

Crown Pastoral Land Tenure Review

Lease name : THE BEECHES II

Lease number : PO 175

Due Diligence Report (including Status Report) - Part 1

This report and attachments results from a pre-Tenure Review assessment of the pastoral lease for the purpose of confirming land available for Tenure Review and any issues, rights or obligations attaching to it. The information is gathered from files and other sources available to the LINZ contractor.

Part of the information relates to research on the status of the land, resulting in a Status Report that is signed off by a LINZ approving officer. The remainder of the information is not analysed for relevancy or possible action until required, and LINZ does not guarantee its accuracy or completeness as presented.

The report attached is released under the Official Information Act 1982.

July 09

PASTORAL LEASE
LAND TENURE
REVIEW

DUE DILIGENCE

THE BEECHES II

**DUE DILIGENCE REPORT - THE BEECHES II
CROWN PASTORAL LAND PRE TENURE REVIEW ASSESSMENT STANDARD 6**

File Ref:	CON / 50272 / 09 / 12506 / A-ZNO	Report No:	Q V V 345	Report Date:	21 May, 2002
Accredited Supplier	ABERCROMBIE & ASSOCIATES LTD	LINZ Case No:	TR02/548	Date sent to LINZ	22/5/2002

RECOMMENDATIONS

- 1 That the Commissioner of Crown Lands or his delegate **note** this Due Diligence Report which has been prepared in accordance with the Pre Tenure Review Assessment Standard;
- 2 That the Commissioner of Crown Lands or his delegate note the following incomplete actions which require action by the Manager, Crown Property Management *[or other party]*;

Details of incomplete actions requiring completion by the CCPO or other party:

*Not TR matter
Required by legislation*

Land for marginal strip along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 was removed from the lease on renewal by 841857 with no derived reduction of the leased area. Notwithstanding the lessee agreeing to the conditional lease renewal, there is no known record of compensation having been paid to the lessee for the dispossession.

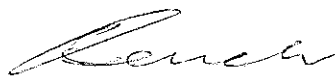
An un-registered right has been granted to a party other than the lessee by the agent for CCL for constructing a water race, in conjunction with an irrigation scheme taking water from Pig Burn, on the north eastern leased land boundary. There is no known recorded CCL consent for the occupation.

Signed by Sub-contractor:



David J Abercrombie
Nominated Person for Accredited Supplier

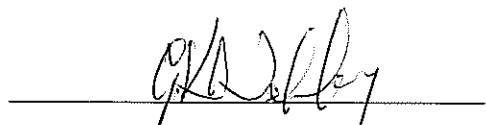
Signed by contractor:



Barry Dench
Team Leader for Tenure Review
Quotable Value [Valuations]

Approved / ~~Declined~~

[pursuant to a delegation from the Commissioner of Crown Lands] by:



[GRANT KASPER WEBLEY]

Date of decision: 27/05/02

1 Details of lease:

Lease name:	The Beeches II
Location:	Patearoa, Central Otago
Lessee:	I D McDonald, F D McDonald and O I McDonald [$\frac{1}{2}$ share] and A W Weir and S G Weir [$\frac{1}{2}$ share].
Tenure:	Pastoral lease of pastoral land pursuant to the Land Act 1948.
Term:	33 years from 1 July 1959. The lease was renewed for a further 33 years as at 1 July 1992.
Annual rent:	\$975.00
Rental value:	\$65 000.00
Date of next review:	1 July 2003
Land registry Folio Ref:	OT386/123 [See copy at appendix 1]
Legal description:	Run 204 D, Otago Land District
Area:	2205.5368 hectares

2 *File Search*

Files held by accredited supplier on behalf of LINZ:

File reference	Volume	First folio number	Date	Last folio number	Date
P 212	I	1	26 July 1913	174	2 August 1990
[previously known as PR 1913 and then PR 1697]					
P 212	II	175	17 May 1990	252	8 June 1999
CON/50213/09/12506/A-ZNO	1		29 Aug 2000	25	6 March 2002

Folios relating to uncompleted actions are:

File reference	Volume	Folio number	Date
P 212	I	174	2 August 1990
P 212	II	177	28 November 1990
P 212	II	179	4 December 1990
P 212	II	181	20 December 1990

For further details see Section 8 of this due diligence report.

3 Summary of lease document

Terms of lease

Lease number:	P 212
Commencement date:	1 July 1959
Renewal instrument number:	841857 [See copy at appendix 2]
Lease stock limits:	4840 sheep
Memorandum of Variation	Not applicable
Any non-standard conditions	There are no non-standard conditions

Area adjustments

The area comprising the Marginal Strips have not been deducted from the area of land leased except through application of Part IV of the Conservation Act on renewal of the lease by 841857 - for further details see appendix 3.

Registered interests

SUBSTANTIAL INTEREST	SUMMARY
841857 - Renewal	In accordance with lease provisions
893789.3 - Mortgage to NZ Guardian Trust Company Limited	Personal to McDonalds as lessee
929862.3 - Mortgage to Westpac Banking Corporation	Personal to Weirs as lessee

Unregistered interests

INTEREST	SUMMARY
Recreation permits	There is no record on file of any recreation permits over the lease
Unsecured debts	None known
Marginal Strips	Marginal strips exist along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 was removed from the lease on renewal by 841857 - <i>for further details see appendix 3.</i>
Other	An un-registered right has been granted to a party other than the lessee for constructing a water race, in conjunction with an irrigation scheme taking water from Pig Burn, on the north eastern leased land boundary - <i>for further details see appendix 4.</i>

4 Summarise any Government programmes approved for the lease:

Not applicable

5 Summary of Land Status Report

The land the subject of this report is Crown Land subject to Pastoral Lease P 212 as certified by the Chief Surveyor, Dunedin.

A copy of the certified land status report is appended as Schedule A.

6 *Review of topographical and cadastral data*

Telecommunications facilities	Believed to be not applicable
Electricity transmission facilities	Believed to be not applicable
Historic places	Believed to be not applicable
Discrepancies between fenced and legal boundaries	Believed to be not applicable
Formed Roads	The various roads/tracks do not follow a legal road alignment
Paper roads	Not applicable
Marginal strips	There are marginal strips along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 <i>[For further details see appendix 3]</i>
Other [specify]	Believed to be not applicable

[See copy of cadastral plan and topographical map at appendix 5]

7 Details of any neighbouring Crown or conservation land

In a clockwise manner the Crown [including land of the crown] or conservation land adjoining/adjacent to the land the subject of this report is:

Part Run 204B

SITUATION	STATUS
North of leased land	Crown land subject to pastoral lease as recorded in register volume OT386/60

Run 204C

SITUATION	STATUS
Northeast of leased land	Crown land subject to pastoral lease as recorded in register volume OT386/84

Part Run 711

SITUATION	STATUS
East of leased land	Crown land subject to pastoral lease as recorded in register volume OTA2/1300

Section 1, SO 24790

SITUATION	STATUS
East of leased land	Held for conservation purposes by GN 983219.1

Sections 1 & 13, SO 24788

SITUATION	STATUS
Southeast of leased land	Held for conservation purposes by GN5055320.2 [see also CT 9329]

Run 204 F

SITUATION	STATUS
North of leased land	Crown land subject to pastoral lease as recorded in register volume OT386/107

8 Summarise any uncompleted actions or potential liabilities

Your attention is drawn to the following:

Land for marginal strip along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 was removed from the lease on renewal by 841857 with no derived reduction of the leased area. Notwithstanding the lessee agreeing to the conditional lease renewal, there is no known record of compensation having been paid to the lessee for the dispossession *[For further details see appendix 3]*.

An un-registered right has been granted to a party other than the lessee by the agent for CCL for constructing a water race, in conjunction with an irrigation scheme taking water from Pig Burn, on the north eastern leased land boundary. There is no known recorded CCL consent for the occupation *[For further details see appendix 4]*.

ATTACHMENTS

Schedule A land status report [including enclosures]

Appendix 1 Register volume copy of pastoral lease

Appendix 2 Memorandum of renewal of lease - 841857

Appendix 3 File search summary comprising copies of relevant supporting folios referenced
in this due diligence report
 - Marginal Strip

 - SO 1827

Appendix 4 Copies of relevant un-registered agreement
 [water race]

Appendix 5 Cadastral plan and topographical map of pastoral lease

"RELEASED UNDER THE OFFICIAL INFORMATION ACT"

ABERCROMBIE AND ASSOCIATES LIMITED

PROPERTY MANAGERS AND CONSULTANTS

P O BOX 5056
MORAY PLACE
DUNEDIN

PHONE (03) 471 9496
FACSIMILE (03) 471 9455
EMAIL office@abercrombie.co.nz

C:\DATA\CONSULT\CLIENT\QVNZ\CONTRACT2002\mk2\CS Status Cert Beeches II.wpd

This report has been prepared on the instructions of Crown Property Management, Land Information New Zealand, and is undertaken for the purposes of the Crown Pastoral Leases Act 1998.

LAND STATUS REPORT	THE BEECHES II	P 212	[LIPS Ref. 12506]
Property	1	of	1

Land District	Otago
Legal Description	Run 204 D
Area	2205.5368 hectares
Status	Crown Land subject to Pastoral Lease P 212
Instrument of Lease	Reg Vol OT386/123 registered in Land Transfer Office but not under Land Transfer Act
Encumbrances	Marginal strip along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 on renewal of the lease by 841857.
Mineral Ownership	Crown [see comment below]
Statute	Land Act 1948, Crown Pastoral Land Act 1998

Data Correct as at:	24 April, 2002
Accredited Supplier certification	As attached

Prepared by	David J Abercrombie
Crown Accredited Supplier	Abercrombie & Associates Ltd

Certified correct as to status:



Chief Surveyor
Land Information New Zealand, Dunedin

6 / 5 / 2002

Notes: This information does not affect the status of the land but was identified as possibly requiring further investigation at the due diligence stage: See Crown Pastoral Standard 6 paragraph 6

Land for marginal strip along Pig Burn as shown marked A - B and A - C on SO 1827 created pursuant to Sections 24(9) and 24(F), Conservation Act 1987 was removed from the lease on renewal by 841857 with no derived reduction of the leased area. Notwithstanding the lessee agreeing to the conditional lease renewal, there is no known record of compensation having been paid to the lessee for the dispossession.

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Research Data: Some items may not be applicable

SDI Print obtained	Yes <i>[See attached]</i>
NZMS 261 Ref	H 42
Local Authority	Central Otago District Council
Crown Acquisition Map	Yes To determine agreement for purchase from Ngai Tahu
SO Plan	1827 <i>[See evidence attached]</i>
Relevant Gazette Notices	Not applicable
CT Reference / Lease Reference	Pastoral Lease P 212, Reg Vol OT386/123. Lease renewed by 841857. NOTE: For history of land see below <i>[See evidence attached]</i>
Legislation Cards	Not applicable
CLR	Yes <i>[See evidence attached]</i>
Allocation Maps [if applicable]	Not applicable
QVNZ Reference	28330/21000
Crown Grant Maps	Yes - There are no references for the subject property

Research - continued

If Crown land - Check Irrigation Maps.	Yes There are no references for the subject property
Mining Maps	Yes There are no references for the subject property
Other Relevant Information	
a) Concessions - Advice from DoC	a) Nil <i>[See evidence attached from DoC]</i>
b) Subject to any provisions of the Ngai Tahu Claims Settlement Act 1998	b) Only on divestment of freehold or a lease of fifty years or greater by LINZ as a Crown Body
c) Mineral Ownership	c) Mines and Minerals are owned by the Crown because the land has never been alienated from the Crown since its acquisition from Ngai Tahu by way of the Kemp Purchase.
d) Other Info	

History of ownership:

Purchased from Ngai Tahu by the Kemp Purchase of 1848.

No record of crown grants having been made

Selected for lease and Pastoral License 1339 issued as at 1 March 1909 and comprising 5450 acres - no registration.

On expiry of PL1339, Pastoral License 1692 issued as at 1 March 1924 as recorded in register volume OT335/179 [comprises 5450 acres - 2205.5368 hectares by title metric conversion].

On expiry of PL1692, Pastoral Lease 212 was issued as at 1 July 1959 as recorded in register volume OT386/123 [comprises 5450 acres - 2205.5368 hectares by title metric conversion].

Status, description of land and area are now as indicated above.

"RELEASED UNDER THE OFFICIAL INFORMATION ACT"



**COMPUTER INTEREST REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy

R. W. Muir
Registrar-General
of Land

Identifier OT386/123
Land Registration District Otago
Date Registered 20 August 1959 11:42 am

Prior References
OT335/179

Type	Lease under s83 Land Act 1948	Term	Thirty-three years commencing on the first day of July 1959 and renewed for a further 33 years
Area	2205.5368 hectares more or less		

Legal Description Run 204D

Proprietors

Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald as to a 1/2 share
Andrew William Weir and Stuart Gerard Weir as to a 1/2 share

Interests

841857 Renewal of lease for a further term of 33 years and fixing (for the first 11 years) the annual rent at \$975.00 calculated on a rental value of \$65,000.00 - 4.11.1993 at 9.17 am
893789.3 Mortgage of their 1/2 share Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald to The New Zealand Guardian Trust Company Limited - 19.10.1995 at 9.59 am
929862.3 Mortgage of their 1/2 share Andrew William Weir and Stuart Gerard Weir to Westpac Banking Corporation - 15.5.1997 at 12.08 pm



**COMPUTER INTEREST REGISTER
UNDER LAND TRANSFER ACT 1952**



Historical Search Copy

R. W. Muir
Registrar-General
of Land

Identifier OT386/123
Land Registration District Otago
Date Registered 20 August 1959 11:42 am

Prior References
OT335/179

Type	Lease under s83 Land Act 1948	Term	Thirty-three years commencing on the first day of July 1959 and renewed for a further 33 years
Area	2205.5368 hectares more or less		

Legal Description Run 204D

Original Proprietors

Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald as to a 1/2 share
Andrew William Weir and Stuart Gerard Weir as to a 1/2 share

Interests

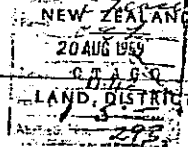
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REGISTERED IN THE LAND REGISTRY
OFFICE BUT NOT UNDER THE LAND
TRANSFER ACT.

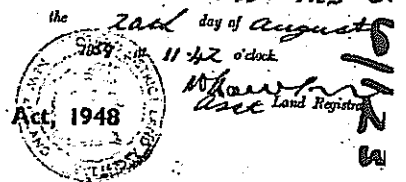
Issued as a Renewal of [or in-Exchange-for] Lease
registered in Vol. 335 fol. 179.



Pastoral Lease of Pastoral Land under the Land Act, 1948

No. P. 212

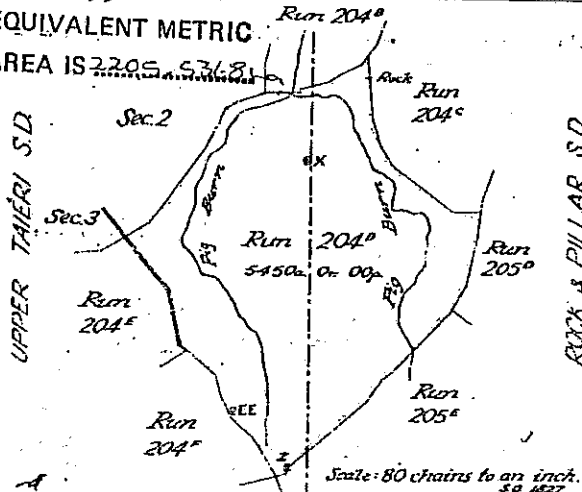
Registered in the LAND REGISTRY OFFICE
but not under the LAND TRANSFER ACT.
[L. and R. B.]
Entered in the Register-book, Vol. 386 fol. 123



This Deed, made the first day of March, one thousand nine hundred and fifty-nine, between HIS MAJESTY THE KING (who, with his heirs and successors, is hereinafter referred to as "the Lessor"), of the one part, and ARTHUR IVAN MATHIAS, of Napier, Farmer, and BENJAMIN PASTORAL COMPANY LIMITED, duly incorporated company having, in the Dominion of New Zealand, its registered office at Napier, as tenants in common in and to the land hereinafter referred to as "the Lessee", of the other part, WITNESSETH that, in consideration of the rent hereinafter reserved, and of the covenants, conditions, and agreements herein contained or implied and on the part of the Lessee to be paid, observed, and performed, the Lessor doth hereby demise and lease unto the Lessee All that piece or parcel of land containing by admeasurement

Upper Taieri SD & Rock & Pillar SD

EQUIVALENT METRIC
AREA IS 2,205.53681



one thousand nine hundred and fifty-nine, together with all rights, easements, and appurtenances thereto belonging, TO HOLD the said premises intended to be hereby demised unto the Lessee for the term of thirty-three years, commencing on the first day of July, one thousand nine hundred and fifty-nine, together with the period between the date of this lease and the aforesaid first day of July, one thousand nine hundred and fifty-nine.

Yielding and paying therefor during the said term unto the Department of Lands and Survey at the Principal Land Office for the said Land District of Otago the clear annual rent of One hundred and twenty pounds (£120.-) payable without demand by equal half-yearly payments in advance on the 1st day of January and the 1st day of July in each and every year during the said term. And also paying in respect of the improvements specified in the Schedule hereto the sum of (£) (the receipt of which sum is hereby acknowledged) and thereafter by a deposit of (£) (half-yearly instalments of) pounds shillings and pence (£ : :) on the 1st day of January and the 1st day of July in each year in the same manner as rent.

AND the Lessee doth hereby covenant with the Lessor as follows, that is to say:-

1. THAT the Lessee will fully and generally pay the rent herebefore reserved at the times and in the manner herebefore named in that behalf; and also will pay and discharge all rates, taxes, assessments, and outgoings, whatsoever that now are or hereafter may be assessed, levied, or payable in respect of the said land or any part or parts thereof during the said term.
2. THAT the Lessee will within one year after the date of this lease take up his residence on the said land, and thereafter throughout the term of the lease will reside continuously on the said land.
3. THAT the Lessee will hold and use the said land bona fide for his own use and benefit and will not transfer, assign, sublet, mortgage, charge, or part with possession of the said land or any part thereof without the previous approval of the Land Settlement Board: Provided that such approval will not be necessary in the case of a mortgage to the Crown or to a Department of State.
4. THAT the Lessee will at all times farm the said land diligently and in a husbandlike manner according to the rules of good husbandry and will not in any way commit waste.
5. THAT the Lessee will throughout the term of his lease to the satisfaction of the Commissioner of Crown Lands for the Land District of Otago (hereinafter referred to as "the Commissioner") cut and trim all live fences and hedges, clear and keep clear the said land of all noxious weeds, and will comply strictly with the provisions of the Noxious Weeds Act, 1948, 1950, and 1955.
6. THAT the Lessee will keep the said land free from wild animals, rabbits, and other vermin, and generally comply with the provisions of the Rabbit-Nuisance Act, 1938, 1955.
7. THAT the Lessee will clean and clear from weeds and keep open all creeks, drains, ditches, and watercourses upon the said land, including any drains or ditches which may be constructed by the Commissioner after the commencement of the term of the lease; and will not at any time without the prior consent of the Commissioner alter the channel of any such creek or watercourse or stop or divert the water flowing therein.
8. THAT the Lessee will at all times during the said term repair and maintain and keep in good substantial repair, order, and condition all improvements belonging to the Crown (including those specified in the Schedule hereto which are being purchased by the Lessee) now or hereafter erected on the said land, and will not, without the prior written consent of the Commissioner, pull down or remove them or any part of them.
9. THAT the Lessee will insure all buildings belonging to the Crown (including those specified in the Schedule hereto which are being purchased by the Lessee) now or hereafter erected on the said land to their full insurable value in the name of the Commissioner in some insurance office approved by the Commissioner and will pay all premiums falling due under every such insurance policy and deposit with the Commissioner every such policy and, not later than the fourth day of the day on which any such premium becomes payable, the receipt for that premium.
10. THAT the Lessee will not throughout the term of the lease without the prior consent of the Commissioner, which consent may be given on such terms and conditions (including the payment of royalty) as the Commissioner thinks fit, fell, cut, or remove any timber, tree, or bush growing, standing, or lying on the said land, and that he will throughout the term of the lease prevent the destruction of any such timber, tree, or bush unless the Commissioner otherwise approves: Provided that the consent of the Commissioner as aforesaid shall not be necessary where any such timber or tree is required for any agricultural, pastoral, household, roadmaking, or building purposes on the said land nor where the timber or tree has been planted by the Lessee.
11. THAT the Lessee shall not, except for the purpose of complying with any of the provisions of the Noxious Weeds Act, 1948, burn any tussock, scrub, fern, or grass on the said land, nor permit any tussock, scrub, fern, or grass on the said land to be burned, unless in either case he shall have obtained the prior consent in writing of the Commissioner, which consent may be given subject to such terms and conditions as the Commissioner may deem necessary.
12. THAT officers and employees of the Department of Internal Affairs shall at all times have a right of ingress, egress, and regress over the land comprised in this lease for the purpose of determining whether such land or any adjoining land is infested with deer, wild goats, wild pigs, opossums, or other animals which the said Department is charged with the duty of exterminating or controlling, or for the purposes of destroying any such animals: Provided that such officers and employees in the performance of the said duties shall at all times avoid undue disturbances of the Lessee's stock.
13. THAT the Lessee shall exercise due care in stocking the said land and shall not overstock.

AND it is hereby agreed and declared by and between the Lessor and the Lessee:-

- (a) THAT the Lessee shall have the exclusive right of pasturage over the said land, but shall have no right to the soil.
- (b) THAT the Lessee shall have no right, title, or claim whatsoever to any minerals (within the meaning of the Land Act, 1918) or, under the surface of the soil of the said land, and all such minerals are reserved to His Majesty together with a free right of way over the said land in favour of the Commissioner or of any person authorized by him and of all persons lawfully engaged in the working, extraction, or removal of any mineral on or under the surface of the said land or any adjacent land of the Crown, subject to the payment to the Lessee of compensation for all damage done to improvements on the said land belonging to the Lessee in the working, extraction, or removal of any such minerals: Provided that there shall be no right of way over, or right to work, extract, or remove any mineral from, any part of the said land which is for the time being under crop or used or situated within 100 yards of a pond, garden, orchard, vineyard, nursery, or plantation, or within 100 feet of any building or dwellinghouse: Provided also that the Lessee may, with the prior consent in writing of the Commissioner, which consent may be given subject to such conditions as the Commissioner thinks fit, use any such minerals for any agricultural, pastoral, household, roadmaking, or building purpose on the said land, but not otherwise.
- (c) THAT upon the expiration of the term hereby granted and thereafter at the expiration of each succeeding term to be granted to the Lessee the outgoing Lessee shall have a right to claim, in accordance with the provisions of section 63 of the Land Act, 1918, a new lease of the land hereby leased at a rent to be determined in the manner provided by Part VIII of the said Act for a term of thirty-three years computed from the expiration of the term hereby granted and subject to the same covenants and provisions as this lease, including this present provision for the renewal thereof and all provisions ancillary or in relation thereto.

U.I. 2007123

386/123

- (d) THAT the Lessee shall have no right of acquiring the fee-simple of the said land.
- (e) THAT the Lessee may, with the prior consent in writing of the Commissioner given subject to such conditions as the Commissioner may deem necessary,
- (i) Cultivate any portion of the said land for the purpose of growing winter feed for the stock depastured thereon;
 - (ii) Crop such area of the said land as is sufficient for the use of himself and family and his employees;
 - (iii) Plough and sow in grass any portion of the said land;
 - (iv) Clear any portion of the said land by felling and burning bush or scrub and sow the land so cleared in grass;
 - (v) Surface sow in grass any portion of the said land;
- Provided that the Lessee shall, on the termination of the lease, leave the whole of the area that has been ploughed or cultivated properly laid down in good permanent clover and grasses to the satisfaction of the Commissioner.
- (f) THAT the Lessee shall exercise due care in stocking the said land and shall not overstock, and for the purpose of this clause it is hereby mutually declared and agreed between the Land Settlement Board and the Lessee that the number of stock to be depastured on the said land during the winter months shall not, without the prior consent of the Commissioner, exceed ^{one sheep to one acre of one-fourth dry sheep and one ewe with a half for breeding ewe.}
- See below
- (g) THAT if the Lessee shall leave New Zealand or abandon the said land or if he cannot be found or if he shall neglect or fail or refuse to comply with the covenants and conditions herein expressed or implied to the satisfaction of the Land Settlement Board or the Commissioner, as the case may be, or make default for not less than two months in the payment of rent, water levy, or other payments due to the Lessee, then the Land Settlement Board may, subject to the provisions of section 146 of the Land Act, 1948, declare this lease to be forfeit, and that without discharging or releasing the Lessee from liability for rent due or accruing due or for any prior breach of any covenant or condition of the lease.
- (h) THAT these presents are intended to take effect as a pastoral lease under the Land Act, 1948, and the provisions of the said Act and of the regulations made thereunder applicable to such leases shall be binding in all respects upon the parties hereto in the same manner as if such provisions had been fully set out herein.

SCHEDULE

IMPROVEMENTS BELONGING TO THE CROWN AND BEING PURCHASED BY THE LESSEE

111

In witness whereof the Commissioner of Crown Lands for the Land District of Otago, and these presents have also been executed by the said Lessee.

Otago

, on behalf of the Lessee, hath hereunto set his

Signed by the said Commissioner, on behalf of the Lessee, in the presence of—

Witness: James McNeill
Occupation: Land Office Clerk
Address: London

W. Mathias
Deputy Commissioner of Crown Lands.

Signed by the above named as Lessee, in the presence of—

Witness: L. G. Fisher
Occupation: Office Manager
Address: 111-113, Victoria Street, Dunedin

A. J. Mathias
E. M. Mathias
Lessee.

The Common Seal of Beeches Pastoral Company Limited was hereunto affixed in the presence of

E. M. Mathias
Director.



THE BEECHES PASTORAL CO. LTD.
E. M. Mathias DIRECTOR

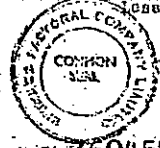
*(f) THAT the Lessee shall be deemed not to have failed to use due care in stocking, or to have overstocked so long as the number of sheep depastured on the said land does not exceed 4000 inclusive of 2640 breeding ewes (being an increase of ten per cent on the carrying capacity on which is based the rent hereinbefore reserved) but the Commissioner may by notice in writing permit the Lessee to depasture thereon any greater number should he deem it advisable or expedient so to do. Any permission so granted shall be subject to revocation or amendment by the Commissioner at any time and particularly in the event of a transfer. Any variation consented to by the Commissioner shall not affect the rent payable hereunder.

THE BEECHES PASTORAL CO. LTD.

W. Mathias
Deputy Commissioner of Crown Lands.

E. M. Mathias DIRECTOR

A. J. Mathias LESSEE.

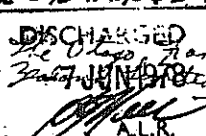


MANAGED
160680 of interest Arthur Mathias to George Mathias produced 20th Feb 1959 at 10.30 in presence of W. Mathias

279219 transfer of 1/3 share John Mathias to John Charles Alured Mathias of Napier - 16.11.1957 at 2.58pm

279218 transfer of 1/3 share of 160680 to Arthur Mathias and Alexander James Lloyd Martin of Napier - 16.11.1957 at 2.58pm

318112 Mortgage to the Otago Farmers Land Finance Association of New Zealand - 28/11/1967 at 2.58pm



360457 Transfer of 1/3 of his interest Arthur Ivan Mathias to John Charles Alured Mathias abovenamed - 15.9.1970 at 12.08pm

360456 Transfer of the 1/3 share of Arthur Ivan Mathias and Alexander James Lloyd Martin of Ranfurly Solicitor - 15.9.1970 at 12.09pm

THIS REPRODUCTION (ON A REDUCED SCALE) CERTIFIED TO BE A TRUE COPY OF THE ORIGINAL REGISTER FOR THE PURPOSES OF SECTION 215A LAND TRANSFER ACT 1952.

J. B. Mathias A.L.R.

See over

84185 Memorandum renewing the term of the
within lease for a further term of 33 years
and fixing (for the first 11 years) the
annual rent at \$975.00 calculated on a
rental value of \$65,000.00 - 4.11.1993 at
9.17am



A.L.R.

850850 Variation of Mortgage 815866/7 -
9.3.1994 at 11.00am

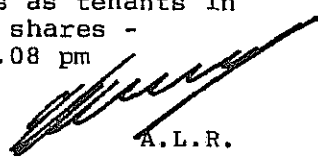


A.L.R.

893789/3 Mortgage of their 1/2 share Ian
Donald McDonald, Frazer Donald McDonald and
Owen Ian McDonald to The New Zealand Guardian
Trust Company Limited - 19.10.1995 at 9.59am

Jumavett
A.L.R.

929862/2 Transfer of their 1/2
share Ross William Manson,
Donald George Manson, Gregory
Noel Manson and Ian James Manson
to Andrew William Weir and
Stuart Gerard Weir both of
Ranfurly farmers as tenants in
common in equal shares -
15.5.1997 at 12.08 pm



A.L.R.

929862/3 Mortgage of their 1/2
share Andrew William Weir and
Stuart Gerard Weir to Westpac
Banking Corporation - 15.5.1997
at 12.08 pm



A.L.R.

380420 Transfer of the 1/2 share of Arthur Ivan Mathias to John Charles Alured Mathias of Waipiata, Farmer and Alexander James Lloyd Martin of Ranfurly, Solicitor - 15.9.1970 at 12.09 pm

A.L.R.

383636 Mortgage of a 1/4 share of John Charles Alured Mathias and 1/4 share of John Charles Alured Mathias and Alexander James Lloyd Martin to Her Majesty The Queen - 15.4.1992 at 10.42am

A.L.R.

803132 Transfer of the 1/2 share of Beeches Pastoral Company Limited to Peter Geoffrey Mathias of Waipiata, Farmer as to a 45,514/59000th share and Gwyneth Lynnette Mathias of Waipiata, Married Woman and The New Zealand Insurance Company Limited as to a 13,486/59000th share (jointly inter se) as tenants in common in the said shares - 15.4.1992 at 10.42am

A.L.R.

446620 Transfer of their 1/4 share John Charles Alured Mathias and Alexander James Lloyd Martin to Jerrald Ivan Mathias of Waipiata Farmer - 15.9.1975 at 1.50 pm

A.L.R.

497624/9 Mortgage of his 1/4 share John Charles Alured Mathias to Donald Reid Otago Farmers Limited - 11.6.1978 at 11.5 am

A.L.R.

815866/5 Transfer of the 1/4 share of Jerrald Ivan Mathias to Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald all of Paerau farmers as tenants in common in equal shares - 12.10.1992 at 9.16 am

A.L.R.

533065/4 NOTICE OF THE CHANGE OF NAME OF THE WITHIN MORTGAGE

in M. 497624/9 TO REID FARMERS LIMITED ENTERED 17.4.1980 at 12.06 p.m.

A.L.R.

703672/3 Transfer of his 1/4 share John Charles Alured Mathias to Timothy Richard Johnston of Patearoa, Farmer - 1.6.1988 at 10.42am

A.L.R.

712799/3 Mortgage of his 1/4 share Timothy Richard Johnston to Reid Farmers Limited and Pastoral Finance Co. Limited - 30.9.1988 at 9.59 am

A.L.R.

762394/1 Mortgage of his 1/4 share Timothy Richard Johnston to Reid Farmers Limited and Reid Farm Finance (Otago) Limited - 1.9.1990 at 9.54 am

A.L.R.

762394/3 Memorandum of Priority ranking Mortgage 762394/1 as first mortgage and Mortgage 712799/3 as second mortgage - 4.9.1990 at 9.54 am

A.L.R.

815866/6 Transfer of the 1/4 share of Timothy Richard Johnston to Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald all of Paerau farmers as tenants in common in equal shares - 12.10.1992 at 9.16 am

A.L.R.

815866/7 Mortgage of the 1/2 share of Ian Donald McDonald, Frazer Donald McDonald and Owen Ian McDonald to Reid Farmers Limited and Reid Farmers Finance (Otago) Limited - 12.10.1992 at 9.16 am

A.L.R.

819363/10 Transfer of their 1/2 share Peter Geoffrey Mathias, Gwyneth Lynnette Mathias and The New Zealand Insurance Company Limited to Ross William Manson, Donald George Manson, Gregory Noel Manson and Ian James Manson all of Paerau Farmers as tenants in common in equal shares - 2.12.1992 at 10.13am

A.L.R.

819363/11 Mortgage of the 1/2 share of Ross William Manson, Donald George Manson, Gregory Noel Manson and Ian James Manson to Trust Bank Otago Limited - 2.12.1992 at 10.13am

A.L.R.



"RELEASED UNDER THE OFFICIAL INFORMATION ACT"

From: LAND INFORMATION DUNEDIN

+64 3 474 5108

20/02/2002 13:25 #770 P.019/036

CDE S15 Request Manual Copy			
Document Type:	Instrument	Request Id:	40934
Reference Number:	841857	User Id:	dabercrombiedu
Land District:	Otago	Request Date:	19/02/2002 09:13:52
Method of Delivery:	Fax	Client Reference:	dabercrombiedu
Requested By:		Status:	Pending
<input type="checkbox"/> Certified Copy			
Comments:	Beeches		
Delivery Details			
Firm:	Abercrombie & Assoc Ltd		
Primary Contact:	Mr David Abercrombie		
Street:	P O Box 5055		
Town:	Dunedin		
Country:	New Zealand		
Postcode:	9001		
Fax Number:	03 471 9455		
Fees:	<input type="button" value="OK"/> <input type="button" value="Cancel"/>		

MEMORANDUM OF RENEWAL AND VARIATION
OF PASTORAL LEASE

IN THE MATTER of the Land Transfer Act 1952
and the Land Act 1948

AND

IN THE MATTER of Pastoral Lease No P212
registered in Volume 386
Folio 123 Otago District Land Registry
from HER MAJESTY THE QUEEN to
IAN DONALD MCDONALD,
FRASER DONALD MCDONALD
AND OWEN IAN MCDONALD ALL
OF PAERAU FARMERS (1/2
SHARE) AND ROSS WILLIAM
MANSON, DONALD GEORGE
MANSON, GREGORY NOEL
MANSON AND IAN JAMES
MANSON ALL OF PAERAU
FARMERS (1/2 SHARE).

- (1) Pursuant to Section 170 of the Land Act 1948 the term of the abovementioned lease registered in Volume 386 Folio 123 Otago Land Registry is renewed for a term of 33 years commencing on the 1st day of July 1992. The covenant to pay rent and the rental value contained in the lease is hereby varied by deleting the said covenant and substituting the following:

Yielding and paying therefore for the first 11 years of the said term unto the Landcorp Property Limited at Alexandra the annual rent of \$975.00 plus GST calculated on a rental value of \$65,000.00 payable without demand by equal half yearly payments in advance on the first day of January and the first day of July in each and every year during the said period of 11 years and for the next two successive periods of 11 years of the said term a rent determined in respect of each of those periods in the manner provided in Section 132A of the Land Act 1948.

- (2) Consequent upon this renewal Marginal Strips have been reserved pursuant to Part IVA of the Conservation Act 1987 as shown on SO Plan 1827.
- Handwritten:* 1827

Save as hereby expressly varied all the covenants conditions and restrictions contained or implied in the said Memorandum of Lease shall remain in full force.

IN WITNESS WHEREOF the parties have hereunto subscribed their names this
15th day of June 1993

SIGNED for and on behalf of HER MAJESTY)
THE QUEEN by the Commissioner of Crown)
Lands in the presence of:)
)
)
)

Witness:

Bullen

Patrol Administration Officer

Occupation: Department of Survey and Land Information

Address: Wellington

[Signature]
Commissioner of Crown Lands

SIGNED by the Lessee)
IAN DONALD MCDONALD)
in the presence of:)

[Signature]
Lessee

Witness:

Wardner

Occupation:

Solicitor

Address:

Dunedin

SIGNED by the Lessee)
FRASER DONALD MCDONALD)
in the presence of:)

[Signature]
Lessee

Witness:

Wardner

Occupation:

Solicitor

Address:

Dunedin

From: LAND INFORMATION DUNEDIN

+64 3 474 5108

20/02/2002 13:28 #770 P.022/036

SIGNED by the Lessee)
OWEN IAN MCDONALD)
in the presence of:)

O. I. McDonald
Lessee

Witness: *[Signature]*

Occupation: *Solicitor*

Address: *Dunedin*

SIGNED by the Lessee)
ROSS WILLIAM MANSON)
in the presence of:)

R. W. Manson
Lessee

Witness: *[Signature]*

Occupation: *Solicitor*

Address: *Dunedin*

SIGNED by the Lessee)
DONALD GEORGE MANSON)
in the presence of:)

D. G. Manson
Lessee

Witness: *[Signature]*

Occupation: *Solicitor*

Address: *Dunedin*

From: LAND INFORMATION DUNEDIN

+64 3 474 5108

20/02/2002 13:28 #770 P.023/036

SIGNED by the Lessee)
GREGORY NOEL MANSON)
in the presence of:)



Lessee

Witness:  _____

Occupation:  _____

Address:  _____

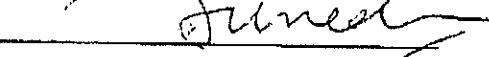
SIGNED by the Lessee)
IAN JAMES MANSON)
in the presence of:)



Lessee

Witness:  _____

Occupation:  _____

Address:  _____

From: LAND INFORMATION DUNEDIN

+64 3 474 5108

20/02/2002 13:29 #770 P.024/086

**MEMORANDUM OF RENEWAL OF
PASTORAL LEASE**

Particulars entered in the
Register as shown herein on the date
and at the time stamped below.

HER MAJESTY THE QUEEN Lessor

District/Assistant Land Registrar
of Otago

IAN DONALD MCDONALD Lessee
FRASER DONALD MCDONALD
OWEN IAN MCDONALD
ROSS WILLIAM MANSON
DONALD GEORGE MANSON
GREGORY NOEL MANSON
IAN JAMES MANSON

MWP_0015419

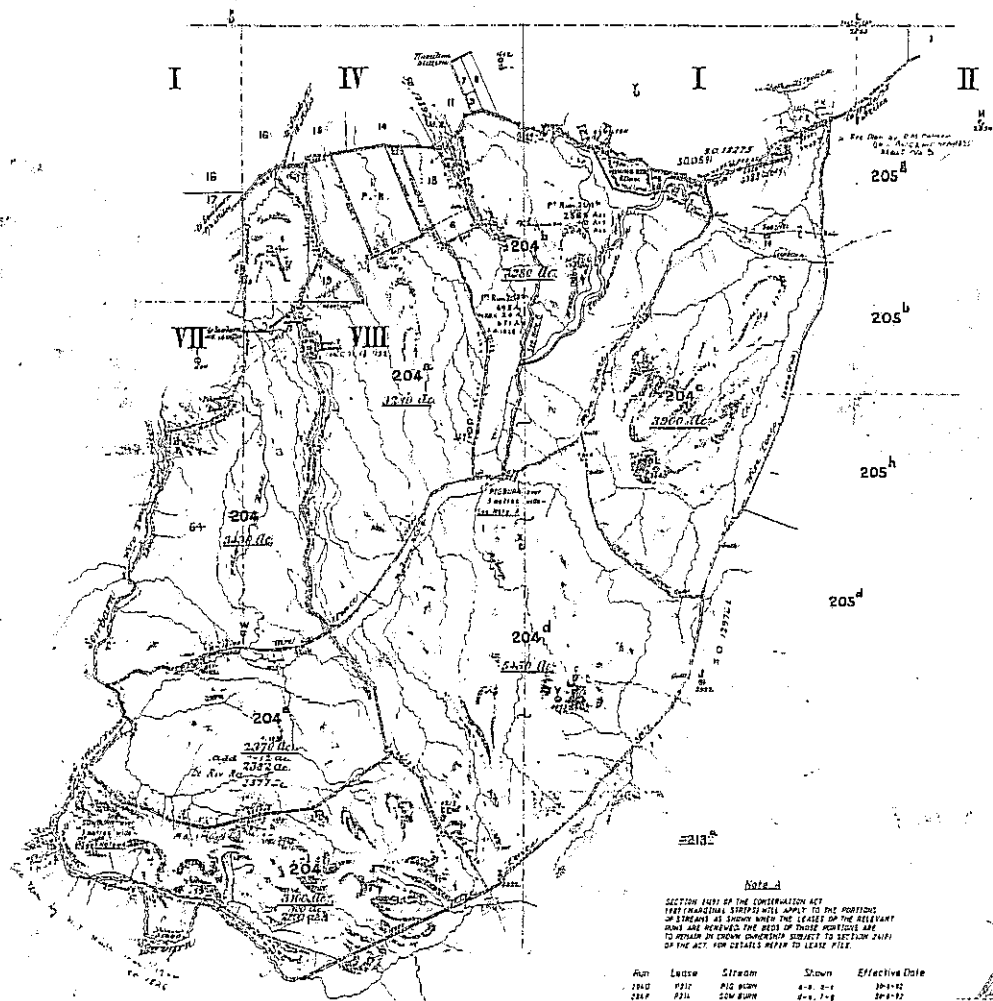


983 (103)

FILE COPY

LANDCORP PROPERTY LIMITED
DUNEDIN

"RELEASED UNDER THE OFFICIAL INFORMATION ACT"



248 J

Run	Lease	Stream	Shown	Effective Date
1940	1217	PIC RUN	4-8, 2-1	10-1-92
1941	1214	COM RUN	4-8, 1-6	10-1-92
1942	1215	PIC RUN	5-8	1-7-92

Chief Surveyor Date

Page 3
 RIVERBANK RESERVES SHOWN HERE ON
 ARE NOW-MARGINAL STRIPS PURSUANT
 TO SECTION 24(b) OF THE CONSERVATION
 ACT 1967. EFFECTIVE DATE 10-4-80.

Approved as to addition of P1753 Act B

Chief Surveyor Date

Plan of
Runs 204, 204^a, 204^b, 204^c, 204^d, 204^e, 204^f.
UPPER TAIRI & ROCK & PILLAR DIST^s.

D. M. CALDER ASST. SURVEYOR

JAN^y. 1895.

Scale of Chains

1827

NOTE:- Subdivision of Runs 204 & 204^R
LEGALISATION CAMP

1961

None in 2 - ~~200-250000~~ 1000000 1000000

F.B. N° 16 Page

15

"RELEASED UNDER THE OFFICIAL INFORMATION ACT"

Reply to:

ALEXANDRA

Cc. for purposes of CPL
ten: review due diligence from
file: 212 Vol 1/174

Our Reference: P 212

2 August 1990

Mr D M MacDonald
"Gorge Farm"
1 R D
RANFURLY

Dear David

PIGBURN WATER RACE

I refer to our inspection in May and subsequent telephone discussions.

It was somewhat disappointing to find that the proposal was not readily achievable on the ground. I believe that your engineer has put you in a difficult position and should be answerable for his actions. I was also concerned at the urgency which was given to our inspection when the work could not be undertaken for some months.

Having inspected the site there is some concern about the impact of the proposal on the landscape values of the area. I therefore favour a proposal which will minimise the length of race and degree of cutting required. Should the race proposal proceed I would favour piping through the side gully to long contour races. I have noticed your interest in damming the creek but cannot indicate our stance in relation to this until I see some detailed plans. I imagine that such a proposal would require a further application to the Regional Council regards the water right.

Please contact this office when you have a definite proposal that you wish to pursue. I would also expect you to provide us with evidence of the water right and permission from Mathias' and Clarkes for the work to proceed in their properties. Given the significant changes which appear necessary Landcorp and probably DOC will need to have a further inspection when the proposal is adequately pegged on the ground. I cannot at this point indicate our final response.

Please contact me if you have any further questions. I enclose your copy of the engineers report.

Yours faithfully

cc. Mr Tom Aitken
Paerau
2 R D
RANFURLY

K R Taylor
Managing Consultant

INCORPORATING LANDCORP INVESTMENTS LIMITED & LANDCORP MANAGEMENT SERVICES LIMITED

REGIONAL OFFICE

Christchurch
Southside Tower
76 Cashel Street
Private Bag
CHRISTCHURCH
Telephone (03) 779-787
Fax (03) 798-440

DISTRICT OFFICES

Westport
Government Buildings
Palmerston Street
P.O. Box 65
WESTPORT
Telephone (0289) 7868

Hokitika
Landcorp House
49 Tancred Street
P.O. Box 176
HOKITIKA
Telephone (0288) 58-960
Fax (0288) 58-760

Timaru
Public Trust Building
1st Floor
Cnr Church & Sophia Sts
P.O. Box 564
TIMARU
Telephone (056) 48-340

Alexandra
4 Limerick Street
P.O. Box 27
ALEXANDRA
Telephone (03) 448-6935
Fax (03) 448-9099

Dunedin
258 Stewart Street
P.O. Box 5744 Moray Place
DUNEDIN
Telephone (024) 740-571
Fax (024) 775-162

Invercargill
Land Corporation Building
192 Spey Street
P.O. Box 825
Invercargill
Telephone (021) 44-489
Fax (021) 88-628

2.

The Field Centre Manager
Department of Conservation
P O Box 176
ALEXANDRA

Dear Mary

Copy for your information. This is going around in circles, so when we get a firm proposal I recommend that we start again. At this stage I will try to hand it over to Geoff.

Yours faithfully



K R Taylor
Managing Consultant

cc. Manager PNA/Pastoral
Department of Conservation
P O Box 5244
DUNEDIN



PIG BURN IRRIGATION SCHEME

Initial Notes

21. August, 1989

Introduction

The Pig Burn irrigation proposals are basically an attempt to more equably share the limited water resource available. This has basically become available as a result of the construction of the Maniototo Irrigation Scheme extension along the eastern side of the valley.

What is proposed is a means of supplying the limited water available to that land above the proposed east side race.

Water Supply

It is possible to synthetically produce yields for the Sow Burn but these are probably of little value. Instead I have based the work on being able to extract 4 cusecs for most of the season with a further 4 cusecs spring and autumn.

These may be regarded more in the way of a reasonable estimate.

The allocations will be dictated by water rights, agreements reached as well as contributions. The allocations could be made as an so many days during a 14 day period, this would give twice as much water during the spring autumn period. The number of days that each farmer got would be negotiated based on a mix of factors.

Proposals

1 A pipe line from within the gorge carrying water up on to flats below Dave MacDonalds house to the south and splitting to enable supply over a saddle below beside the pines to the north.

Total Catchment area above = 3256 hectares

Pipe from gorge = 800 metres

Intake = approximately 1 metre above bed

Races = approximately 2500 metres long

Costs

4 cusec = \$ 75 800

8 cusec = \$ 98 950 "

This proposal has some problems in securing the pipe from the weir through the gorge entry. In the event of a major flood it would be likely that the pipe could be damaged, the steepness of the gorge and the size of the bed debris indicate substantial force above the mouth of the gorge.

2 This proposal uses the existing intake for the Herlihy water right it is up-graded with the use of a low level weir across the creek. The pipes are also up-graded to take bigger flows as necessary and the supply to the north also made.

Costs

4 cusec = \$ 30 800

8 cusec = \$ 40 450

3 This proposal involves pumping from the river on to the southern terrace.

Costs

4 cusec = \$ 45 420

Running Costs

4455 dollars/year

4 This proposal is an estimate based on pumping from the east side race extension.

Costs

4 cusec = \$ 140 000

Running Costs

7662 dollars/year

5 This is the proposal for the race construction for the high race to tip into the gully in Clarkes.

Costs

4 cusec = \$ 9 900

The spread sheets attached give the basic data used to make the calculations and estimates above.

Conclusions

It is for the farmers involved to decide on the option. This involves decisions upon water rights and their effects.

Costs wise and for ease of construction proposal 2 and 5 combined would be the most logical. That is the high level race to supply MacDonalds , part of Clarkes and part of Aitkens, with the race from the Herlihy up-graded to supply the rest.

PERJURN IRRIGATION PROPOSALS - CALCULATIONS

ORIFICE CONTROL

Head over Pipe										
dia	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.2	
0.065	0.00427	0.005232	0.006042	0.0067	0.007400	0.0079	0.008	0.009	0.010	
0.08	0.00647	0.007926	0.009152	0.0102	0.011210	0.0121	0.012	0.014	0.015	
0.1	0.01011	0.012385	0.014301	0.0159	0.017515	0.0189	0.020	0.022	0.024	
0.125	0.01580	0.019352	0.022346	0.0249	0.027368	0.0295	0.031	0.035	0.038	
0.155	0.02429	0.029756	0.034359	0.0384	0.042081	0.0454	0.048	0.054	0.059	
0.19	0.03650	0.044711	0.051628	0.0577	0.063231	0.0682	0.073	0.081	0.089	
0.225	0.05119	0.062701	0.072401	0.0809	0.088673	0.0957	0.102	0.114	0.125	
0.3	0.09101	0.111469	0.128713	0.1439	0.157641	0.1702	0.182	0.203	0.222	
0.375	0.14221	0.174171	0.201115	0.2248	0.246315	0.2660	0.284	0.317	0.348	
0.4	0.16180	0.198167	0.228824	0.2558	0.280251	0.3027	0.323	0.361	0.396	
0.45	0.20478	0.250806	0.289606	0.3237	0.354693	0.3831	0.409	0.457	0.501	
0.6	0.36405	0.445877	0.514855	0.5756	0.630566	0.6810	0.728	0.814	0.891	
0.625	0.39502	0.483808	0.558653	0.6245	0.684208	0.7390	0.790	0.883	0.967	

PIPE FLOW CONTROL

diameter	1.5-m/se	2-m/sec	3 = m/se
0.065	4.97746 litre/sec	6.6366 litre/sec	9.954 litres/sec
0.08	7.53982 litre/sec	10.053 litre/sec	15.07 litres/sec
0.1	11.7809 litre/sec	15.707 litre/sec	23.56 litres/sec
0.125	18.4077 litre/sec	24.543 litre/sec	36.81 litres/sec
0.155	28.3037 litre/sec	37.738 litre/sec	56.60 litres/sec
0.19	42.5293 litre/sec	56.705 litre/sec	85.05 litres/sec
0.225	59.6411 litre/sec	79.521 litre/sec	119.2 litres/sec
0.3	106.028 litre/sec	141.37 litre/sec	212.0 litres/sec
0.375	165.669 litre/sec	220.89 litre/sec	331.3 litres/sec
0.4	188.495 litre/sec	251.32 litre/sec	376.9 litres/sec
0.45	238.564 litre/sec	318.08 litre/sec	477.1 litres/sec
0.6	424.115 litre/sec	565.48 litre/sec	848.2 litres/sec
0.625	460.194 litre/sec	613.59 litre/sec	920.3 litres/sec

	dia	flow	dist	loss
Friction	0.200	0.03	140.00	0.00 800.00 3.52 3.568
E&E,Bends			1.00	0.05
Friction	0.250	0.03	140.00	0.00 800.00 1.19 1.207
E&E,Bends			1.00	0.02
Friction	0.250	0.06	140.00	0.01 800.00 4.28 4.358
E&E,Bends			1.00	0.08
Friction	0.315	0.06	140.00	0.00 800.00 1.39 1.419
E&E,Bends			1.00	0.03
Friction	0.315	0.09	140.00	0.00 800.00 2.94 3.010
E&E,Bends			1.00	0.07
Friction	0.375	0.09	130.00	0.00 800.00 1.44 1.511
E&E,Bends			2.00	0.07
Friction	0.375	0.12	130.00	0.00 800.00 2.46 2.578
E&E,Bends			2.00	0.12

PIGIRRN IRRIGATION PROPOSALS - CALCULATIONS

Friction	0.375	0.15	130.00	0.00	800.00	3.71	3.902
E&E,Bends			2.00			0.19	
Friction	0.375	0.18	130.00	0.01	800.00	5.20	5.475
E&E,Bends			2.00			0.27	
Friction	0.450	0.18	140.00	0.00	800.00	1.87	1.997
E&E,Bends			2.00			0.13	
Friction	0.450	0.24	140.00	0.00	800.00	3.18	3.411
E&E,Bends			2.00			0.23	
Friction	0.500	0.24	140.00	0.00	800.00	1.90	2.055
E&E,Bends			2.00			0.15	
Friction	0.550	0.24	140.00	0.00	800.00	1.20	1.300
E&E,Bends			2.00			0.10	
Friction	0.600	0.24	140.00	0.00	800.00	0.78	0.856
E&E,Bends			2.00			0.07	
Friction	0.650	0.24	140.00	0.00	800.00	0.53	0.583
E&E,Bends			2.00			0.05	

Broad Crested Weirs

flow across cumecs											
length down	0.4	0.6	0.8	1	2	4	6	8	10	20	30
10	0.08053	0.105536	0.127848	0.1483	0.235500	0.3738	0.489	0.593	0.688	1.093	1.432
20	0.05073	0.066483	0.080539	0.0934	0.148355	0.2355	0.308	0.373	0.433	0.688	0.902
40	0.03196	0.041882	0.050736	0.0588	0.093457	0.1483	0.194	0.235	0.273	0.433	0.568
60	0.02439	0.031961	0.038719	0.0449	0.071321	0.1132	0.148	0.179	0.208	0.331	0.433
80	0.02013	0.026384	0.031961	0.0370	0.058874	0.0934	0.122	0.148	0.172	0.273	0.358
100	0.01735	0.022737	0.027543	0.0319	0.050736	0.0805	0.105	0.127	0.148	0.235	0.308
120	0.01536	0.020134	0.024391	0.0283	0.044929	0.0713	0.093	0.113	0.131	0.208	0.273
140	0.01386	0.018168	0.022009	0.0255	0.040541	0.0643	0.084	0.102	0.118	0.189	0.246
160	0.01268	0.016620	0.020134	0.0233	0.037088	0.0588	0.077	0.093	0.108	0.172	0.225
180	0.01172	0.015365	0.018614	0.0215	0.034287	0.0544	0.071	0.086	0.100	0.159	0.208

Sharp Crested Weirs

flow across cumecs											
length down	0.03	0.06	0.09	0.12	0.24	0.34	0.5	1	2	2.5	3
0.5	0.10243	0.162610	0.213080	0.2581	0.409755	0.5168	0.668	1.061	1.684	1.954	2.206
0.75	0.07817	0.124095	0.162610	0.1969	0.312701	0.3944	0.510	0.809	1.285	1.491	1.684
1	0.06453	0.102438	0.134232	0.1626	0.258129	0.3255	0.421	0.668	1.061	1.231	1.390
1.5	0.04924	0.078174	0.102438	0.1240	0.196989	0.2484	0.321	0.510	0.809	0.939	1.061
1.7	0.04530	0.071916	0.094237	0.1141	0.181219	0.2285	0.295	0.469	0.744	0.864	0.976
2	0.04065	0.064531	0.084560	0.1024	0.162610	0.2051	0.265	0.421	0.668	0.775	0.875
2.5	0.03503	0.055611	0.072872	0.0882	0.140133	0.1767	0.228	0.362	0.576	0.668	0.754
3	0.03102	0.049246	0.064531	0.0781	0.124095	0.1565	0.202	0.321	0.510	0.591	0.668
4	0.02560	0.040652	0.053269	0.0645	0.102438	0.1292	0.167	0.265	0.421	0.488	0.551
5	0.02206	0.035033	0.045906	0.0556	0.088278	0.1113	0.143	0.228	0.362	0.421	0.475

Flow Through Pipe uPVC using Lamonts Formula

DIA in mm	Length	Height	Flow l/sec	aprox Flow in Head
208	800	2	25.84391	0.86
208	800	2.5	29.31324	0.98
240	800	2	37.99737	1.27
240	800	2.5	43.09822	1.44
315	800	2	79.04131	2.63

PIGBURN IRRIGATION PROPOSALS - CALCULATIONS

315	800	2.5	89.65197	2.99
410	800	3	202.1117	6.74
410	800	2.5	182.3449	6.08

IRRIGATION DESIGN - PUMP LIFT

CLIENT:- PIGBURN
Job No

Irrigation Type: Contour

Nozzle size

Number of Outlets 1

Flow Rate in L/min 7200 l/min or 4 head

Pressure in Kpa

Maximum Dist Main 150

Maximum Dist Sub Mn 0

Dia Main mm 250

Dia Sub Main 1

Sprinklers per Sub 0

Friction	0.250	0.12	130.00	0.02	150.00	3.32	4.843
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E&E Bends	K=	5.00	1.52
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Total Mains Loss in Kpa= 48.43075

Friction	0.001	0	140.00	0.00	0.00	0.00	0
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E&E Bends	K=	2.50	0.00
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Total Mains Loss in Kpa= 0

Total Pressure Required from Pump in Kpa= 48.43075

PICBURN IRRIGATION PROPOSALS - CALCULATIONS

COSTINGS

Proposal 1

Intake

Type	Length	Height	Rate	Cost
Conc	30	2	250	22500

Pipe Section

Dia Type	Length	Flow	Rate	Inst Rate	Cost
250 uPVC	800	0.06	38	20	46400
315 ARMC0	800	0.09	39	25	51200
375 conc	800	0.12	25	30	44000
450 ARMC0	800	0.24	52	30	65600

Race Section

Flow	Length	Rate	Diff	Cost
0.12	1000	3	1	3000
0.12	500	3	1.2	1800
0.12	1000	3	1.5	4500
0.24	1000	3.5	1	3500
0.24	500	3.5	1.2	2100
0.24	1000	3.5	1.5	5250

Total Costs

Flow	Costs
0.12	75800
0.24	98950

PIGBURN IRRIGATION PROPOSALS - CALCULATIONS

COSTINGS

Proposal 2

Intake

Type	Length	Height	Rate	Cost
Conc	100	1	50	5000

Pipe Section

Dia Type	Length	Flow	Rate	Inst Rate	Cost
250 uPVC	300	0.08	38	20	17400
315 ARHCO	300	0.09	39	25	19200
375 conc	300	0.12	25	30	16500
450 ARHCO	300	0.24	52	30	24600

Race Section

Flow	Length	Rate	Diff	Cost
0.12	1000	3	1	3000
0.12	500	3	1.2	1800
0.12	1000	3	1.5	4500

or

0.24	1000	3.5	1	3500
0.24	500	3.5	1.2	2100
0.24	1000	3.5	1.5	5250

Total Costs

Flow	Costs
0.12	30800
0.24	40450

PIGBURN IRRIGATION PROPOSALS - CALCULATIONS

COSTINGS

Proposal 3

Pump

Type	Cost	Electrics	Shed	Cost
Ajax IS	12000	5000	1000	18000

Electric Supply

50 kw 4 pole 3 phase Cost= 15000

Pipe Section

Dia	Type	Length	Flow	Rate	Inst Rate	Cost
250	uPVC	150	0.06	38	20	8700

Race Section

Flow	Length	Rate	Diff	Cost
0.12	1000	3	1	3000
0.12	200	3	1.2	720
0.12	0	3	1.5	0

Total Costs

Flow	Costs
0.12	45420

Running Cost

50 Kw at 5.94 c/kwh for 1500 hours = 4455 dollars/year

PIGBURN IRRIGATION PROPOSALS - CALCULATIONS

COSTINGS

Proposal 4

Pump

Type	Cost	Electrics	Shed	Cost
Ajax IS	15000	5000	1000	21000

Electric Supply

86 kw 4 pole 3 phase Cost= 0

Pipe Section

Dia Type	Length	Flow	Rate	Inst Rate	Cost
250 uPVC	2000	0.06	38	20	116000

Race Section

Flow	Length	Rate	Diff	Cost
0.12	1000	3	1	3000
0.12	0	3	1.2	0
0.12	0	3	1.5	0

Total Costs

Flow	Costs
0.12	140000

Running Cost

86 Kw at 5.94 c/kwh for 1500 hours = 7662. dollars/year

PIGBURN IRRIGATION PROPOSALS - CALCULATIONS

COSTINGS

Proposal 5

Intake				
Type	Length	Height	Rate	Cost
Conc	20	1	50	1000

Pipe Section

Dia Type	Length	Flow	Rate	Inst Rate	Cost
250 uPVC	20	0.06	38	20	1160
315 ARMC0	20	0.09	39	25	1280
375 conc	20	0.12	25	30	1100
450 ARMC0	20	0.24	52	30	1640

Race Section

Flow	Length	Rate	Diff	Cost
0.12	500	3	1	1500
0.12	500	3	1.2	1800
0.12	1000	3	1.5	4500
0.24	500	3.5	1	1750
0.24	500	3.5	1.2	2100
0.24	1000	3.5	1.5	5250

Total Costs

Flow	Costs
0.12	9900
0.24	11740