

DUNSTAN PEAKS: SUMMARY TABLE OF NOTIFICATION VERSUS CURRENT PROPOSAL

<b>Twin Burn Station - Little Omarama</b>			
<b>Details for Comparison</b>	<b>Originally Notified</b>	<b>Current Proposal</b>	<b>Summary of Key Differences</b>
Irrigation Method	Border Dyke	Spray Irrigation	Change from borders to an efficient gravity spray irrigation system
Diversion Location	H40:635-166	H40: 6346-1667	Same location
Take Location	H40:635-166	H40: 6310-1683	Technical change of take location which reflects existing practice
Intake Structure	Diversion Structure	Same structure upgraded	Same structure but upgraded with fish screen and water meter
Works in Bed	Disturb bed and banks	Disturb bed and banks	Same activity required
Area of Irrigation	30ha	30ha + 56.5 Ha	Same area of irrigation plus 56.5ha previously supplied by Omarama Stream
Location of Irrigation	Twinburn Station	Twinburn Station	Irrigation to remain in its same location on the same property
Location of Discharge	None notified	None required	Discharge not notified and not required under current proposal
Divert Flowrate	170 l/s	60 l/s	Huge reduction in flowrate diverted, even with supplying Little Omarama irrigation area
Take Flowrate	170 l/s	60 l/s	Huge reduction in flowrate taken, even with supplying Little Omarama irrigation area
Annual Volume	180,000 m <sup>3</sup>	180,000m <sup>3</sup> + 339,000m <sup>3</sup>	Increase of 339,000 m <sup>3</sup> in annual volume, previously supplied by Omarama Stream
Discharge Flowrate	None notified	None required	
Discharge Volume	None notified	None required	Discharge not notified and not required under current proposal

<b>Twin Burn Station - Omarama Stream</b>			
<b>Details for Comparison</b>	<b>Originally Notified</b>	<b>Current Proposal</b>	<b>Summary of Key Differences</b>
Irrigation Method	Border Dyke	Spray Irrigation	Change from borders to an efficient gravity spray irrigation system supply by Little Omarama
Diversion Location	H40:613-159	Little Omarama - H40: 6346-1667	Relocation of divert/take from Little Omarama existing intake. Existing intake becomes redundant once spray operating. Diversion location is effectively transferred downstream still on Omarama Stream, to supply Clifton Downs irrigation.
Take Location	H40:613-159	Omarama Stream between H40: 6163-1866 and H40:61399-1992	
Intake Structure	Diversion Structure	Little Omarama structure upgraded. Existing structure on Omarama Stream becomes redundant and new structure downstream	New location from Little Omarama existing intake which is upgraded. Existing intake becomes redundant once spray conversion complete. New intake installed downstream still on Omarama Stream, to supply Clifton Downs irrigation. Details in Augmentation/Clifton Downs section
Works in Bed	Disturb bed and banks		
Area of Irrigation	115 ha	0ha	The 56.5 ha at Twinburn Station remains in the same location but under the current proposal is to be supplied by Little Omarama as detailed above. Excess irrigation area of 58.5ha is transferred downstream to Clifton Downs
Location of Irrigation	Twinburn Station	Twinburn Station and Clifton Downs	
Location of Discharge	None notified	None required	Discharge not notified and not required under current proposal

Divert Flowrate	350 l/s		No water to be diverted under current proposal to supply Twinburn. However 40l/s (58.5 ha at 6mm/day) under the current proposal is proposed to be taken further downstream on Omarama Stream to supply Clifton Downs.
Take Flowrate	350 l/s	0 l/s.	
Annual Volume	690,000 m3	0 m3	No annual volume under current proposal. 339,000 m3 becomes allocated to Little Omarama and the remaining 351,000m3 is effectively transferred downstream to supply Clifton Downs.
Discharge Flowrate	None notified	None required	Discharge not notified and not required under current proposal
Discharge Volume	None notified	None required	

#### Dunstan Peaks - Omarama Stream and Middle Gully

Details for Comparison	Originally Notified	Current Proposal	Summary of Key Differences
Irrigation Method	Border Dyke	Spray Irrigation	Change from borders to an efficient gravity spray irrigation system
Omarama Stream Diversion/Take	H40: 615-177	H40: 6136-1752	Same divert/take location
Electricity Generation Divert	H40:613-197	Not proposed	No bywash water with spray irrigation, therefore unpractical going forward
Intake Structure	Diversion Structure at Omarama Stream	The same diversion structure at Omarama Stream.	Same Omarama Stream existing intake but upgraded.
Works in Bed	Disturb bed and banks at Omarama Stream	Disturb bed and banks at Omarama Stream	Same activity but with upgraded intake
Area of Irrigation	170ha	50ha	Reduction in area of irrigation, with 50ha to be upgraded to spray irrigation in Middle Gully (Omarama Stream supply). Wild flood area becomes redundant, apart from 9ha shall be spray irrigated and supplied by Twaddles Creek. Remaining area of 111ha is proposed to be transferred to Clifton Downs
Location of Irrigation	Dunstan Peaks	Dunstan Peaks and Clifton Downs	50ha of irrigation to remain in its same location on Dunstan Peaks, Middle Gully. 9ha Dunstan Peaks to remain in its same location but supplied by Twaddles Creek. 111ha transferred to Clifton Downs
Location of Discharge	Twaddles Creek - H40:613-197	None required	Discharge not notified and not required under current proposal
Omarama Stream Diversion/Take	290 l/s	35 l/s	35l/s continues to be taken from Omarama Stream. Current proposal means 76.6 l/s (111ha at 6mm/day) of remaining water effectively transferred downstream on Omarama Stream to supply Clifton Downs.
Electricity Generation Divert	115 l/s	0 l/s	No border dyke bywash means the electricity system becomes redundant

Omarama Stream Annual Volume	1,020,000m <sup>3</sup>	300,000 m <sup>3</sup>	A total of 300,000m <sup>3</sup> is required from Omarama Stream at the existing intake. Remaining annual volume from Omarama Stream, is effectively transferred downstream to supply Clifton Downs at 666,000 m <sup>3</sup> . Furthermore 54,000m <sup>3</sup> is transferred to be supplied from Twaddles Creek (still irrigating same area)
Electricity Annual Volume	0m <sup>3</sup>	0 m <sup>3</sup>	No border dyke bywash means the electricity system becomes redundant
Discharge Flowrate	30l/s	None required	Discharge not notified and not required under current proposal
Discharge Volume	None notified	None required	

#### Dunstan Peaks - Twaddles Creek

Details for Comparison	Originally Notified	Current Proposal	Summary of Key Differences
Irrigation Method	Border Dyke	Spray Irrigation	Change from borders to an efficient gravity spray irrigation system
Diversion/Take Location	H40: 603-198	H40: 6029-1981	Same location
Intake Structure	Diversion Structure	Same structure upgraded	Same structure but upgraded with fish screen and water meter
Works in Bed	Disturb bed and banks	Disturb bed and banks	Same activity required
Area of Irrigation	15ha	24ha	Same area of irrigation plus an additional 9ha previously supplied by Omarama Stream as detailed in previous section
Location of Irrigation	Dunstan Peaks	Dunstan Peaks and the option for a small area on Clifton Downs	Irrigation to remain in its same location plus the ability to irrigate within a small area of Clifton Downs, adjacent the existing irrigation area
Location of Discharge	None notified	None required	Discharge not notified and not required under current proposal
Divert/Take Flowrate	100 l/s	17 l/s	Huge reduction in flowrate
Annual Volume	None notified	144,000 m <sup>3</sup>	No annual volume notified which has now been proposed to reflect spray irrigation requirements for 24ha
Discharge Flowrate	None notified	None required	Discharge not notified and not required under current proposal
Discharge Volume	None notified	None required	

#### Dunstan Peaks - Augmentation Race

Details for Comparison	Originally Notified	Current Proposal	Summary of Key Differences
Irrigation Method	Supply Race	Supply Race	No change in water use
Diversion Location	H40: 614-192	H40: 6133-1920 and between H40: 6163-1866 and H40:61399-1992	Same location plus the ability to divert from a new location given the change to spray within Middle Gully. With no inefficient by-wash water (from Omarama Stream) that has been sustaining the diversion, it is unknown how reliable the current divert location will be.
Intake Structure	Diversion Structure	Same structure and new structure from Omarama Stream	The existing intake if used is proposed to be water metered. The new intake from Omarama stream is proposed to be a buried gallery intake or concrete wing-wall intake similar to the existing intakes on the properties.

Works in Bed	Disturb bed and banks	Disturb bed and banks for both structures	Same activity required, now for both locations
Area of Irrigation	0 ha	0 ha	No change in use of the water as notified
Location of Irrigation	Divert location on Dunstan Peaks. Discharge location on Clifton Downs.	Divert location on Dunstan Peaks. Discharge location on Clifton Downs.	No change in the location of the supply race, just an additional intake, still on Dunstan Peaks in Omarama Stream. This is effectively using the same Omarama Stream water that would have been used from the border by-wash (however water remains instream and is taken further downstream, rather than border bywash).
Location of Discharge	H40: 607-201	H40: 607-201	Same discharge location
Divert Flowrate	150 l/s	150 l/s	Same flowrate
Annual Volume	None notified	No volume - operated 365 days/year if water available	No volume was specified or has been proposed as divert for 365 days/year if water available
Discharge Flowrate	150 l/s	150 l/s	Same flowrate
Discharge Volume	None notified	No volume - operated 365 days/year if water available	No volume was specified or has been proposed as taken 365 days/year if water available

#### Clifton Downs - Twaddles Creek and Omarama Stream

Details for Comparison	Originally Notified	Current Proposal	Summary of Key Differences
Irrigation Method	Wild flood	Spray Irrigation	Change from borders to an efficient gravity spray irrigation system
Diversion Location	H40: 606-219	Between H40: 6163-1866 and H40:61399-1992	New diversion location in Omarama Stream in conjunction with the new augmentation race intake as detailed above.
Intake Structure	Diversion Structure	New buried gallery structure or concrete structure similar to other on the property from Omarama Stream	
Works in Bed	Disturb bed and banks	Disturb bed and banks for construction and remedial work	Same works in bed and banks etc but at new location
Area of Irrigation	12 ha	181.5ha	Large increase in irrigation area, at Clifton Downs but no increase across the three properties. 12ha will remain at Clifton Downs plus the addition of 58.5 ha from Twin Burn and 111 ha from Dunstan Peaks
Location of Irrigation	Clifton Downs, Twin Burn and Dunstan Peaks	Clifton Downs	
Location of Discharge	None notified	No discharge	No discharge notified and none required
Divert Flowrate	45 l/s	45l/s from Twaddles now 0 l/s. 125 l/s proposed (Omarama Stream)	New diversion location means utilising water previously consented upstream on Omarama Stream for Twin Burn and Dunstan Peaks. Omarama Stream take at Twin Burn was 350l/s now 0 l/s and the take for Dunstan was for 290l/s now uses 35l/s for irrigation and 150l/s diverted for the augmentation race leaving 105 l/s. Overall a huge reduction in flow rate across the three properties.

Annual Volume	None notified	1,089,000 m3	No volume was specified at Clifton Downs for the 12ha notified. 1,089,000m3 is based on 72,000 for the 12ha notified at Clifton, 351,000m3 from Twinburn (Omarama Stream and 666,000m3 from Dunstan Peaks (Omarama Stream). Overall there is no increase in annual volume over three properties.
Discharge Flowrate	None notified	No discharge	
Discharge Volume	None notified	No discharge	
			No discharge notified and none required