will be installed where needed along Tara Hills water race to allow one or perhaps two irrigators to cross over (Figure 8).

5.3.4 Above-ground infrastructure

Other than irrigators and associated equipment, the only water related infrastructure above ground will be:

- Pump/ control shed on Ahuriri River bank and gallery into the Ahuriri River
- Irrigation equipment

Under the Waitaki District Plan structures that are less than 10 m² gross floor area and/or 2 m in height are not considered buildings and no resource consent is required.

The pump shed required under Option 1 is likely to be in excess of 10 m² therefore consent will be required. No pump shed is required under Option 2 as this will be a gravity fed system.

5.3.5 Application efficiency

Target: Will be greater than 80% on a seasonal basis over the property.

Actual performance: Irrigation design standards and operational performance will need to result in an application efficiency exceeding 80% to achieve target production levels, due to restrictions on irrigation system capacity and seasonal allocation limits.

6 LAND USE

6.1 Areas of vegetation to be removed

Natural vegetation: Unimproved grasses, sweet briar, hieracium.

Proposed cultivation: All of the irrigated land (1100 ha) and most of the dry land will be cultivated for pasture and crop production.

6.2 Setbacks from waterways

6.2.1 Manuka Creek

Location: 400 m of stream crosses the property (SW corner) beside existing power lines, at most 100 m from property boundary. Joins into Omarama Stream (Figure 8).

Flow: Only flows during high flood events (rare).

Setback from irrigation area: Irrigation will not pass over creek. Creek to be fenced off approximately 5 m from bank and riparian vegetation established (refer to Figure 9). Irrigation will not occur on the south side of Wairepo Creek.

6.2.2 Omarama Stream

Location: Omarama Stream does not flow through the property. At its closest the stream flows approximately 200 m south of the property, on the south side of Broken Hut Road (Figure 8).

Flow: Generally flowing.

6.2.3 Omarama Station irrigation water race:

Location: Was across NE corner of property (Figure 8).

Flow: Has recently been removed and replaced with underground pipeline.

6.2.4 Tara Hills Station irrigation water race:

Location: Flows across the NE corner of property between SH8 and Broken Hut Rd, west of former Omarama Station race (Figure 8).

Status: Operational

Flow: 500 ℓ/s, although does not flow continuously (used for irrigation and to supplement flows in Omarama Stream)

Setback: As far as possible the race will run between the pivot circles. Where this is not practical bridges and/or culverts will be used to allow irrigators to cross over, and irrigate over the race. No fertiliser will be applied in the irrigated waters. The race is to be fenced off approximately 3 m from bank (refer to Figure 9).

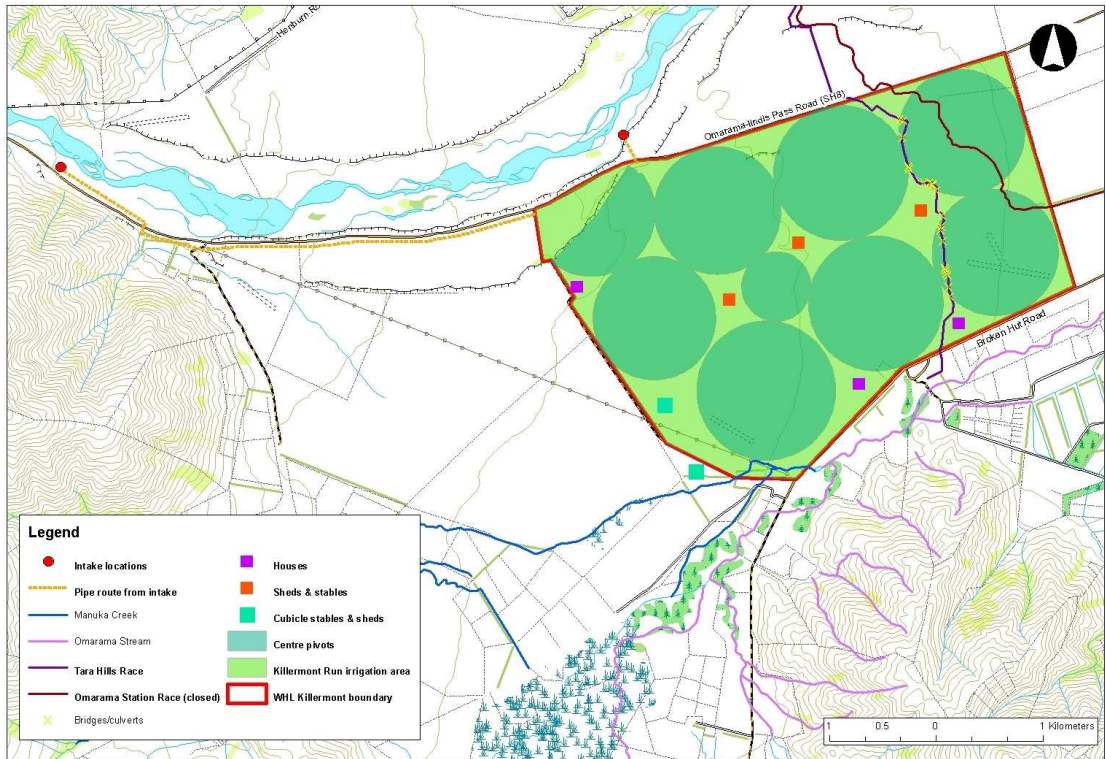


Figure 8: Waterways within irrigation area and indicative infrastructure

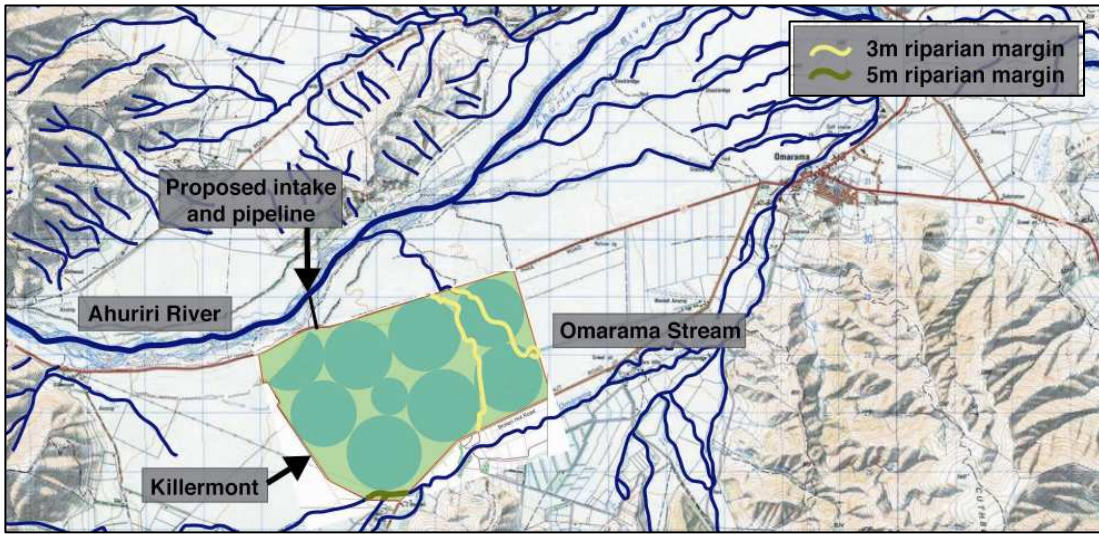


Figure 9: Waterways within irrigation area and indicative infrastructure