

26 February 2021

Water Resource Management Ltd 5 Teignmouth Street Abbotsford Dunedin 9018

Attn: Matt Hickey

Re: Royal Burn – Gauging results for work completed 22 February 2021

NIWA Alexandra were engaged to complete flow gauging measurements within the Royal Burn catchment to enable determination of flow losses or gains in this reach, as requested by the client.

This measurement work was completed on 22 February 2021.

A total of 9 locations chosen by the client, were visited by the NIWA Alexandra Field Team. Discharge measurements using a Sontek 'FlowTracker' ADV instrument were completed at each location. The small flow volume in hydraulically difficult, weedy channel locations were raked and modified to obtain the best flow condition possible, prior to each measurement.

The results and photographs are in a table attached to this letter.

Should you have any question relating to this work, please contact me.

Yours faithfully Neil Blair

Approved for release Marty Flanagan

Group Manager - South Island Field Teams

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National Institute of Water & Atmospheric Research Ltd PO Box 12 Alexandra 9040

NIWA Project: WRM21901



Results table:

Gauged flow results are summarised in the following table (in order of time sampled).

	Time	Site				Stage	Flow
Date	(NZST)	Number	Site Name	Waypoint	Location NZTM	(mm)	(L/s)
					E1295458		
22/02/2021	7:53	100	Royal Burn at SH 6	504	N5007801	N/A	25.5
					E1274718		
22/02/2021	8:37	200	Royal Burn at Crown Rd Bridge	505	N5011356	200	44.3
					E1275292		
22/02/2021	9:20	300	Royal Burn at Swamp	506	N5011779	N/A	12.4
					E1275363		
22/02/2021	9:54	400	Royal Burn North Branch at below Glencoe Rd culvert	507	N5011898	N/A	9.0
					E1275433		
22/02/2021	10:26	500	Royal Burn South Branch at above Glencoe Rd culvert	508	N5011882	N/A	8.8
					E1275636		
22/02/2021	11:17	600	Royal Burn at Below Brodie Race	509	N5012388	N/A	16.8
					E1275639		
22/02/2021	12:20	700	Royal Burn at above Brodie Race	510	N5012403	N/A	25.4
					E1275632		
22/02/2021	12:16	800	Royal Burn at below top intake	512	N5012970	N/A	20.0
					E1275710		
22/02/2021	13:13	900	Royal Burn at above top take	511	N5013048	N/A	19.2



1. Site Photos:



Figure 1: Site 100 view upstream



Figure 2: Site 100 view downstream



Figure 3: Site 200 view upstream



Figure 4: View downstream



Figure 4: Site 200 External Staff Gauge



Figure 5: Site 300 view from true right bank



Figure 6: Site 300 view upstream



Figure 7: Site 300 view downstream



Figure 8: Site 400 view downstream



Figure 9: Site 400 view upstream

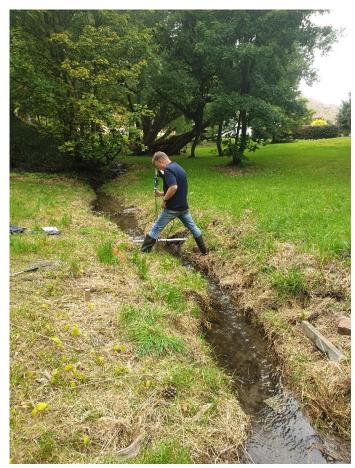


Figure 10: Site 500 view upstream



Figure 11: Site 500 view downstream



Figure 12: Site 600 view upstream



Figure 13: Site 600 view downstream



Figure 14: Site 700 view downstream



Figure 15: Site 700 view upstream



Figure 16: Site 800 view upstream



Figure 17: Site 800 view downstream



Figure 18: Dam intake



Figure 19: Dam intake from bank



Figure 20: Site 900 view downstream





2. Site Map:



