

**BEFORE THE COMMISSIONERS ON BEHALF OF
THE OTAGO REGIONAL COUNCIL**

Consent No. RM18.345

BETWEEN

**LUGGATE IRRIGATION
COMPANY LIMITED AND LAKE
MCKAY STATION LIMITED**

Applicant

AND

OTAGO REGIONAL COUNCIL

Consent Authority

**EVIDENCE OF MICHAEL ROBERT KELLY
EVIDENCE ON BEHALF OF LUGGATE IRRIGATION COMPANY LIMITED AND
LAKE MCKAY STATION LIMITED**

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EVIDENCE OF MICHAEL ROBERT KELLY

1. My full name is Michael Robert Kelly
2. I hold the qualifications Bachelor of Science in Geology from Victoria University, and a Master of Applied Science in Planning and Climatology, from Lincoln University.
3. I am currently employed as a Senior Planner for WSP-Opus in the Alexandra office. I have been in this role since 2004 and involved with Planning advice on land and roading development projects, with a specialisation in farm developments projects and water permit Planning advice.
4. Prior to 2004 I worked for the Otago Regional Council as a Consents Officer for seven years. Over this period I was involved with the renewal of Deemed permits that were required in the 10 year period following the enactment of the RMA (1991) and the establishment of the Regional Plan: Water. The notified uses of water that were associated with the Crown Irrigation Schemes were also being renewed and converted to RMA permits at the end of this 10 year period.
5. I have been engaged by Luggate Irrigation Company Limited and Lake McKay Station Limited to provide Planning advice for their applications for replacement water permits in the Luggate catchment.
6. I confirm that I have read and agree to comply with the Environment Court Code of Conduct for Expert Witnesses (Consolidated Practice Note 2014). This evidence is within my area of expertise, except where I state that I am relying on what I have been told by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.
7. I have been involved with Lake McKay Station in providing Planning advice since 2008. Initially for the previous owners of the Station in assisting with verification of their water permits and then with the current owner Mr Harvey with the development of the irrigation schemes on the Big River block and the Tin Hut terrace area.

8. For the Big River block this included applying for a permit to take water from the Clutha River, obtaining the concession from DoC for a pipeline easement to the River, earthworks consent for a stock underpass and Agreements with NZTA , and consent for centre pivot irrigators.
9. For the Tin Hut terrace area the Planning work included consent for earthworks for installation of the pipeline, application for exemption on the location of the measuring device and investigations into a storage dam.
10. Previous Planning work for the Luggate Irrigation Company involved verification of their deemed permits in 2011 and application for exemption on the location of the measuring device.
11. The Planning work in the last few years has been associated with the ten year review of the QLDC District Plan and applications to rezone land for Rural Lifestyle and Rural Residential land developments on Lake McKay Station. One of the applications established a 12 hectare Rural residential housing development zone on the northwest side of Luggate.
12. I was not involved with the initial application to replace the deemed permits for Lake McKay Station and Luggate Irrigation Company Ltd that was submitted in September 2018. This application was completed by Mr Harvey.
13. I became involved with the application in February 2019 in assisting with the response to a request for further information from the ORC, then from May through to the present in compiling the Revised Application for the Deemed permits, that was Limited notified in July 2019, and Planning advice for the current revised application in September 2019.

SCOPE OF EVIDENCE

14. My evidence to this hearing will cover the following aspects of the Luggate Irrigation Company Limited and Lake McKay Station Limited (abbreviated to LIC/LMS) applications for replacement water permits from the Luggate catchment:
 - a. Background to the LIC/LMS applications

- b. Evolution of LIC/LMS Application
- c. Clarification of Irrigation Areas and proposed Residential Development.
- d. Irrigation Development History
- e. Proposals for fish screening at Intakes.
- f. Residual flows

Background to the LIC/LMS applications

15. Lake McKay Station Limited (LMS) is the owner of Lake McKay Station which is a 6000 ha farm property located to the south of Luggate. The property is a predominantly sheep farming enterprise with minor beef cattle grazing. The Company is wholly owned by Colin Harvey.
16. LMS holds two water permits to take up to 170 l/s of water from the south branch of Luggate Creek. One of the permits is a deemed permit for 113 l/s that was originally granted in the Mining Wardens court in 1966. The other permit was granted in 1976 to take a further 56 l/s from the same point of take. The permits are currently used to irrigate 168 hectares of pasture and crops and a further 110 hectares of pasture development is planned.
17. Luggate Irrigation Company Limited (LIC) has four deemed permits with a total allocation of 254 l/s. The permits were initially granted in the 1890s and continued until 1966 when they were transferred to the Crown. In 1990 when the Crown divested its interest in irrigation schemes the permits were transferred to two local farmers who formed the Luggate Irrigation Company(LIC) . . The LIC currently has three shareholders. The following Table sets out the details of the shareholders, the Managing Director for each shareholding Company and the existing and potential irrigation areas.

Shareholder	Managing Director	Existing Irrigated Area	Proposed Irrigated area
Crystal Rivers 2018 Ltd	Ben Trotter	108	

D J Pittaway	J Umbers	22	78
Lake McKay Limited Partnership	Murray Frost	8 l/s Allocation for Domestic use for Residential development	85

18. The initial application to replace the Deemed permits (RM18-345) was made in September 2018 at which time Lake McKay Station Limited was a shareholder in Luggate Irrigation Company and therefore was an owner of water permits in both Companies. Hence the application was made as a joint application under the general name of the Luggate Partnership.
19. In recent months Lake McKay Station Limited has sold a 370 hectare block of land to the Lake McKay Limited Partnership along with their share of the Luggate Irrigation Company.
20. The application for the water permits has continued as a joint application on behalf of the two Companies but with the request that new permits are issued separately to Lake McKay Station Ltd and to Luggate Irrigation Company Ltd. .

Evolution of LIC/LMS Application

21. The initial application was lodged September 2018 for the replacement of the existing deemed permits that were held by LMS and LIC. The application was for the full replacement of the existing permits for a rate of take of 423 l/s.
22. The water would be used for the irrigation of 616 hectares (both existing and proposed development areas) and included 8 l/s for domestic supply for a proposed residential development of up to 250 houses and 3 l/s for stockwater.
23. The proposed residential development is on Lake McKay Station and consisted of the following land areas;

- i- A 12 hectare block of land off Atkins Road, on the north side of Luggate, that had recently been rezoned (via the QLDC District Plan Review) from Rural to a Rural Residential. This allowed for low density residential Lots of 4000m² (approx 25 lots) .A resource consent to subdivide would be required. This block of land has the potential for a further Plan change to a Township zone that would allow for subdivision to 800m² Lots (approx 100 Lots).
 - ii- A 70 hectare block of land on the terrace above SH6 (see attached plan in Appendix 1) also has potential for further residential development. This land is still zoned Rural and would require an application for a Plan Change to transfer the land to Rural Residential or Rural Lifestyle zoning.
24. A site visit was held on the 9th May 2019 for the affected parties and ORC. Following that a joint meeting with Criffel Water Ltd and the affected parties was held on 4th June. At these meetings it became apparent that there was concern for the high allocation of water from Luggate Creek and concern for the amount of planned future irrigation.
25. In July 2019 the LMS/LIC Partnership lodged a revised application with the ORC that was Limited Notified to the affected parties on 19th July 2019. This application was for a take of 362 l/s, for the irrigation of 526 hectares, stockwater, and domestic supply for a residential development of up to 250 houses. The irrigation area comprised of 298 hectares of existing irrigated area and 228 hectares of future irrigation development area. This application was for 61 l/s (instantaneous rate of take) less than the initial application and for 224 hectares less potential future irrigation area.
26. The revised application July 2019 received submissions in opposition from the Department of Conservation, Fish & Game Otago, and Aukaha. The concerns from these submissions were on the over- allocation in the catchment, the current low minimum flow on Luggate Creek, fish screening and residual flows.
27. Written approvals were received from the NZTA and Public Health South. NZTA was an affected party due to a pipe for the LIC water race extending under SH6 at the base of the Luggate Hill. LIC commissioned an engineer to confirm that the pipe under the highway was in good condition and NZTA

subsequently issued a Deed of Grant for the pipe to remain within the road reserve. Hence NZTA had no further concerns and submitted a written approval. Public Health South advised that they considered they were not an affected party for this application but envisaged that they would be involved with any later applications for consent for the proposed residential development.

28. Following the close of submission period for the Revised application (29 Aug 2019) further discussions were held with Criffel Water Limited to form a Water Management group and water sharing agreement for the Luggate catchment. An agreement was formed in September 2019 for an allocation regime for water taken for irrigation that comprised of a Primary allocation block of 538 l/s and supplementary blocks of 250 l/s.
29. The Agreement set out how the water within these blocks would be allocated between the two water user groups and other details for Scheme Management Plan and a rationing agreement for periods of low flows.
30. Revised applications for the Luggate Partnership and Criffel Water Ltd were notified to the Council and the affected parties on 19th September 2019. A Summary of the Revised Application is shown in the following Table.

Parameter	Criffel Water Limited	Luggate Irrigation/Lake McKay	Catchment Total
Primary allocation take rate	358l/s	Total: 180l/s Luggate Irrigation = 87l/s Lake McKay = 93l/s	538l/s
Water use	Irrigation, stockwater and domestic supply	Irrigation, stockwater and domestic supply	Irrigation, stockwater and domestic supply
First Supplementary allocation take rate	170l/s	Total = 80l/s Luggate Irrigation = 27l/s Lake McKay = 53l/s	250l/s
Second		Total = 86l/s	

Supplementary Allocation take rate	80l/s		Luggate Irrigation = 42l/s Lake McKay = 44l/s		166l/s	
Primary allocation Volume	Annual	6,578,496m ³	Annual	TBC	Annual	TBC
	31. Monthly	1,096,416m ³	Monthly	TBC	Monthly	TBC
Primary Allocation Minimum Flow	Summer = 180l/s Winter = 500l/s		Summer = 180l/s Winter = 500l/s		Summer = 180l/s Winter = 500l/s	
Supplementary Allocation Volume	2,899,890m ³		TBC			
First Supplementary Minimum flow	788l/s		N/A		788l/s	
Second Supplementary Minimum flow	1038l/s		N/A		1038l/s	
Residual flows	90l/s below weir		<u>LMS take point in South branch.</u> 46l/s Tributary Take - nil	<u>LIC Take Points.</u> Visual connected flow to the confluence of south and north branch - TBC	N/A	
Flow sharing	Offered		Offered		N/A	
Scheme Management and surrender of unused water within 10 years	Offered		Offered		N/A	
Irrigation Area	Primary = 619ha		Primary = 298ha		Primary = 917ha	

	Supplementary = 400ha Total = 1019	Supplementary = 278ha Total Area = 576ha	Supplementary = 678ha Total Area = 1595ha
Stock and domestic supply¹	Section 14	10l/s (8l/s for domestic supply) from primary allocation.	
Review condition	Standard + Weir maintenance	Standard	Standard
Term	35 years	35 years	35 years

Clarification of Irrigation Areas and proposed Residential Development

32. The revised application (Sept 2019) for LMS/LIC resulted in a reduction in the amount of water applied for from 362 l/s to 346 l/s (including primary and supplementary allocations). This included the irrigation of 298 ha of existing irrigated land and up to 278 ha of future irrigation land.
33. It is noted that the amount of future irrigated land in the Revised application (Sept 2019) was increased by 50 hectares. This was due to two aspects of the water sharing Agreement between the water users which were;
- i. The application rate for water taken as primary allocation was standardised at 5mm applied water depth per day or a continuous flow of 0.6 l/s/ha. The previous LMS/LIC applications had used a higher application rate of 0.7 l/s/ha for the Big River Umbers block which included an allowance for losses in the distribution system. Hence when the application rate was standardised at a lower rate there was potentially more water available in the supplementary blocks.
 - ii. In the revised application in July 2019 the area of planned future irrigation development was reduced by 50 hectares due to concern for water surety for irrigation supply. (This was half of the area shown as the Home Block on the Irrigation Areas Plan). However now that the Primary and Supplementary allocations have been agreed to this land
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has been added back into the command area for future irrigation development with the supplementary water allocation (the lower valued water) and requiring additional storage water.

34. A 370 ha block of lake McKay Station land (the front terraces) has been purchased by Lake McKay Limited Partnership, a company owned by Murray Frost. The area includes the 12 ha area on the outskirts of Luggate that has recently been approved in the proposed QLDC District Plan for rural residential zoning. The Upper Clutha area has experienced rapid growth in the last few years and there is a shortage of land for residential development. The area on the terraces to the north west of Luggate has access to SH6 and is also considered suitable for residential development.
35. It is recognised that water for any larger residential developments would not be covered by Section 14(3)(b) of the RMA, which allows for stockwater and domestic supply to an individual. In which case a Communal domestic water supply would be restricted by minimum flows.
36. Given this situation the revised application Sept 2019 includes an Agreement between the water users that future “communal” domestic water supply that is restricted by the minimum flow would be given a priority over irrigation water. The water sharing agreement will include a clause that requires the irrigation water to be cut out off at a level above the minimum flow level to allow for the communal domestic supply to continue without breaching the minimum flow. The requirement for this condition will be added to proposed condition 12.

Irrigation Development History.

37. Lake McKay Station has been following a land development programme over the last 25 years and the installation of modern spray irrigation systems has been integral to this development.
38. There is a large cost involved in the establishment of irrigation infrastructure and hence the developments have been staged over a number of years.

39. The programme started with the previous land owners (the Mathewsons) entering the land tenure review process for pastoral high country leases, around 1992. The tenure review was completed in February 2002 and resulted in 2,800 ha of the high country land going to the Department of Conservation and 5,600 ha of the lower altitude land being free-held. Under the pastoral lease the development of land to exotic pasture and irrigation was limited by the lease agreement with the Crown. So the justification in the tenure review process for giving up the high country grazing land was that freeholding of the lower country would allow the land to be developed and irrigated with the Luggate Creek water permits.
40. The Mathewsons began the development process in the early 2000s by converting the Tin Hut terrace lands to pasture. This included pest eradication, fencing costs and pasture development in preparation for the installation of irrigation.
41. The Harveys purchased Lake McKay Station in 2008 and continued the development of the irrigation scheme on the improved pasture areas. The original water take for permit 97803 from the south branch of Luggate Creek (Aliceburn) was via a 5km long water race. The first stage of the development of an irrigation scheme was the installation of a pipeline in the water race. Piping the race has saved around 30 to 40 litres per second in losses in the race and this water is now used for irrigation. The installation of the pipeline and the distribution lines for the Stage 1 area was completed in early 2012. The distribution network to the Stage 2 area was completed in 2014 with a total cost of \$1.5M.
42. Over this period the Harveys also purchased the Big River property(now owned by Mr ben trotters Company) on the north side of SH6 which, at the time, was previously irrigated by border dyke and contour flood from the Luggate Irrigation Company water race. In the period 2010 - 2014 this area of 108 ha was converted into modern pasture and spray irrigation with the installation of 2 centre pivots and K line.
43. As noted in Colin Harveys evidence the cost of the irrigation scheme on the Big River block was around \$1.5M and the conversion of the land and installation of a stock underpass under SH6 additional to this.

44. Alternative water supplies to these areas were considered at the time. The ECNZ drilling programme for the proposed Clutha dam at Luggate established that there was no groundwater in the gravels underlying the terrace to the south of Wanaka airport.
45. A water supply from the Clutha was investigated. A permit to take water from the Clutha was obtained along with easements from DoC for a pipeline and pump to be installed in the marginal strip. Due to the tight clay impacted gravels on the margin of the Clutha and it was not possible to construct shallow bore intakes setback from the river edge. An expensive stormwater pump had to be installed in a shallow well on the rivers edge which was not ideal with the risk for flood damage. The installation required a 250m pipeline with lift of around 40m to the terrace on the Big River block. The problems with this design and the cost of connecting a power supply from the closest grid point near the highway was prohibitive. Added to these problems is the relatively recent problem of having to filter surface water from the Clutha for didymo.
46. Hence the option to use the Luggate creek water supply is the only feasible option. The permit to take water from Clutha has since lapsed.
47. The next stages for the irrigation development programme are the Home Block (now owned by Lake McKay Limited Partnership), supplied from the Luggate Irrigation Company water permits and the Stage 3 and Stage 3 Extn areas on Lake McKay Station supplied from the Alice Burn permits. (See Appendix 6 in the Revised application July 2019 for reports from Waterforce on the proposed irrigation for these areas). Under the proposed water sharing regime the water supply to these areas will be a supplementary take and will require storage to provide adequate irrigation cover.

Proposals for Fish Screening at Intakes

48. The Revised Application July 2019 proposed the following for fish screening on the intakes for the LMS and LIC permits.
49. The LMS permit for the upper Aliceburn has two points of take, one in the main stem of the Aliceburn and one in a tributary of the Aliceburn. The main

stem intake is an open pipe intake and at approximately 400m downstream of the intake a filter box/trash screen is installed in the pipeline (see Appendix 5 Revised Application July 2019 – ORC Water Inspection photos). No additional fish screen is proposed for this intake as the fish surveys for this section of Aliceburn have not observed any fish present - as described in the evidence of Richard Allibone.

50. The intake in the tributary of the Aliceburn is a gallery intake that is currently installed with a slotted screen. This is a low flow tributary that is located at the same altitude as the main stem intake and no fish have been observed in the tributary. In which case the existing screen is considered adequate for this intake.
51. The LIC water permits have two intakes with one in the lower Aliceburn and one in the north branch of Luggate Creek. The intakes are channelled into one water race around 400m downstream of each point of take. In the revised application July 2019 we proposed one fish screen to be installed in the water race approximately 10m upstream of the flow measuring flume. The screen would be located at an existing bywash point in the water race which would allow any fish in the race to have an escape route back to Luggate Creek. This location was promoted for the following reasons;
 - i. One screen in the water race is less cost for installation and less onerous for maintenance.
 - i. A screen at this location allows fish access to the initial section of the water race from the Aliceburn that has been observed as good trout spawning environment and requested by F&G to remain open for fish access.
 - ii. The bywash structure at this location in the water race is suitable for installing a fish screen that will comply with the good practice guidelines for fish screening as referenced in the NIWA Client report CHC2007 - Fish Screening: good practice guidelines for Canterbury
 - iii. Located in the race away from the point of take should result in less problems with debris blocking the screen.
52. At the Pre- hearing meeting held on 20th September there was general agreement from the affected parties for this proposed single fish screen in the

race. Following the Pre- hearing meeting Fish and Game sent requested conditions for the design and operation of this fish screen. The proposed conditions for this fish screen in the proposed draft water permit for LIC have largely adopted the conditions promoted by Fish & Game.

Residual Flows

53. The residual flows promoted in the Revised Application September 2019 were as follows;
 - 46 l/s at the upper Alice burn intake as requested by F & G in their submission to the revised application July 2019.
 - A Visual connecting flow from the LIC points of take to the confluence of the north and south branch of Luggate Ck.
54. Following the Pre- hearing meeting the LIC shareholders are promoting a residual flow of 100 l/s downstream for the north branch intake. That offer is made purely to address Aukaha's concerns rather than as a concession that a residual flow is required at that point.
55. Matt Hickey's evidence has further commentary on the appropriateness of the proposed residual flows.

Mike Kelly

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WSP Opus