

ON APPEAL  
FROM THE SUPREME COURT OF  
NEW SOUTH WALES  
EQUITY DIVISION

IN PROCEEDINGS 292 OF 1973

---

QUEENSLAND MINES LIMITED

Appellant (Plaintiff)

ERNEST ROY HUDSON,

SAVAGE IRON INVESTMENTS PTY. LIMITED

and

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

Respondents (Defendants)

TRANSCRIPT RECORD OF PROCEEDINGS

---

PART II

Volume IV

SOLICITORS FOR THE APPELLANT

Allen Allen & Hemsley,  
2 Castlereagh Street,  
Sydney. N.S.W.

By their Agents:

Slaughter & May,  
35 Basinghall Street,  
London. EC2V 5DB U.K.

SOLICITORS FOR THE RESPONDENTS

Freehill, Hollingdale & Page,  
60 Martin Place,  
Sydney. N.S.W.

By their Agents:

Linklaters & Paines,  
Barrington House,  
59-67 Gresham Street,  
London. EC2V 7JA U.K.

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INDEX OF REFERENCE

PART II

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VOLUME IV

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DEFENDANTS' EXHIBITS:

1	Minutes of meeting of Directors of the Plaintiff held between 24 January, 1959 and 22 May, 1964 not tendered by the Plaintiff		853
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MINUTES OF A MEETING OF DIRECTORS OF FACTORS LIMITED  
HELD AT "STANHILL", 34 QUEEN'S ROAD, MELBOURNE  
ON 12TH JANUARY, 1959.

DIRECTORS PRESENT :

Mr. S. Korman (in the Chair)  
Messrs. I.K. Redpath, D. Korman, E.J.K. Thompson  
and C.R. Daley.

QUEENSLAND MINES LIMITED.

It was resolved that this Company should enter 10  
into an agreement with Australasian Oil Exploration  
Limited to form a Company to be known as Queensland  
Mines Limited and acquire leases from a syndicate  
known as Andersons Syndicate.

It was further resolved as follows :-

1. That the Company be registered in Canberra with  
a Nominal Capital of £3,000,000. divided into  
12,000,000 Ordinary Shares of 5/- each.
2. That Australasian Oil Exploration Limited be  
issued with 980,000 fully paid Ordinary Shares 20  
of 5/- each as consideration for the transfer  
of the leases to the Company.
3. That Factors Limited apply for 1,020,000 Or-  
dinary Shares of 5/- each payable one penny  
per share on application and calls from time  
to time as required.
4. That the New Company is to commence drilling  
within three months.
5. That representations be made to the Atomic  
Energy Commission for contracts to the value 30  
of not less than £6,000,000.
6. That when the Company has made arrangements  
for the sale of the uranium oxide, Factors  
Limited will make funds available up to a  
total of £1,000,000. by --  
(a) Paying up the balance of the Share Capital  
as required.

Exhibit 108 - Minutes  
of Meeting of Factors  
Limited - 12.1.59

(b) By Loans at an interest rate not to exceed  
10% per annum.

It was resolved to enter into a second agree-  
ment with Australasian Oil Exploration Limited  
whereby the first agreement would not be binding un-  
less certain conditions in that agreement have been  
carried out.

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READ AND CONFIRMED

S. Korman  
CHAIRMAN.

25/2/59

ARTICLES OF ASSOCIATION

of

**Queensland Mines Limited**

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PRELIMINARY

1. The Regulations contained in Table "A" in the Second Schedule of the Companies Act 1936 shall not apply to the Company except so far as the same are repeated or contained in these presents.
2. The basis on which the Company is established is that the Company may acquire any assets on such terms and conditions as the Directors may think fit. Where the Vendors are personally interested in the terms upon which any property is to be purchased, it shall be no objection to any such purchase that the Vendors are Directors of the Company and stand in a fiduciary position towards the Company or that the Directors do not in the circumstances constitute an independent Board and every member of the Company present and future is to be deemed to join the Company on this basis.
3. In these presents the following terms shall have the meanings next hereinafter respectively assigned to them if not inconsistent with the subject matter or context:

"The Company" means "Queensland Mines Limited".

"These presents" means and includes these Articles of Association.

9.

Exhibit "AZ" - Articles  
of Association of  
769. Queensland Mines Limited

"Dividend" means any sum arising from the division of the profits of the Company.

"Directors" means the Directors for the time being of the Company.

"The office" means the registered office for the time being of the Company.

"The Register" means the register of members to be kept pursuant to the Companies Act.

"Month" means calendar month.

"Special Resolution" and "Extraordinary Resolution" have the meanings assigned to them respectively by the Companies Act 1936.

"The Statute" means and includes "The Companies Act 1936" and every other Act from time to time in force concerning joint stock companies and affecting the Company.

Words importing the singular number only shall include the plural number and vice versa.

Words importing the masculine gender only shall include the feminine gender.

Words importing persons shall include corporations.

#### GENERAL PROVISIONS

4. None of the funds of the Company or any subsidiary thereof shall be employed in the purchase of or lent on the security of shares of the Company.
5. The business of the Company shall comprise all the businesses mentioned or included in the Memorandum of Association and all incidental matters and may be commenced as soon as the Directors shall think fit notwithstanding that part only of the shares may have been applied for allotted or issued.
6. Any branch or kind of business which the Company is authorised to carry on may subject to any direction of the Company in

10.



General Meeting be undertaken and may be suffered to be in abeyance whether such branch or kind of business may have been actually commenced or not so long as the Directors may deem it expedient.

7. The business shall subject to the provisions of these presents be carried on by or under the management of the Directors and according to such regulations as the Directors from time to time prescribe.
8. The Directors shall meet and the office business of the Company shall be carried on at the registered office of the Company or at such other place or places as the Directors shall from time to time deem advisable.
9. The registered office shall be at Canberra in the Australian Capital Territory or at such other place as the Directors shall from time to time appoint. The Directors may also establish an office or branch of the Company in any part of the world.

#### CAPITAL

10. The original capital is Three million pounds (£3,000,000) divided into Twelve million (12,000,000) shares of five shillings (5/-) each.

#### SHARES

11. The shares shall be under the control of the Directors who may subject to the provisions of the Articles allot or otherwise dispose of the same to such persons on such terms and conditions and at such times as the Directors think fit.
12. Any of the original shares for the time being unissued, and any new shares from time to time to be created may (subject to the special rights privileges or advantages for the time being attached to any existing class of shares) from time to time be issued with any such guarantee or any such right of preference, whether in respect of dividend or of repayment of capital or both or any such other special privilege or advantage over any shares previously issued or then about to be issued or at such a premium or with such deferred rights as compared with any shares

11.

previously issued or then about to be issued or subject to any such conditions or provisions and with any such rights and generally on such terms as the Company by extraordinary resolution of the general meeting creating such issue or by extraordinary resolution of any other general meeting previous to the issue of the said shares, or as the Board if so authorised by an extraordinary resolution passed at a general meeting shall direct.

13. Save as herein and otherwise provided the Company shall be entitled to treat the registered holder of any share as the absolute owner thereof and accordingly shall not except as ordered by a Court of competent jurisdiction or as by Statute required be bound to recognise any equitable or other claim to or interest in such share on the part of any other person.
14. The fact of any person becoming a shareholder either by applying for and having any share or shares allotted to him or by accepting a transfer of any shares shall be conclusive evidence that he agrees to all and every the Memorandum and Articles of Association of the Company and any regulations and by-laws which may be made thereunder.

#### UNDERWRITING COMMISSION AND BROKERAGE

15. Upon an offer of shares to the public for subscription it shall be lawful for the Company to pay to any person an underwriting commission or brokerage (either in cash or by the allotment of shares or in any other manner) not exceeding ten pounds per centum on the nominal value of the shares underwritten.

#### SHARE CERTIFICATES

16. The Certificate of Shares shall be under the Seal of the Company which shall be affixed in the presence of two Directors and the Secretary or other authorised officer and shall bear evidence that the issue of the certificate has been audited by the Company's Auditor.
17. Each Shareholder shall be entitled to one certificate covering his holding or to several certificates in reasonable denominations, provided that where the company, with the consent of the Shareholder issues one certificate for a greater number than 100 shares,

12.

such certificate shall on request be subdivided without delay in accordance with Stock Exchange requirements.

18. The certificate of shares registered in the names of joint holders shall be delivered to the holder whose name stands first in the register.
19. If any share certificate be worn out or lost it may in the discretion of the Directors be renewed on payment of such fee (if any) not exceeding one shilling and on such terms (if any) as to evidence and indemnity as the Directors may think fit.

#### CALLS ON SHARES

20. The Directors may from time to time make such calls as they may think fit upon the members in respect of all moneys unpaid on the shares held by them respectively. A call shall be deemed to have been made at the time when the resolution authorising it was passed by the Directors and may be made payable by instalments.
21. Each member shall be liable to pay the amount of every call so made on him to the person or persons and at the time and place appointed by the Directors within fourteen days after notice shall have been given of such call and of the time and place so appointed for the payment thereof and of the person or persons to whom the same is to be paid.
22. The joint registered holders of a share shall be severally as well as jointly liable for payment of all instalments and calls due in respect of such share and such several liability shall notwithstanding anything herein contained remain and be enforceable against the estate of any deceased joint registered holder.
23. If the sum payable in respect of any call or instalment be not paid on or before the day appointed for payment thereof, the holder for the time being of the share in respect of which the call shall have been made or the instalment shall be due shall pay interest upon the same at the rate of eight pounds per centum per annum from the day appointed for payment thereof to the time of the actual payment or at such lesser rate as the Directors may determine.

13.

24. On the trial or hearing of any action or suit by the Company against any member for the recovery of any money payable on any allotment of shares or due under any call it shall be sufficient to prove that the name of the member sued is entered in the register as the holder or one of the holders of the shares in respect of which such debt accrued that the resolution making the allotment or call is duly recorded in the minute book and that notice of such allotment or call was duly given to the member sued in pursuance of these presents and the proof of these matters aforesaid shall be conclusive evidence of the fact.
25. The Directors may if they think fit receive from any member willing to advance the same all or any part of the money unpaid upon any of the shares held by them beyond the sums actually paid up thereon as a payment in advance of calls. Upon the moneys so received or upon so much thereof as from time to time exceeds the amount of the calls then made upon the shares in respect of which such advance has been made the Company may pay interest at such rate as the member advancing the same and the Directors may agree upon.

#### FORFEITURE AND LIEN

26. If any member fail to pay any call or instalment on or before the day appointed for the payment of the same the Directors may at any time thereafter during such time as the call or instalment remains unpaid serve a notice on him requiring him to pay the same together with any interest that may have accrued and all expenses that may have been incurred by the Company by reason of such non-payment.
27. The notice shall name a day (not being less than fourteen days from the date of the notice) on or before which such call or instalment as aforesaid and all interest and expenses that may have accrued by reason of such non-payment are to be paid. It shall also name the place where payment is to be made and shall state that in the event of non-payment at or before the time and at the place appointed the shares in respect of which such call was made or instalment is payable will be liable to be forfeited.
28. If the requisitions of any such notice as aforesaid are not complied with any shares in respect of which such notice has been

given may at any time thereafter before payment of all calls or instalments interest and expenses due in respect thereof be forfeited by a resolution of the Directors to that effect. Such forfeiture shall include all dividends declared and other moneys payable in respect of the forfeited shares and not actually paid before the forfeiture.

29. For the purpose of the provisions of these presents relating to lien sale and re-allotments of shares the sum payable upon allotment of shares shall be deemed to be a call payable upon such shares on the day of allotment.
30. Any share so forfeited shall be deemed to be the property of the Company and may be re-allotted sold or otherwise disposed of in such manner as the Directors think fit. But the Directors may at any time before any share so forfeited shall have been re-allotted sold or otherwise disposed of annul the forfeiture thereof upon such conditions as they may think fit; but in the event of any shares being forfeited and sold any residue after the satisfaction of the moneys due and unpaid in respect of such shares and accrued interest and expenses shall be paid to the person forfeiting his executors administrators or assigns.
31. Any member whose shares have been forfeited shall notwithstanding such forfeiture be liable to pay and shall forthwith pay to the Company all calls or moneys interest and expenses owing in respect of such shares at the time of the forfeiture together with interest therefrom the time of the forfeiture until payment at the rate of ten pounds (£10) per centum per annum or such less rate as may be fixed by the Directors and the Directors may enforce the payment thereof if they think fit.
32. The Directors shall not have the power to accept the surrender of any shares except fully paid up shares or unless such surrender is for subdivision or consolidation purpose.
33. The Company shall have a first and paramount lien for unpaid capital and unpaid calls upon the specific shares registered in the name of each member in respect of which such capital or calls is or are unpaid respectively and upon the proceeds of sale thereof and such lien shall extend to all dividends from time to time declared in respect of such shares.

Unless otherwise agreed the registration of a transfer shall operate as a waiver of the Company's lien (if any) on such shares.

34. Whenever in respect of any shares or stock registered as held by any member either solely or jointly or otherwise in connection with the holding whether joint or sole of any member and whether in consequence of the death of such member or for any other reason any law for the time being of the Commonwealth of Australia or of any Australian State or of any other country or place shall impose or purport to impose any immediate or future or possible liability upon the Company to make any payments to any Government or taxing authority or otherwise the Company shall in respect of any such liabilities be fully indemnified by such member or his executors or administrators wheresoever constituted. Any moneys paid by the Company in respect of any liability imposed or purported to be imposed on the Company as aforesaid may be recovered by action from such member or his executors or administrators wheresoever constituted as a debt due by such member or his estate to the Company with interest at eight per centum per annum from the date when such moneys were so paid until repayment. In respect of its rights to be indemnified or to be repaid as herein declared the Company shall have a lien upon all shares or stock registered as held either jointly or solely by such member as aforesaid and upon any dividends thereon. Nothing herein contained shall prejudice or affect any right or remedy which in respect of any such payment by the Company as aforesaid any such law as aforesaid may confer or purport to confer upon the Company and it is hereby expressly declared that as between the Company and such member or his estate or his executors or administrators wheresoever constituted any such right or remedy shall be enforceable by the Company.
35. For the purpose of enforcing any lien the Directors may sell the shares subject thereto in such manner as they think fit but no sale shall be made until such period as aforesaid shall have arrived and until notice in writing of the intention to sell shall have been left at the last known address of such member his executors or administrators and default shall have been made by him or them in the payment fulfilment or discharge of such debts liabilities or engagements for seven days after such notice.
36. The net proceeds of any such sale shall be applied in or towards satisfaction of the said debts liabilities or engagements and the

residue (if any) paid to such member his exocutors administrators or assigns.

37. In the event of the re-allotment or sale of a forfeited or surrendered share or the sale of any share to enforce a lien the Company's certificate in writing under the seal of the Company that the share has been duly forfeited surrendered or sold in accordance with the regulations of the Company shall be sufficient evidence of the facts herein stated as against all persons claiming the share. A certificate of proprietorship shall be delivered to the purchaser or allottee and he shall be registered in respect thereof and thereupon he shall be deemed the holder of the share discharged from all calls or other money interest and expenses due prior to such purchase or allotment and he shall not be bound to see to the application of the purchase money or consideration nor shall his title to the share be affected by any irregularity in the forfeiture surrender or sale.

TRANSFER OF SHARES

38. Subject to the provisions hereinafter contained shares in the Company may be transferred in the common form or in the following form or as near thereto as circumstances will permit:-

QUEENSLAND MINES LIMITED

I, \_\_\_\_\_ of \_\_\_\_\_  
in consideration of the sum of \_\_\_\_\_ paid to  
me by \_\_\_\_\_ of \_\_\_\_\_  
hereby transfer to the said \_\_\_\_\_  
the \_\_\_\_\_ shares numbered \_\_\_\_\_ to  
inclusive standing in my name in the register of Queensland  
Mines Limited to hold the same unto the said \_\_\_\_\_  
absolutely subject to the conditions on which I held the same  
immediately before the execution hereof.  
And I the said \_\_\_\_\_ hereby agree to take the  
said share (or shares) subject to such conditions. And I  
declare that I the said transferee am over the age of 21 years.  
As witness our hands the \_\_\_\_\_ day of \_\_\_\_\_  
(Signatures of transferor and transferee)  
Witness to the signatures of :

17.

Exhibit "AZ" - Articles  
of Association of  
777. Queensland Mines Limited

The Directors may however in their discretion accept any form of transfer by instrument in writing signed by the transferor and transferee.

39. Every instrument of transfer shall contain the number of every share desired to be transferred and the name residence and occupation of the proposed transferee and shall be executed by the transferor and transferee.
40. The transferor shall be deemed to remain the holder of the shares purported to be transferred until the name of the transferee is entered on the register of members in respect thereof.
41. Every instrument of transfer shall be presented to the Company duly stamped and accompanied by the certificate of the shares to be transferred and such evidence (if any) as the Company may require to prove the title of the transferor. When registered the instrument of transfer shall be retained by the Company.
42. The Directors shall be entitled to refuse registration of any transfer of shares upon which the Company has a lien or where the proposed transferee is an infant and in the case of shares not fully paid may refuse to register a transfer to any person whom they do not approve as transferee without being called upon to assign any reason for such refusal.
43. The transfer books and register of members shall be kept by the Secretary under the control of the Directors and may be closed during such time as the Directors think fit provided that at least fourteen days' notice of such intended closure is given to all Stock Exchanges on which the Company is listed and also provided that they are not closed for a period exceeding in the whole thirty days in each year.
44. Where the instrument of transfer of shares is signed by a member or his attorney the Company shall be under no liability for registering as a member the transferee of such shares although the transferring member was of unsound mind at the time he executed the power of attorney under which such transfer was signed or subsequently became of unsound mind, provided the Company had no notice of such unsoundness of mind at the time of the registration of such transfer.



## TRANSMISSION OF SHARES

45. The executors or administrators of a deceased member (not being one of several joint holders) shall be the only persons recognised by the Company as having any title to the shares registered in the name of such member and in the case of the death of any one or more of the joint holders of any registered shares the survivors shall be the only persons recognised by the Company as having any title or interest in such shares without prejudice to Article 22 hereof.
46. The guardian of an infant member and the committee of any lunatic member and any person becoming entitled to a share in consequence of the death bankruptcy liquidation by arrangement or insolvency of any member may with the consent of the Directors (which they shall not be under any obligation to give in the case of shares not fully paid) upon producing such evidence of title as the Directors shall require either be registered himself as holder of the share or may subject to the provisions as to transfers hereinbefore contained transfer such share.

## CHANGE OF CAPITAL

47. The Company in General Meeting may increase the capital of the Company by the creation of new shares of such amount as it thinks expedient.
48. The Company may by special resolution from time to time subdivide or consolidate the shares of the Company into shares of a smaller or larger nominal amount than is fixed by the Memorandum of Association provided that the same proportionate liability shall continue on the shares so reduced or increased in nominal amount as existed on the original shares before such subdivision or consolidation.
49. The Company may from time to time by special resolution reduce the capital of the Company in any manner for the time being authorised by law. Provided that should a part of the issued capital at any time consist of preference shares the repayment of such preference capital shall in no case be affected unless the holders of at least three-fourths of the preference shares shall so agree.

## CONVERSION OF SHARES INTO STOCK

50. (a) The Company by resolution in general meeting may convert any paid-up shares into stock, and may convert any stock into paid-up shares of any denomination. When any shares have been converted into stock the several holders of such stock may thenceforth transfer their respective interests therein or any part of such interests in the same manner and subject to the same regulations as and subject to which fully paid-up shares in the Company's capital may be transferred or as near thereto as circumstances will admit.
- (b) The stock shall confer on the holders thereof respectively the same privileges and advantages as regards participation in profits and voting at meetings of the Company and for other purposes as would have been conferred by shares of equal amount in the capital of the Company of the same class as the shares from which such stock was converted. No such conversion shall affect or prejudice any preference or other special privileges attached to the shares so converted. Save as aforesaid all the provisions herein contained shall so far as circumstances will admit apply to stock as well as to shares.

## BORROWING POWERS

51. The Directors may from time to time at their discretion raise or borrow or secure the payment of any sum or sums of money for the purposes of the Company.
52. The Directors may raise or secure the payment or repayment of such moneys in such manner and upon such terms and conditions in all respects as they may think fit and in particular by the issue or sale of bonds debentures or debenture stock or other obligations of the Company whether perpetual or otherwise and payable to bearer or otherwise and either without security or secured by deposit or pledge of the securities or properties of the Company or by mortgages bills of exchange or promissory notes or other instruments or in any other manner and if considered advisable for any such purposes the Directors may charge assign and convey as security all or any of the Company's property and assets both present and future including its uncalled capital (if any) for the time being.

53. Bonds debentures debenture stock and other securities or obligations may be made assignable free from any equities between the Company and the person to whom the same may be issued.
54. Any bonds debentures debenture stock or other securities or obligations may be issued at a discount premium or otherwise and with any special privileges as to redemption surrender drawings allotment of shares attending and voting at General Meetings of the Company appointment of Directors making calls on members for any uncalled capital included in any such securities and otherwise.
55. The Directors shall cause a proper register to be kept in accordance with Section 194 of the Companies Act 1936 of all mortgages and charges specifically affecting the property of the Company.

#### MODIFICATION OF RIGHTS

56. In the event of a portion of the Company's issued capital consisting of Preference shares the re-payment of such preference capital or any alteration of the rights attaching thereto shall in no case be made unless agreed to by the holders of at least three-fourths of the issued shares of the class affected. Such repayment of capital or alteration of rights must be agreed to by a resolution of the holders (in person or by proxy) of at least three-fourths of the issued shares of the class at a special meeting of such holders called for the purpose. Provided however that in the event of the necessary majority not having been obtained in the manner aforesaid, consent in writing may be secured from members holding at least three-fourths of the issued shares of the class and such consent if obtained within two months from the date of the special meeting shall have the validity of a resolution carried by vote in person or proxy.

#### GENERAL MEETINGS

57. The Statutory meeting of the Company shall be held as required by the Statute at such place as the Directors may determine.
58. Other General Meetings of the Company shall be held if required in the year 1960 and once in every subsequent year at such time

and place as may be prescribed by the Company in General Meeting or if no time shall be so prescribed at such time and place as may be determined by the Directors.

59. The General Meetings referred to in the last two preceding clauses shall be called "Ordinary Meetings" and all other General Meetings of the Company shall be called "Extraordinary Meetings".
60. The Directors may when they think fit and shall on a requisition made in writing by the holders of not less than one-tenth of such of the paid up capital of the Company as at the date of the requisition carries the right of voting at general meetings of the Company convene an Extraordinary General Meeting of the Company and in the case of such requisition the following provisions shall have effect:-
- (1) The requisition must state the objects of the meeting and must be signed by the requisitionists and deposited with the Secretary at the office and may consist of several documents in like form each signed by one or more requisitionist.
  - (2) If the Directors do not proceed to cause a meeting to be held within twenty-one days from the date of the requisition being deposited the requisitionists or a majority of them in value may themselves convene the meeting but any meeting so convened shall not be held after three months from the date of such deposit.
61. Any meeting convened under the previous clause by the requisitionists shall be convened in the same manner as nearly as possible as that in which meetings are to be convened by Directors.
62. Subject to the provisions of the Companies Ordinance as to Special Resolutions at least seven clear days' notice of every General Meeting Ordinary or Extraordinary and by whomsoever convened specifying the place day and hour of meeting and in case of special business the general nature of such business shall be given to the members entitled to be present at such meeting and to such other persons as may be entitled to receive

notices from the Company. And at least 14 days' notice of such Meeting shall be given by advertisement in the daily press and in writing to each Stock Exchange upon which the Company is listed.

63. Whenever any General Meeting is adjourned or postponed for seven days or more three days' notice shall be given of the place date and time of meeting but it shall not be necessary to specify in such notice the nature of the business to be transacted at such adjourned or postponed meeting.
64. The accidental omission to give any such notice to any of the members shall not invalidate any resolution passed at a General Meeting or an adjournment thereof.
65. No special business shall be transacted at any General Meeting except such as has been specified in the notice convening it.

#### PROCEDURE AT GENERAL MEETINGS

66. No business shall be transacted at any General Meeting except the declaration of a dividend unless a quorum of members is present within fifteen minutes after the time appointed for the holding of such General Meeting.
67. Such number as a General Meeting shall from time to time appoint shall be a quorum of a General Meeting. Until such appointment the quorum of a General Meeting shall be three members personally present.
68. The Chairman of Directors shall be entitled to take the chair at every General Meeting or if there be no Chairman of Directors or if at any meeting he shall not be present within ten minutes after the time appointed for holding such meeting the members present shall choose another Director as Chairman and if no Director be present or if all the Directors present decline to take the chair then the members present shall choose one of their number to be Chairman.
69. If within fifteen minutes from the time appointed for the meeting a quorum is not present the meeting if convened upon

such requisition as aforesaid shall be dissolved and in any other case it shall be dissolved unless adjourned by the members present.

70. If at any adjourned meeting a quorum be not present within half an hour after the time for holding the meeting the business shall be proceeded with whatever may be the number of members present.
71. Except where otherwise provided by the Statute or these presents every question to be decided by any General Meeting shall be decided by a simple majority on a show of hands by the members who shall be personally present unless immediately on the declaration of the result of the show of hands a poll be demanded by the Chairman or by any one or more members entitled to vote thereat holding or representing as proxy in the aggregate at least one-tenth of the capital represented at the meeting.
72. If a poll be demanded in manner aforesaid the same shall be taken at such time and place and in such manner as the Chairman of the meeting shall direct and the result of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded but the demand of a poll shall not prevent the continuance of a meeting for the transaction of any business other than the question upon which a poll has been demanded. The demand of a poll may be withdrawn.
73. The Chairman of a General Meeting may with the consent of the meeting adjourn the same from time to time and from place to place but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting from which the adjournment took place.
74. Any poll duly demanded on the election of a Chairman of a meeting or on any question of adjournment shall be taken at the meeting without adjournment.
75. The person in the chair at a General Meeting shall in every case of an equality of votes on a poll or otherwise have an additional casting vote.

24.

784. Exhibit "AZ" - Articles  
of Association of  
Queensland Mines Limited

76. Any person becoming entitled to a share as mentioned in Article 46 may vote at any General Meeting in respect thereof in the same manner as if he were the registered holder of such share provided that forty-eight hours at least before the time of holding the meeting or adjourned meeting as the case may be at which he proposes to vote he shall satisfy the Directors that he has become so entitled to the share or the Directors shall have previously admitted his right to vote at such meeting in respect thereof.

#### VOTES OF SHAREHOLDERS

77. A member personally present at any General Meeting may decline to vote on any question thereat but shall not by so declining be considered absent from the meeting.
78. Votes may be given either personally or by proxy, or in the case of a company, by a representative duly authorised as herein provided. Every member present in person shall, on a show of hands, have one vote, and every member present in person or by proxy or attorney shall at a poll have one vote for every share whether fully paid or not. Where a corporation, being a member, is present by proxy or attorney, who is not a member such proxy or attorney shall be entitled to vote for such corporation on a show of hands. No objection shall be made to the validity of any vote except at the meeting or poll at which such vote shall be tendered and every vote whether given personally or by proxy or attorney not disallowed at such meeting or poll shall be deemed valid for all purposes of such meeting or poll whatsoever. The Chairman of any meeting shall be the sole and absolute judge of the validity of every vote tendered at such meeting or at a poll demanded at such meeting and may allow or disallow the votes tendered according as he shall be of opinion that the same are or are not valid.
79. Where there are joint registered holders of any shares any one of such persons may vote at any meeting either personally or by proxy in respect of such shares as if he were solely entitled thereto and if more than one of such joint holders be present at any meeting personally or by proxy that one of the said persons whose name stands first in the register in respect of such shares shall alone be entitled to vote in respect thereof.

25.





As witness my hand this                      day of

Signed by the said  
in the presence of

85. The attorney of a member appointed in writing under the hand and seal of the member and attested by one witness or if the appointor be a corporation under its common seal may within the limits of the authority conferred on him by such power of attorney if himself a member of the Company attend and act and vote at all General Meetings on behalf of his appointor and as his or its proxy and without any special appointment other than his power of attorney or may within the said limits whether himself a member of the Company or not appoint in writing as proxy on behalf of his appointor a member of the Company who shall be deemed the proxy of such appointor. And such attorney whether or not a member of the Company may on behalf of his appointor within the said limits sign any consent which the appointor would under these presents be required or entitled to sign. At least forty-eight hours before any attorney or proxy appointed by an attorney shall be entitled to act on behalf of the appointor the power of attorney shall be produced at the office of the Company to the Secretary who shall record the same and such power of attorney when so recorded shall be deemed to remain in force until notice of the revocation thereof shall have been received at the said office.

86. Any instrument appointing a proxy shall be deposited at the office at least forty-eight hours before the time for holding the meeting or adjourned meeting as the case may be at which the persons named in such instrument proposes to vote.

#### DIRECTORS

87. The first directors of the Company shall be determined in writing by a majority of the subscribers of the Memorandum of Association, and they shall hold office until appointments of directors are made pursuant to Article 110 or until the General Meeting of the Company in 1960 whichever first takes place.
88. Until otherwise determined by a General Meeting, the number

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of Directors shall not be less than five nor more than seven. The Company in general meeting may from time to time increase or reduce the number of Directors and may make the appointments necessary for effecting any such increase.

89. The continuing Directors may act notwithstanding any vacancy in their body but so that if the number falls below three the remaining Directors shall not, except for the purpose of filling vacancies act so long as the number is below three.
90. A Director may retire from his office upon giving notice in writing to the Company of his intention so to do. Such resignation shall take effect upon the expiration of such notice or its earlier acceptance by the Board.
91. The Directors other than a Managing Director shall be entitled to such fixed remuneration as the Company in general meeting shall determine. The remuneration of Directors shall not be increased except at a general meeting and when notice of such suggested increase shall have been given to members in the notice convening the meeting. Such remuneration shall be divided between them in such proportions and manner as the Directors may determine, and in default of such determination within the year equally. The Directors shall not as a Board be paid as part or whole of their remuneration a commission on or percentage of the profits or turnover of the Company. The Directors shall not have power to fix a salary or allowance for the Chairman in addition to Director's remuneration. Any Director, including any alternate Director shall also be entitled with the approval of the Directors to be repaid all travelling, hotel and other expenses incurred by him in and about the business of the Company including their expenses of travelling to and from general Board or Committee meetings.
92. A Director may hold any other office under the Company (except that of Auditor) in conjunction with the office of Director and on such terms as to remuneration and otherwise as the Directors may arrange but shall not in any circumstances be remunerated by a commission on or percentage of turnover.
93. A Director may be or become a Director of any company promoted

by this Company or in which it may be interested as a vendor shareholder or otherwise or in any subsidiary company and no such Director shall be accountable for any benefits received as Director or member of such company.

94. At any meeting of Directors a Director shall have one vote only.
95. Any question which shall arise at any meeting of the Board of Directors shall be decided by the votes of the Directors present in person.
96. No Director shall as a Director vote in respect of any contract or arrangement between the Company and himself personally or between the Company and any firm in which he is a partner and if he do so vote his vote shall not be counted but subject thereto a Director may vote in respect of any contract or arrangement in which he is interested.
97. If any Director including an alternate Director being willing shall be called upon to perform extra services or to make any special exertions in going or residing abroad or otherwise for any of the purposes of the Company the Company shall remunerate such Director by a fixed sum to be determined by the Directors and such remuneration may be either in addition to or in substitution for his share in the remuneration above provided and any such payment shall be disclosed to the shareholders at the Company's next Ordinary General Meeting.
98. Subject to any agreement to the contrary between him and the Directors any Director who becomes a Director of any other company as the nominee of this Company may also retain for his own benefit any remuneration to which he may become entitled in that capacity notwithstanding that his qualification for such Directorship may be held by him in trust for this Company.
99. The Directors may from time to time appoint one of the Directors including a Managing Director or any other person to be a General Manager of the business of the Company either for a fixed term not exceeding five years, or without any limitations of the term of such office and such remuneration

as the Directors may determine not being a commission or percentage of turnover and may subject to the terms of any agreement with such persons remove and discharge any such person and may from time to time entrust to and confer upon a General Manager for the time being such of the powers exercisable under these presents by the Directors as they think fit (not including the power to make calls forfeit shares borrow money or issue debentures) and may confer such powers for such time and to be exercised for such objects and purposes and upon such terms and conditions and with such restrictions as they think expedient and may from time to time revoke and withdraw alter or vary all or any of such powers.

APPOINTMENT OF ALTERNATE DIRECTORS

100. Each Director shall have power to nominate any person approved for that purpose by a majority of the other Directors to act as alternate Director in his place during his absence or inability to act or attend as such Director and at his discretion to remove such alternate Director and on such appointment being made the alternate Director shall (except as regards share qualification) be subject in all respects to the terms and conditions existing with reference to the other Directors and each alternate Director while acting in the place of a Director shall exercise and discharge all the duties of the Director he represents but shall look for his remuneration to the Director appointing him and not to the Company. Any instrument appointing an alternate Director shall be delivered to and retained by the Company and shall as nearly as circumstances will admit be in the form or to the effect following:-

QUEENSLAND MINES LIMITED

I a Director of Queensland Mines  
 Limited in pursuance of the power in that behalf contained in  
 the Articles of Association of the Company hereby nominate  
 of

to act as alternate Director in my place and to exercise and discharge all my duties as a Director of the Company during my absence from The Australian Capital Territory (or my inability to act or attend as a Director) as the case may be.

As witness my hand this day of

If the Director making any such appointment as aforesaid shall cease to be a Director the person appointed by him shall thereupon cease to have any power or authority to act as an alternate Director.

#### DISQUALIFICATION OF DIRECTORS

101. The office of Director shall be vacated ipso facto:-
- (a) If he becomes bankrupt or insolvent or compound with his creditors.
  - (b) If he shall resign such office.
  - (c) If without permission of the Directors he absent himself from the meetings of Directors for a continuous period of three calendar months.
  - (d) If he shall be declared insane or of unsound mind.
  - (e) If he fail to pay any call or other debt due to the Company on or before the duly appointed time for the payment thereof.

#### ROTATION OF DIRECTORS

102. At the Ordinary General Meeting to be held in the year 1960 and at every succeeding Ordinary General Meeting one-third of the Directors (other than a Managing Director) or if their number is not a multiple of three then the number nearest to one-third shall retire from office and be eligible for re-election.
103. The one-third or other nearest number to retire as aforesaid at the ordinary meeting to be held in the year 1960 shall unless the Directors agree among themselves be determined by lot; but in every subsequent year the one-third or other nearest number who have been longest in office shall retire. As between two or more who have been in office an equal length of time the Director or Directors to retire shall in default of agreement between them be determined by lot. The length of time a Director has been in office shall be computed from his last election or appointment where he has previously vacated office. A retiring Director shall be eligible for re-election

and shall act as a Director throughout the meeting at which he retires.

104. The Company at an Ordinary General Meeting at which any Director retires in manner aforesaid or otherwise shall fill up the vacated office by electing a person to be Director (unless at such meeting it is determined to reduce the number) and may fill up any other vacancies.
105. If at any Ordinary General Meeting at which an election of Directors ought to take place the places of the retiring Directors are not filled up the retiring Directors shall continue in office until the Ordinary General Meeting in the next year and so on from year to year until their places are filled up unless it shall be determined at such Ordinary General Meeting to reduce the number of Directors.
106. The Company in General Meeting may from time to time increase or reduce the number of Directors and may determine in what manner or rotation such increased or reduced number is to go out of office.
107. No person not being a retiring Director shall be eligible for election for the office of Director at any General Meeting unless he or some other member intending to propose him has at least thirty clear days before the meeting left at the office of the Company a notice in writing duly signed by the nominee giving his consent to the nomination and signifying his candidature for the office or intention of such member to propose him; provided that in the case of a person recommended for election by the Directors nine clear days' notice only shall be necessary. Notice of each and every candidature shall seven days previous to the meeting at which the election is to take place be served on the registered holders of shares.
108. The members of the Company may by ordinary resolution in General Meeting remove any Director before the expiration of his period of office and may by ordinary resolution appoint another person in his stead but the person so appointed shall hold office during such time only as the Director in whose place he is appointed would have held the same had he not been removed.

109. Notwithstanding anything contained in paragraphs 102 to 108 of these Articles the provisions of those paragraphs shall only apply to and in respect of Directors appointed or elected otherwise than pursuant to the provisions of Article 110 hereof and the word "Directors" wherever appearing in any of those paragraphs shall mean only those of the Directors who are so appointed or elected.

110. Factors Ltd. shall so long as it shall be the registered holder of not less than forty per cent (40%) of the issued share capital of the Company be entitled to appoint three of the Directors of the Company if the number of Directors is five and four if the number of Directors is seven and also shall at any time be entitled to fill a casual vacancy among the Directors appointed by it and to remove any person so appointed by it from the position of Director of the Company and to appoint another person in his place.

Australasian Oil Exploration Limited shall so long as it shall be the registered holder of not less than thirty per cent (30%) of the issued share capital of the Company be entitled to appoint two of the Directors of the Company if the number of Directors is five and three if the number of Directors is seven and also shall at any time be entitled to fill a casual vacancy among the Directors appointed by it and to remove any person so appointed by it from the position of Director of the Company and to appoint another person in his place.

Any Director of the Company appointed pursuant to this Article shall not be subject to retirement as provided in Article 102 and shall not be taken into account in calculating who and in what order the other Directors shall retire.

Any appointment or removal of a Director pursuant to the provisions of this Article shall be made by notice in writing under the seal of the Company or signed by the person or persons entitled to exercise such power and shall take effect from the time such notice shall have been received by the Company.

If at any time the Company or persons or person who shall have appointed a Director or Directors of the Company pursuant to the provisions of this Article shall cease to be the holder of the percentage of shares in the paid-up capital of the Company in this Article hereinbefore set out the person or persons appointed as a Director or Directors of the Company by such company, person or persons as aforesaid shall ipso facto cease to be a Director or Directors of this Company.

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111. Subject to Article 110 hereof the Directors shall have power from time to time and at any time to appoint any other person to be a Director to fill a casual vacancy but any Director so appointed shall hold office only until the next following Ordinary General Meeting of the Company and shall then be eligible for re-election. When any vacancy exists in the authorised number of Directors such vacancy may be filled by the Company in general meeting if not already filled by the Directors if so authorised.
112. A Director shall not be required to hold any shares or stock in the capital of the Company.

MANAGING DIRECTORS

113. The Directors may from time to time appoint one or more of their body to be Managing Director or Managing Directors of the Company for a fixed term not exceeding five years subject to such appointee or appointees continuing to be a Director through the period so fixed and may from time to time remove him or them from office and appoint another or others in his or their stead.
114. A Managing Director shall not while he continues to hold that office be subject to retirement by rotation and he shall not be taken into account in determining the rotation of retirement of Directors but he shall subject to the provisions of any contract between him and the Company be subject to the same provisions as to resignation and removal as the other Directors of the Company and if he cease to hold the office of Director from any cause he shall ipso facto and immediately cease to be a Managing Director.
115. The remuneration of a Managing Director shall from time to time be fixed by the Directors but shall not be by a commission on or percentage of turnover.
116. The Directors may from time to time entrust to and confer upon a Managing Director for the time being such of the powers exercisable under these presents by the Directors as they may think fit and may confer such powers for such times and to be exercised for such objects and purposes and upon such terms and conditions and with such restrictions as the Directors think fit and the Directors may confer such powers collaterally with



or to the exclusion of and in substitution for all or any of the powers of the Directors in that behalf and may from time to time revoke withdraw alter or vary all or any of such powers.

PROCEEDINGS OF DIRECTORS

117. The Directors may meet together for the despatch of business adjourn and otherwise regulate their meetings and proceedings as they think fit and may determine the quorum necessary for the transaction of business. Until otherwise determined two Directors shall form a quorum. A Director who is not in Australia shall not be entitled to notice of a meeting of Directors. A Director may at any time and the Secretary upon the request of any Director shall convene a meeting of the Directors. Questions arising at any meeting shall be decided by a majority of votes.
118. The Directors shall elect a Chairman of their meetings and determine the period for which such Chairman is to hold office but if no such Chairman is elected or if at any time the Chairman is not present at the time appointed for holding the same the Directors present shall choose some one of their number to be Chairman of such meeting.
119. A meeting of the Directors for the time being at which a quorum is present shall be competent to exercise all or any of the authorities powers and discretions by or under the regulations of the Company for the time being vested in or exercisable by the Directors generally.
120. The Directors may delegate any of their powers to committees consisting of such member or members of their body as they may think fit. Any committee so formed shall in the exercise of the powers so delegated conform to any regulation which may from time to time be imposed upon it by the Directors. The meetings and proceedings of any such committees consisting of three or more members shall be governed by the provisions herein contained for regulating the meetings and proceedings of the Directors so far as the same are applicable thereto and not superseded by any regulations made by the Directors in the last preceding clause.

121. All acts done at any meeting of the Directors or by a committee of Directors shall notwithstanding that it shall afterwards be discovered that there was some defect in the appointment of such Directors or persons acting as aforesaid or that they he or any of them were disqualified be as valid as if every such person had been duly appointed and was qualified to be a Director.

122. A resolution in writing signed by all the Directors shall be as valid and effectual as if it had been passed at a meeting of Directors duly convened.

#### POWERS OF THE DIRECTORS

123. The Management of the business of the Company shall be vested in the Directors who in addition to the powers and authorities by these presents or otherwise expressly conferred on them may exercise all such powers and do all such acts and things as may be exercised or done by the Company and are not hereby or by the Statute expressly directed or required to be exercised or done by the Company in General Meeting but subject nevertheless to the provisions of the Statute and of those presents and to any directions from time to time given by the Company in General Meeting but no directions given by the Company in General Meeting shall invalidate any prior act of the Directors which would have been valid if such directions had not been given.

124. Without prejudice to the generality of the last preceding Article and the other powers conferred by these presents it is hereby expressly agreed that the Directors shall have the following powers:-

- (a) They may pay out of the funds of the Company whether capital or otherwise all costs charges or expenses of or incidental to the formation registration and establishment of the Company and the issue of its capital including brokers' commissions fees and charges for or in connection with obtaining applications for shares for placing or assisting to place any shares debentures or other securities of the Company or for any other reason which the Directors of the Company may think proper.
- (b) They may make and carry into effect arrangements for the purchase or acquisition of any property rights or privileges

which the Company is authorised to acquire at such price and generally on such terms and conditions as they think fit.

- (c) They may adopt such measures as they may from time to time deem expedient for the purpose of carrying on improving and developing the business of the Company.
- (d) They may purchase take in exchange or on lease or hire or otherwise acquire and for any estate or interest therein all such machinery plant engines and other material chattels and things in connection with the business of the Company and any real estate which they may think fit requisite or expedient to acquire for the purpose of the Company's business and may at their discretion again sell let or dispose of any property so to be acquired for the purposes of the Company's business. Provided that any sale or disposal by the Directors of the Company's main undertaking shall be subject to ratification by shareholders at a specially convened General Meeting.
- (e) They may pay for the acquisition of any properties which the Company is authorised to acquire either in cash or in shares (to be treated as either wholly or in part paid up) or partly in cash and partly in shares or in such manner as they from time to time deem expedient including the giving of an option to purchase shares.
- (f) They may make and give receipts releases and other discharges for money payable to the Company and for the claims and demands of the Company.
- (g) They may institute conduct defend compromise and abandon legal and other proceedings and claims by and against the Company and the Directors and officers of the same and otherwise concerning the affairs of the Company and also prove in bankruptcy or liquidation for any debt due to the Company, or appoint any clerk collector or agent for the said purposes.
- (h) They may affix the Seal of the Company to and may subscribe and otherwise execute and complete or cause to be executed and completed all arrangements conveyances grants mortgages bonds deeds of exchange leases and all other deeds assurances

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and documents which they may from time to time think necessary.

- (i) They may refer disputes to arbitration and compromise any debts or claims due to or from the Company other than sums due to the Company for arrears upon calls.
- (j) They may give time to any debtor to the Company for payment of his debt either with or without security.
- (k) They may invest and deal with any of the moneys of the Company not immediately required for the purposes thereof upon such securities (not being shares in the Company) and in such manner as they may think fit and from time to time may vary or realise such investments. Investments may in any case in which they may think fit be made in the names of Trustees for the Company.
- (l) They may from time to time appoint such and as many Trustees for any of the purposes of the Company as they think proper and may cause any property whether real or personal belonging to or about to be acquired by or on behalf of the Company to be conveyed or otherwise assigned to or otherwise vested in such Trustees or any of them as Trustees for the Company.
- (m) They may from time to time receive money at interest on deposit fixed or otherwise.
- (n) They may insure against damage by fire or at sea any insurable property of the Company and against losses in respect of Workmen's Compensation Acts for the time being in force or any other insurable risks arising out of the Company's business.
- (o) They may act on behalf of the Company in all matters relating to bankrupts and insolvents.
- (p) They may appoint suspend remove and again appoint all such managers managing agents officers clerks workmen and servants in the business and servants or agents either for permanent temporary or special purposes as they may from time to time deem necessary upon such terms in all respects as they may think proper and determine their respective salaries or emoluments and require security in such instances

and to such an amount as they may think fit for the proper and efficient discharge of their duties respectively.

- (q) They may draw accept make endorse transfer discount guarantee and negotiate such cheques bills of exchange and promissory notes and deposit notes and other obligations as may seem to them to be expedient for the purposes of the business of the Company and may determine who shall be entitled to sign on the Company's behalf any such cheques bills of exchange or promissory notes.
- (r) They may enter into and execute and also release modify vary or discharge any contract agreement or engagement lease or other instrument respecting any matter in which the Company may be interested.
- (s) They may provide for the management and transaction of the affairs of the Company in any specified locality whether in Australia or abroad in such manner as they may think fit and the provisions contained in the four next following clauses shall be without prejudice to the general powers conferred by this clause.
- (t) They may from time to time and at any time establish any local boards or agencies for managing any of the affairs of the Company in any such specified locality and may appoint any persons to be members of such local board or any managers or agents and may fix their remuneration. And the Directors from time to time and at any time may delegate to any person so appointed any of the powers authorities and discretions for the time being vested in the Directors other than the power of making calls and may authorise the members for the time being of any such local board or any of them to fill up any vacancies therein and to act notwithstanding vacancies and any such appointment or delegation may be made on such terms and subject to such conditions as the Directors may think fit and the Directors may at any time remove any person so appointed and may annul or vary any such delegation.
- (u) They may at any time and from time to time by power of attorney under the Company's Seal appoint any person or persons to be the attorney or attorneys of the Company for such purposes and with such powers authorities and discretions (not exceeding those vested in or exercisable

by the Directors under these presents) and for such period and subject to such conditions as the Directors may from time to time think fit and any such appointment may (if the Directors think fit) be made in favour of the members or any of the members of any local board established as aforesaid or in favour of any company or of the members Directors nominees or managers of any company or firm or in favour of any fluctuating body of persons whether nominated directly or indirectly by the Directors and any such power of attorney may contain such provisions for the protection or convenience of persons dealing with such attorney or attorneys as the Directors may think fit.

- (v) They may authorise any such delegates or attorneys to sub-delegate all or any of the powers authorities and discretions for the time being invested in them.
- (w) They may exercise the powers conferred upon the Company by Section 86 of the Companies Act and they may subject to Section 87 of the Companies Act make such provisions as they think fit respecting the keeping of any branch register and may notwithstanding any other provision of the Articles but subject to Section 351 of the Companies Act determine the manner in which certificates for shares on the branch register may be sealed and signed or may authorise the issue of an official seal of the Company for use in any country state territory or place and determine by whom the same shall be affixed to any certificate deed or other document executed by the Company and the Directors may from time to time appoint such person or persons or any corporation (hereinafter referred to as "the authority") as they shall think fit in any place in which a branch register is kept to approve or reject transfers and to direct the registration of approved transfers in the branch register of such place and every such authority may in respect of transfers or other entries proposed to be registered in the branch register for which such authority is appointed exercise all the relevant powers of the Directors in the same manner and to the same extent and effect as if the Directors themselves were actually present in the place and exercised the same.
- (x) They may at their absolute discretion execute and do every assurance and thing which they may judge necessary or expedient for the purpose of carrying on the business of the

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Company except any such assurance or thing as is by these presents or by law prohibited.

#### MINUTES

125. The Directors shall cause minutes to be duly entered in books provided for that purpose:-
- (a) Of all appointments of officers.
  - (b) Of the names of the Directors present at each meeting of the Directors and of any committee of Directors.
  - (c) Of all orders made by the Directors and committees of Directors.
  - (d) Of all resolutions and proceedings of General Meetings and meetings of the Directors and committees.

And any such minutes of any meeting of the Directors or any committee of the Company if purporting to be signed by the Chairman of such meeting or by the Chairman of the next succeeding meeting shall be received as prima facie evidence of the matters stated in such minutes.

#### THE COMMON SEAL

126. The Directors shall provide for the safe custody of the Common Seal of the Company which shall never be used except by the Authority of the Directors previously given and in the presence of two Directors and the Secretary or some other person appointed by the Directors for the purpose and such Directors and Secretary or other person as aforesaid shall sign every instrument to which the Seal is so affixed in their presence.

#### DIVIDENDS AND RESERVES

127. Subject to any priorities that may be given upon the issue of any shares and the provisions hereinafter contained as to reserves the profits of the Company available for distribution shall be divisible among the members irrespective of the amount for the time being paid up on the shares held by them respectively.

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128. The Company in General Meeting may declare dividends but no dividend shall exceed the amount recommended by the Directors.
129. The Directors may from time to time pay to the members such interim dividends as appear to them to be justified by the profits of the Company.
130. No dividend shall be paid otherwise than out of the profits of the Company.
131. Any General Meeting declaring a dividend may direct payment of such dividend wholly or in part by the distribution of specific assets and in particular of paid-up shares debentures or debenture stock of the Company or of any other company or in any one or more of such ways and the Directors shall give effect to such resolution and where any difficulty arises in regard to the distribution the Directors may settle the same as they think expedient and in particular may issue fractional certificates and may fix the value for distribution of such specific assets in trustees upon such trusts for persons entitled to the dividend as may seem expedient to the Directors. Where requisite a proper contract shall be filed in accordance with Section 145 of the Companies Act 1936 and the Directors may appoint any person to sign such contract on behalf of the persons entitled to the dividend and such appointment shall be effective.
132. The Directors may retain any dividends on which the Company has a lien and may apply the same in or towards satisfaction of the unpaid calls interest and expenses in respect of which the lien exists.
133. All dividends and interest shall belong and be paid (subject to the Company's lien) to those members who shall be on the register at the date at which such dividend shall be declared or at the date at which interest shall be payable respectively notwithstanding any subsequent transfer or transmission of shares.
134. If several persons are registered as joint holders of any share any one or more of them may give effectual receipts for any dividend payable on the share.
135. Notice of any dividend that may have been declared shall be given



in manner hereinafter mentioned to the persons entitled to share therein.

136. No dividend shall bear interest against the Company.
137. Unless otherwise directed any dividend may be paid by not negotiable cheques or warrant made payable to the person or persons entitled or to bearer and sent through the post to the registered address of the person entitled or in case of joint holders to that one of them first named in the register in respect of the joint holding.

#### ACCOUNTS

138. The Directors shall cause true accounts to be kept of the sums of money received and expended by the Company and the matters in respect of which such receipts and expenditure take place and of the assets credits and liabilities of the Company.
139. The books of account shall be kept at the registered office of the Company or at such other place or places as the Directors think fit.
140. The Directors shall from time to time determine whether and to what extent and at which times and places and under what conditions or regulations the accounts and books of the Company or any of them shall be open to the inspection of members and no member (other than a Director) shall have any right of inspecting an account or book or document of the Company except such as is conferred by Statute or by the Directors or by the Company in General Meeting.
141. At the Ordinary Meeting next after the Statutory Meeting and at each subsequent Ordinary Meeting the Directors shall lay before the Company a profit and loss account and a Balance Sheet duly audited containing a summary of the property and liabilities of the Company made up to a date not more than four months before the meeting from the time when the last preceding account and balance sheet were made up or in the case of the first account and balance sheet from the incorporation of the Company and such account shall show the total remuneration (including fees,

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percentages and other emoluments) paid or payable to all Directors of the Company and of Subsidiary Companies (if any) during the period to which the account relates.

142. Every such balance sheet shall be accompanied by a report of the Directors as to the state and condition of the Company and as to the amount which they recommend to be paid out of the profits by way of dividend to the members and the amount (if any) which they propose to carry to the reserve fund according to the provisions in that behalf hereinbefore contained and the account report and balance sheet shall be signed by two Directors and countersigned by the Secretary.
143. A printed copy of the account report and balance sheet shall be sent direct to the registered address of every shareholder at least seven days before the date of the meeting at which they are to be considered. Two copies of such account report and balance sheet shall at the same time be forwarded to the Secretary of each Stock Exchange upon which the Company is listed.

#### AUDIT

144. (a) Once at least in every year the accounts of the Company shall be examined and the correctness of the balance sheet ascertained by one or more Auditors.
- (b) The Company's share register and branch register (if any) shall be audited at intervals of not more than three months.
145. The first Auditors shall be appointed by the Directors. Subsequent Auditors shall be appointed by the Company in General Meeting.
146. If one Auditor only is appointed all the provisions herein contained relating to Auditors shall apply to him.
147. An Auditor may be a member of the Company but no person is eligible as an Auditor who is interested otherwise than as a member in any transaction of the Company and no Director or other officer of the Company is eligible during his continuance in office and no partner or employer or employee of a Director or

officer of the Company or firm of which a Director is a partner shall be eligible for the position.

148. The election of Auditors shall be made by the Company at the Ordinary Meeting in each year.
149. The remuneration of the Auditors shall be fixed by the Company in General Meeting.
150. Any Auditor shall be eligible for re-election on his retiring from office but notice of candidature of any person other than a retiring Auditor shall be given to the Company at least eleven days before the meeting at which the appointment is to be made.
151. If any casual vacancy occurs in the office of any Auditor appointed by the Company the Directors may fill the same but the person so appointed shall only hold office until the Ordinary Meeting next after his appointment.
152. If no election of Auditors is made in manner aforesaid the Directors may appoint an Auditor for the current year and fix the remuneration to be paid to him by the Company for his services.
153. Every Auditor shall be supplied with a copy of the balance sheet and it shall be his duty to examine the same with the accounts and vouchers relating thereto.
154. Every Auditor shall have delivered to him a list of all books kept by the Company and shall at all reasonable times have access to the books and accounts of the Company. He may in relation to such accounts examine the Directors or any other officer of the Company.
155. The Auditors shall make a report to the members upon the balance sheet and accounts and in every such report they shall state whether in their opinion the balance is a full and fair balance sheet containing the particulars required by these Articles and properly drawn up so as to exhibit a true and correct view of the Company's affairs.

45.

## NOTICES

156. Every member and every person entitled by transmission to vote under the provisions of these presents shall from time to time leave in writing at the office of the Company a place of address within the Commonwealth of Australia to be registered as his place of residence and the place from time to time so registered shall for the purpose of the Statute and these presents be deemed his place of residence. In default of his so doing the office of the Company shall be deemed his place of residence and registered address for these purposes.
157. Notices calling General Meetings or adjournments thereof and all other notices to be given under or in reference to these presents shall be given by sending letters to the persons to be notified at their registered addresses. All letters sent in pursuance of these Articles shall be signed by the Secretary or other person authorised by the Directors except in case of a meeting convened by members in accordance with these presents and in that case they shall be signed by the members convening the same. Any such signatures may be written typewritten or printed.
158. The said letters may be served either personally or by sending them through the post in a prepaid envelope addressed to the persons to be notified at their registered addresses or at their last known places of abode in Australia.
159. Any notice so sent by post shall be deemed to have been served on the day following that on which the letter containing it was put into the post; in proving service it shall be sufficient to prove that the letter containing the notice was properly addressed and put in the post-box.
160. All notices given to members shall with respect to any shares to which several persons are jointly entitled be given to the one of such persons who is named first in the register of members and a notice so given shall be sufficient notice to all holders of such shares.
161. Every person who by operation of law transfer or otherwise shall become entitled to any share shall be absolutely bound by every notice so given as aforesaid which previously to his name and

address being entered upon the register shall be duly given to the person from whom he derives his title to such share and notwithstanding that the Company shall have notice of the death insanity bankruptcy or disability of such member.

162. No person who shall have omitted to give his address for registration shall be entitled to receive any notice from the Company.
163. Where a given number of days' notice or notice extending over any other period is required to be given the day of service shall unless it is otherwise provided be counted in such number of days or other period.

#### WINDING UP

164. If the Company shall be wound up and the assets available for distribution among the members as such shall be insufficient to repay the whole of the paid-up capital such assets shall be distributed so that as near as may be the losses shall be borne by the members in proportion to the capital paid up or which ought to have been paid up at the commencement of the winding up on the shares held by them respectively. And if in a winding up the assets available for distribution among the members shall be more than sufficient to repay the whole of the capital paid up at the commencement of the winding up the excess shall be distributed among the members in proportion to the capital at the commencement of the winding up paid up or which ought to have been paid up on shares held by them respectively. If the Company be wound up within six months of its listing on the Adelaide, Brisbane, Hobart, Melbourne, Perth or Sydney Stock Exchanges, share capital issued for cash shall, in a distribution of assets rank in priority to that issued to Vendors and/or Promoters for other considerations than cash, to the extent of capital contributed by subscribing shareholders. This clause is to be without prejudice to the rights of the holders of shares issued upon special terms and conditions.
165. If the Company shall be wound up the Liquidator (whether voluntary or official) may with the sanction of an extraordinary resolution distribute in specie among the contributories any part of the assets of the Company and in particular any shares stocks or debentures of any other company which this Company may be entitled

to and may with the like sanction vest any of the assets of the Company in trustees upon such trusts for the benefit of the contributories or any of them as the liquidator with the like sanction shall think fit and if through expedient any such division may be otherwise than in accordance with the legal rights of the contributories of the Company and in particular any class may be given preferential or special rights or may be excluded altogether or in part but in case of any division otherwise than in accordance with the legal rights of the contributories any contributory who would be prejudiced thereby shall have a right to dissent and ancillary rights as if such determination were a special resolution passed pursuant to Section 269 of the Companies Act 1936.

166. In the event of a winding up of the Company every member of the Company who is not for the time being in The Australian Capital Territory shall be bound within fourteen days after the passing of an effective resolution to wind up the Company voluntarily or the making of an order for the winding up of the Company to serve notice of the name and address of some person in the Territory upon whom all summonses notices process orders and judgments in relation to or under the winding up of the Company may be served; and in default of such appointment the liquidator of the Company shall be at liberty on behalf of such member to appoint some such person and service upon any such appointee whether appointed by the member or the liquidator shall be deemed to be good service on such member for all purposes and where the liquidator makes any such appointment he shall with all convenient speed give notice thereof to such member by advertisement in a Canberra daily newspaper or by registered letter sent through the post and addressed to such member at his address as mentioned in the register.

#### INDEMNITY

167. Every Director Manager Secretary and officer or servant of the Company shall be indemnified by the Company against and it shall be the duty of the Directors out of the funds of the Company to pay all costs losses and expenses which any such officer or servant may incur or become liable to by reason of any contract entered into or act or thing done by him as such officer or servant or in any way in the discharge of his duties including travelling expenses.

48.

808. Exhibit "AZ" - Articles  
of Association of  
Queensland Mines Limited

168. No Director or other officer of the Company shall be liable for the acts receipts neglects or defaults of any other Director or officer or for joining in any receipt or other act of conformity or for any loss or expenses happening to the Company through the insufficiency or deficiency of title to any property acquired by order of the Directors for or on behalf of the Company or for the insufficiency or deficiency of any security in or upon which any of the moneys of the Company shall be invested or for any loss or damage arising from the bankruptcy insolvency or tortious act of any person with whom any money securities or effects shall be deposited or for any loss occasioned by any error of judgment or oversight on his part or for any other loss damage or misfortune whatever which shall happen in the execution of the duties of his office or in relation thereto unless the same happen through his own dishonesty wilful act or default.
169. On the sale of the Company's main undertaking or on the liquidation of the Company no commission or fee shall be paid to a Director or Directors or Liquidators unless it has been ratified by shareholders. Prior notification on the amount of such proposed payments shall be given to all registered holders of shares at least seven days prior to the Meeting at which any such payment is to be considered.

WE, the several persons whose names and addresses are subscribed hereto being the subscribers to the Memorandum of Association hereby agree to the foregoing Articles of Association.

Names, Addresses and Descriptions of Subscribers	Witness to Signatures
<p>Ernest Roy Hudson            472 William St. Broken Hill - Salento</p> <p>John Kenneth Redbank (COMPANY DIRECTOR)            7 GRAY COURT, BENEFARISS, MELBOURNE</p> <p>David Miller 34 Queens Rd., Melb Vic            Company Director.</p> <p>Elizabeth Pratt            17 Horne Street, Colyton Hill, Melb. Vic            Secretary</p> <p>William HERBERT McCulloch            108 SACKVILLE STREET KEN. VICTORIA.            VICTORIA. BRICK ACCOUNTANT</p> <p>Janet. FLAT 6. 501 STANLDA RD. MELBOURNE. CRK</p> <p>Ernie Hunter.            810 Hampton Street, Middle Brighton            Secretary</p>	<p>Roberta Dasteler            15 Railway St., Broken Hill            6/11/59</p> <p>Francis Alfred Ross McEwan            422 Little Collins Street            Melbourne Solicitor</p>

DATED this THIRTEENTH day of JANUARY 1959.



**BOARD OF DIRECTORS QUEENSLAND MINES LIMITED**

**Composition Jan 15, 1959 to August 1967**

Chairman shown thus \*

Date of Change							
Jan.15, 1959	REDPATH*,	HUDSON,	KORMAN, D.				
Feb.13, 1962	Resigned,	HUDSON,	KORMAN, D.,	GLADSTONES*			
Apr.17, 1963	-	HUDSON,	KORMAN, D.,	Resigned,	KORMAN, S.		
May 12, 1964 (Alternate)	-	HUDSON,	KORMAN, D.,	-	KORMAN, S. (Janover)		
May 22, 1964	-	HUDSON,	Resigned	-	Resigned		10
May 23, 1964	NORTHCOTT*	HUDSON,	RIDGWAY,	ROBERTS			
Aug. 1966	Deceased,	HUDSON*,	RIDGWAY,	ROBERTS			
July 12, 1967 (Alternate)	-	HUDSON*,	RIDGWAY, (Madden)	ROBERTS			
Aug.17, 1967	REID,	HUDSON,	Resigned,	ROBERTS,	DOWLING,	FERGUSON,	TILLEY
Aug.30, 1968	Deceased	HUDSON,		ROBERTS,	DOWLING,	FERGUSON,	TILLEY
Mar. 1971	RODGERS	HUDSON	KENNON	ROBERTS	DOWLING	FERGUSON	TILLEY
May 28, 1971	RODGERS	HUDSON	KENNON	Resigned	Resigned	FERGUSON	TILLEY
Aug. 1971	Resigned	HUDSON	KENNON			FERGUSON	TILLEY

Exhibit 73 -  
List of Directors -  
Queensland Mines

Rebuiy Allowance E.A. Hudson

Rs

1967				1968			
July 1.	To	£	4270.00	July 31	By	£	4270.00

Exhibit 24 - Private Journal No. 1 of Queensland Mines Limited 812.

Q. M. L. 1161  
PRIVATE JOURNAL

MEMORANDUM BOOK

1917  
JOURNAL  
31-12-17

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QUEENSLAND MINES LIMITED


1959					
January 19	Unallocated Shares	C2	1,000,000		
	To Nominal Capital	C1			1,000,000
<p>Authorised Capital being 12,000,000 shares of 5/- each</p>					
	Uncalled Capital	C3	1 15		
	To unallocated Shares	C2			1 15
	7 subscribers per 7 5/- each				
April 21	Uncalled Capital	C3	245,000		
	To unallocated Shares	C2			245,000
<p>being issue of 980,000 <sup>shares</sup> to Meshkessian Oil Exploration Ltd</p>					
	Andersons Loans	A2	245,000		
	To Uncalled Capital	C3			245,000
<p>being 980,000 shares issued to Meshkessian Oil Exploration Ltd in consideration of the transfer of leases known as Anderson's Side Leases numbered 4316, 4317 &amp; 4319</p>					
	Uncalled Capital	C3	255,000		
	To Unallocated Shares	C2			255,000
<p>being issue of 1,020,000 shares to Facias Limited</p>					
	Application & allotment	A1	4250		
	To Uncalled Capital	C3			4250
<p>being 10 per share payment in settlement of 1,020,000 shares</p>					

3

1959

April 21	Calls on Shares	C4	25500					
	To Uncalled Capital	C3				25500		
	being call of 64 p per share							
	of 1,020,000 shares							
June 25	Calls on share	C4	72250					
	To Uncalled Capital	C3				72250		
	being call of 1/5 p per share							
	on 1,020,000 shares							
May 21	Inured Property	F2	15000					
	Motor Vehicles	M2	900					
	To A.O.E from A/c	A3				25900		
	being House at Mt Isa 15000							
	Land town 1450 Larder 1100							
	Champion jeep 1300 all							
	acquired from A.O.E.							
	Wages	S2	202					
	Motor Vehicle Exp	M3	120					
	Geologists Exp	M1	98					
	Office Expenses (Stationery)	O1	23					
	Rent	R1	120					
	Labour on alterations to house	F2	468					
	Material for alterations to house	F2	26					
	Petty Cash	P1	5					
	Electricity Deposits	D2	10					
	Bank charges	C4	6					
	To Imprest M/c Mt Isa	96					1000	27
	Ed Hudson from M/c	H1					80	2
	Debit Mt Isa							
	Expenses							

Palace & Printing & Stationery	PCA	1	14	.				
Traveling & Accom	TIA	1	14	.				
To Gen Exp	RIA						3	8
petty cost items passed to General Expenses								
Traveling & Accommodation	TIA	90	1	5				
Telephone	PIA	3	2	"				
Motor Expenses	MIA	1	10	1				
General Exp	GIA	1	.	"				
Mine Development	MIA	27	6	7				
To Lady Debts	DIA						9	11 "
.. to Caries	PIA						123	8
Admitted on dismission of Baird G.P.								
Mine Development etc	MIA	2079	1	1				
To Exchange & Bank Fee	EIA						89	13 3
.. General Expenses	GIA						56	11 5
.. Motor Expenses	MIA						133	12 4
- Print & Stationery	PIA	577	5	10			297	2 10
.. Rent	RIA						560	17 2
.. Salaries	SIA						8383	5 7
.. Traveling	TIA						2557	12 6
Expenses transferred to Development etc								
Spec Mc M Sta	YIA	2						
To Development etc	MIA						2	
Set of Sketches on M Sta surface G.P.								

<p>Mine Development A/c            To Survey Credits            accrual of expenses on under            salary E. Hudson 625            .. P. E. Hodgway 277            Mine Fee 84            Drilling Expense 1710</p>	<p>M 12690            C 52</p>		<p>2690</p>	
<p>Treasury Property A/c            To Mining Development            fees Mrs Dyer correctly            debited</p>	<p>P 2110            M 12</p>		<p>110</p>	
<p>Mine Development            To Sydney Junction A/c            polishing wages charged</p>	<p>M 1251            P 52</p>		<p>51</p>	
<p>Hudsons Lease            To Uranium Option            fees for extension of option            1035/6/19</p>	<p>A 27000            U 12</p>	<p>10</p>	<p>1000</p>	<p>10</p>
<p>Sundry Debts            To Mine Development            air fares due by J. L. A            wages by charge to G. M. H.</p>	<p>D 1293            M 12</p>	<p>18 9</p>	<p>293</p>	<p>18 9</p>

Aug	18	Calls on shares To Unsettled Capital Call of 300 shares @ 1,020, 000 shs H.S.	C4	12700				
			C3				12700	
Dec	5	Call on share To Unsettled Capital Call of 200 shares @ 1,020, 000 shs H.S.	C4	8500				
			C3				8500	
Nov	17	Call on shares To Unsettled Capital Call of 300 shares @ 1,020, 000 shs H.S.	C4	12700				
			C3				12700	
Dec	21	Call on share To Unsettled Capital Call of 200 shares @ 1,020, 000 shs H.S.	C4	8500				
			C3				8500	
Dec		Included Property To A.O.E. Ltd Value of house at sea H.S.	F6	2500				
			A3				2500	
Dec	31	Wages	A2	1518	12	6		
		Development Exp. Andersons	A1	4005	4	1		
		Office Expenses Stationery etc	O1	263	9	8		
		Office Furniture (Almond)	F5	102	5	5		
		Travel Exp (dates 179-2-1) H.S.	F1	311	2	1		
		Rent Office	R1	306				
		Motor Expenses	M3	527	17	.		
		Electricity & Rent Sea	E1	33	11	.		
		Stanley St House Improvements	F2	942	15	5		
		Thames St House Improvements	F6	74	15	6		
		Traveling & Entertainment	T1	252	10	10		
		Typewriter	O1	152				
		Victoria Motor Mover	O1	57	18	9		
		Share Devel Copend	A4	232	8	2		
		Office Future	F7	250	.	.		
		Office Leftover	F2	250	.	.		
		to at sea interest H.S.	F1				19281	10 5



		Mr Isa Report A/c To Print. & Stationery Expenses	M. 411 17 6						
		events on Mount Clarendon	S. 32			44	2	6	
		suspense A/c	S. 32	44	2	6			
		These <del>deposits</del> <sup>myo development</sup> To suspense A/c	M. 11			44	2	6	
		now accounted as refund of benefits re Anderson Lines No 2 5441 + 5442 recorded as being included in General Anderson A/c.							
Jan	15	Cash on 5 lines	C. 4	12750					
	27	To unrecd Capital	C. 3			12750			
		Cash of 30 for share on 1,020,000 share iff.							
	30	Cash on 2 share	C. 4	8750		8750			
		To unrecd Capital	C. 3			8750			
		Cash of 29 for share on 1,020,000 share. iff.							
		Development A/c	M. 219 1 6						
		To M. 10/21/1919	S. 32			219	1	6	
		amount paid for gardening transferred to Mr Isa Cash Store Shd (Andersons)	S. 4	561	11				
		To Development	M. 11			561	11		
		transfer amount wrong by cheque Mr Isa Cash October 1919							
		Plan	S. 4	504	7	6			
		To Development A/c	M. 1	504	7	6	504	7	6
		Item of Plan purchase Madras Sydney Cash 25/9/59 + 5/11/59 wrong by cheque iff.							

		Paid						
		To A.O.E Loan A/c	C4, A3,	245				245
		Paid purchase from A.O.E						
		Field Day Lamp 115-0-0						
		Austroic Regia Crater, 45						
		CAC Scentometer 150						
		Panic Reflector 35						
		245						
		Sunday Circular	C5,	2606				
		To Meri Dev Co. A/c	M1,					2606
		Reverses of Provision 14						
		Salaries 886						
		Dullin 1710						
March	15	Calls on shares	C4,	8500				
		To Unocalba Capital	C3,					8500
		Call 20 per share on 1,000,000 shares						
April	24	Calls on share	C4,	4250				
		To Unocalba Capital	C3,					4250
		Call 10 per share on 1,000,000 shares						
May	16	Calls on shares	C4,	4150				
		To Unocalba Capital	C3,					4150
		Call 10 per share on 1,000,000 shares						
		At Sea Refers A/c	Y14,	80	19	1		
		To Chagoel Expend	C6,					80 19 1
		entries on At Sea Bank						
		statements.						

May	16	Wages	A <sub>1</sub>	1917	17	6			
		Office Expenses	O <sub>1</sub>	543	1	8			
		Andersons Developments	M <sub>1</sub>	762	4	5			
		Atlas Developments	M <sub>4</sub>	624	1	7			
		Motor Expenses	M <sub>3</sub>	455	12	5			
		Dull Tools	P <sub>4</sub>	190	15				
		Travelling Expenses	T <sub>1</sub>	318	4	10			
		Sheddy St Maintenance	R <sub>3</sub>	105	2				
		Worbes Camp Ho	B <sub>3</sub>	29	15	7			
		Theloy St House Repair	R <sub>3</sub>	26	16	3			
x		Prospecting Expense	B <sub>5</sub>	792	2	5			
		Fuel	F <sub>1</sub>	43	11	4			
		Bank Fees	F <sub>1</sub>	40	19				
		Bank Fees	F <sub>1</sub>	20	11	5			
		Chicago Trip	C <sub>6</sub>	300	2	3			
		Drawings Drawing	D <sub>3</sub>	514	1	5			
		To M Co Office	J <sub>4</sub>				6690	19	1
		Debit to Isa statement							
		1/1/60 - 30/4/60							
June	15	Calls on Shares	C <sub>4</sub>	12750					
		To Unearned Capital	C <sub>4</sub>				12750		
		Call 30 for shares of 1,020,000 shares							
July	22	Calls on Shares	C <sub>4</sub>	8500					
		To Unearned Capital	C <sub>4</sub>				8500		
		Call 20 for shares of 1,020,000 shares							

July	22	Wages	14	1086	7	6			
		Woha Expenses	143	257	12	6			
		Madison Expenses	111	449	9	3			
		Shao Expenses	114	609	16	6			
		Rent	11	72					
x		Diamond Drill Expenses	23	708	10	7			
		Sundry Expenses	91	6	11	8			
		Future Expenses	15	8	14				
		Travelling Expenses	11	347	14	1			
		Bank Fees	11	18	1				
		Office Expenses	2	9	18				
		Officer Elaine Mary	2	100					
		Geological Expenses	5	84	2	6			
		Insurances	31	87	6	9			
		To Mt Isa Report	9				3846	4	4
		Discharge Mt Isa Expenses 1/5/60 - 30/6/60							
July	31	Mt Isa Report A/C	91	685	16	5			
		To Pilot Plant A/C	91				664	11	5
		.. N.Z. Expts refund of A.M.	2				21	4	9
		Departments to Sydney May & June settlements This amount deducted from July settlement to Sydney to offset overpayment of previous months.							

July 11	Wages	S2	591	17	6			
	Starby St Maintenance	R3	25	6	11			
X	Ecological Expenses	D52	103	13	1			
	Office Expenses	O2	19	12	10			
	Rent	R1	72					
✓	Drawn and Paid Expenses	D31	130	19	10			
	Motor Expenses	M3	5	10				
	Shoe Development	M4	48	2	6			
	Post Exp	P11	1	17	9			
	To Mt Isa Inland	I1				999	0	5
	Debit of Mt Isa							
	July statement							
	Printing Exp	P5	219	3	2			
	To Chicago Expenses	C62				219	3	2
	Transfer of Expenses							
	Development Account	M1	2685	8	3			
	To A. O. E. Loan A/c	A3				1307	13	5
	To FACTORS Loan A/c	A4				1377	14	10
	being interest accrued on loan accounts at 10% per annum							
	Rent Received	R2	68					
	To Rent Paid	R1				68		
	Transfer of Rent received Mt Isa							
	Depreciation	D4	678	7	11			
	To Furniture Sydney Office 5% Dis					14	8	1
	.. Starby St House 5% Dis					96	6	
	.. Mt Isa Office 5% Dis					35	2	5
	Motor Vehicles 20% Dis					460		
	Office Machines 10% Dis					72	14	5
	See General Depreciation in Closing cost at end of year							

Depreciation							
Store Shed							
Stearly St House							
Hilary St House							
Bring accounts written off.							
Development Account	M1	36857	15	11			
To Diamond Drill Expenses	D3				1353	11	0
Exchange	E1				187	8	2
General Expenses	G1				781	2	7
Depreciation	D4				678	7	11
Iron Industry Expenses	I2				1252	1	10
Insurances	I3				139	13	11
Legal Expenses	L1				304	13	.
Motion Expenses	M3				1246	11	11
Office Expenses	O2				512	12	6
Printing + Stationery	P1				454	9	7
Petty Cash (Sundry)	P2				92	4	2
Payroll Tax	P3				221	6	6
Prospecting Fees	P5				1549	1	2
Pilot Plant	Q1				1657	10	4
Rent	R1				1874	6	8
Repairs & Maintenance	R3				261	1	8
Salaries	S2				18962	15	
Traveling Expenses	T1				4697	6	2
Store Shed	S4				561	11	
Minor Development							
Sundry Credits	M1	84					
To Home Sundry Credits	C5				84		
Provision for Audit Fees							

1960

Aug	26	Calls & shares To Unimex Capital Call 1 <sup>st</sup> for share 1,020,000 shares	C4 C3	4250									
Dec	6	Calls & shares To Unimex Capital Call 1 <sup>st</sup> for share 1,020,000 shares	C4 C3	4250									
Dec	23	Calls & shares To Unimex Capital Call 1 <sup>st</sup> for share 1,020,000 shares	C4 C3	4250									
Mar	23	Calls & shares To Unimex Capital Call 1 <sup>st</sup> for share 1,020,000 shares	C4 C3	4250									
Nov	10	Salaries Traveling & Accommodation Petty Cash Pilot's Cost Blue Metal Expenses Iron & Steel Expenses Office Expenses Telephone A/c To Sydney Account Disbursements Sydney branch Iron & Steel Expenses To Mine Development (Incom.) Refund received and transferred New Zealand 1620-4-5 Jamaica 1345-10-5	A2 T1 S1 P2 Q1 S5 S2 O2 S1 B2 A/C S2 M1	111 110 300 6 10 14 320 5 192 1070 2968	5 17 2 2 2 15 9 14	6 . 2 8 6 2 12 10							

	Wages	A2	1778	10	6			
	Motor Expenses	M3	498	17	6			
✓	Geological Expenses	P5	315	6	6			
	Office Expenses	O2	266	19	9			
	Rent	R1	324					
	Andersons Development	M1	83					
	Shale Development	M4	450	10				
	Bus fare Expenses (New hotel)	P5	98	3	4			
X	Diamond Drill Expenses	D3	628	4	3			
	Travelling Expenses	T1	100	11	.			
	Leaving the Car, St House	R3	90	.	.			
	Exchange.	E1	5	1	9			
	To M Isa Report A/C	P1				4639	6	7
	Debit in M Isa Aug - Dec statement							
	Wages	A2	486	12	.			
	House Expenses	R3	15	9	.			
	Drilling Expense (Anderson)	M1	184	1	7			
	Business Expenses (New hotel)	P5	103	12	3			
	Rent	R3	100	3				
✓	Diamond Drill Exp	D3	120					
	Office Expenses	O2	45	19	1			
	Bus	R1	306					
	Insurance Premium	I3	27	1				
	Travelling Expenses	T1	58	.	6			
	To M Isa Report A/C	P1				1436	19	5
	Debit in M Isa - Mar statement							
	M Isa Report A/C	P1	6	16	10			
	To Motor Expenses	M3				6	16	10
	Report by M Isa must be scanned							



April	1	Development Account	M1	235	16	9					
		To A.O.E. Loan A/c	A3				1454	7	7		
		To Atlas Loan A/c	F1				1281	9	2		
		Balance @ 3/31/60									
July	31	Bank Cash	P2	15	1	9					
		Tasmanian Expenses	P2	412	19	7					
		Rent	L1	50							
		Salaries	A2	74							
		Queensland University	Q1	60							
	X	At Isa Superfund	S1	500							
		Telephone	L1	29	12	1					
		Travelling	T1	180	9	2					
		Office Expenses	O2	128	6	3					
		Home Metal Expenses	B3	34	1	11					
		To Alfred Department Loan	M1				157	5	1	1	
		" " " " " "	M1				156	2	2	1	
		Outside Dinning	D3				500			1	
		Sale of Jeep	U2				350			1	
		.. Sydney A/c adjustment	D2				321	3	6	1	
		Disburse of Sydney statement - April - July 1961									
		Wages	A2	137							
		Telephone	L1	79	9	1					
		Lease fee	M1	28	7						
		Loan Expenses	M3	17	15						
		Off a Expenses	O2	13	5						
		Share Expenses	M4	3	3						
		Post Office	R1	234							
		Repairs	A3	10	14	11					
		Insurance	S3	10	4						
		To Mt Isa Superfund A/c	S1				533				
		Disburse of Mt Isa statement 7/1/61 - 31/7/61					543	18			

<p>W. Lee Wpnd 1/2 To Electricity Dept of fund on ad fee from station.</p>	<p>Y1 D2</p>	<p>5</p>			<p>5</p>	
<p>mine Development To Survey Council provision for Rent for</p>	<p>M1 C5</p>	<p>84</p>			<p>84</p>	
<p>Depreciation To Furniture &amp; Office Equip Stables &amp; House M. Isa Office Motor Vehicle Office Machine Depreciation provision on Excess of value Game cart.</p>	<p>D4 D5 D5 D5 D5 D5 D5 D5</p>	<p>678</p>	<p>7</p>	<p>11</p>	<p>14 96 25 460 72</p>	<p>5 6 2 14 5</p>
<p>Being allowance to Property to Survey Council Being provision for allowance payable by lump sum see Memorandum No 9/6</p>	<p>C5</p>	<p>2000</p>			<p>2000</p>	
<p>Being allowance to Ed Hudson to Survey Council Being provision for allowance payable by lump sum see Memorandum No 9/8</p>	<p>R5 C5</p>	<p>4270</p>			<p>4270</p>	
<p>Balance To Survey Council Being amount due to Ed Hudson to 15/3/61</p>	<p>D2 C5</p>	<p>1562</p>	<p>10</p>		<p>1562</p>	<p>10</p>

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July

31	<p>Consulting fees</p> <p>To Provision for Consulting fees Payable</p> <p>1/2 Highway 7 months at £1000 per annum £583-6-8</p> <p>2/2 Hudson 4 months at £100 per annum £166-13-4</p>	C9	750					
		C8				750		
	<p>Interest on Loan</p> <p>To Interest due A.O.E</p> <p>Interest at 10% 1/4/61-31/7/61 on £18907-1-0</p>	14	630	4	6			
		15				630	4	6
	<p>Interest on Loan</p> <p>To Interest due Tachon</p> <p>Interest at 10% 1/4/61-31/7/61 on £16659-4-0</p>	14	555	6				
		16				555	6	
	<p><del>Swedish Debts</del></p> <p><del>To Cash on Hand</del></p> <p><del>amount due by Tachon</del></p> <p><del>on 31/7/61</del></p>							
			1525					
		C4				1525		
	<p>Provision for Depreciation</p> <p>Mine Development Incessant</p> <p>To Motor Vehicles</p> <p>Being adjustment on sale of Land from Reginald Coal £1400 Sold £350</p>	D5	560					
		M1	490					
		M2				1050		
	<p>Joelas Loan A/c</p> <p>A.O.E Loan A/c</p> <p>Mine Development</p> <p>Adjustment of over provision for interest to 31/3/61</p>	F1	256	6				
		A3	290	13				
		M1				546	19	-

1961  
July

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		M1	13	62	16	11			
31	Miner Development								
	Le Blue Metal Expenses	D3					730	7	.
	Consulting Fees	C7					750	.	.
	Diamond Drill Expense	D3					228	4	3
	Depreciation	D4					678	7	11
	Explosives & Fuel	F1					5	.	9
	General Expense	G1					301	10	4
	Iron Industry Expense	I2					4280	1	7
	Insurance Premiums	I3					47	5	.
	Interest on Loans	I4					1185	10	6
	Legal Expenses	L1					13	6	.
	Motor Expenses	M3					509	15	8
	Office Expenses	O2					599	14	6
	Petty Cash	P2					60	4	5
	Pay Roll Tax	P3					109	8	4
	Prospecting Fees	P5					315	8	6
	Queensland University Field Work	Q1					1274	19	2
	Rent	R1					1225	5	.
	Repairs & Maintenance	R3					385	10	10
	Retiring Allowance of Employees	R4					3800	.	.
	.. .. . & Others	R1					4270	.	.
	Salaries	S2					9689	2	6
	Traveling & Accommodation	T1					1703	13	8
	Expenses transferred								
	Interest due to bank	I6	8	10	9				
	Interest due A.O.F. Ltd	I5	9	13	9				
	To Miner Development	M1					18	4	6
	Being adjustment of over/under								
	for work done & costs - to 31/7/61								

1962

January 31	Survey fees Southport Blue Metal	85	350					
	Mt Isa Imprest MC	J.1	550					
	Office Expenses	O.2	60					
	Travelling & Entertainment	T.1	153	11	5			
	Pc by Cash	P.2	4	10	1			
	Bank fees	B.1	2	15				
	Electric Light Mt Isa	B.1	2	2	4			
	Tables Moggie Blue Metal	B.1	23	3	9			
	To Sale of Land Rover	M.2					230	
	- Mt Isa duplicating	B.1					20	
	Sale of Trailer	M.2					31	
	Drum and Drilling	D.3					1	16
	Sydney MC Adjustment	B.2					£63	6 7
	Description of Products Sydney Aug '61 - Jan '62							
	Entertainment: Travelling	T.1	7	10	9	1		
	Rent	R.1	290			1		
	Insurance/Boyle Mass	I.3	14	1	9	1		
	Salaries: Wages	S.2	192			1		
	Mine Development etc	M.1	85			1		
	Office Expenses	O.2	5			1		
	M. Expenses: Telephone 2/9-17/3	B.1	39	17	3	1		
	Exchange: Bank Fees	B.1	2	19	6	1		
	Travel Expenses	M.3		10		1		
	Advertising	B.1	5			1		
	Repairs: Maintenance	R.3	9	15		1		
	L.P.S. Fees	M.1	6	6		1		
	To Mt Isa Imprest of <sup>1562-17-2</sup> <sub>10-0-1</sub>	B.1					562	17 2
	- Mt Isa Imprest of <sup>1562-17-2</sup> <sub>10-0-1</sub>	S.3					25	3 1
	Being Australian Mt Isa Account payments 1/8/61 - 31/1/62	M.1						

1962									
Can	21	Mine Development %c	M.1	1,053	2	10			
		To Blue Metal Expenses	B.H				350		
		Exchange Bank Fee	E.1				6	4	2
		General Expenses	G.1				50	3	4
		Insurances	I.3				114	1	9
		Motor Expenses	M.3					10	
		Office Expenses	O.2				65		
		Petty Cash	P.2				4	10	1
		Rent	R.1				290		
		Repairs Maintenance	R.3				9	15	
		Salaries	S.2				132		
		Traveling Accommodation	T.1				161	2	2
		Being transfer 2/1/62							
		Mine Development %c	M.1	250					
		To Blue Metal option	B.3				150		
		Future option	F.7				250		
		Expenses option	E.2				250		
		Being transfer due to option as works being abandoned.							
		Mine Development %c	M.1	1,946	2	6			
		To Plant	P.H				1,946	2	6
		Being transfer as above.							
		Sundry Creditors	C.5	300					
		To Sundry Debtors	D.1				300		
		Being transfer: amount paid to J.E. Hodgway's account.							
		Diamond Drill Co.	D.3	1	16				
		To Mine Development %c	M.1				1	16	
		Being transfer 2/1/62							

January 1962

		Provision for Depreciation	85	220					
		Mine Development %	11.1	69					
		To Motor Vehicle	112				289		
		Being loss on sale of 2/10/61							
		Tractor 229 after depreciation to 31/7/61							
		only							
July	31	Suspense a/c	53	35	3	1			
		To Mine Development / Repaid Ins.	111				10	3	1
		(21/9/61)							
		Furniture Office Mt. Isa	5.5				25		
		(10/10/61)							
		Being deduction Mt. Isa Repairs							
		previously taken to Suspense a/c							
		Blue Metal Survey Fees	85	158	4	6			
		Lease Fees Acphelling	21	8	1				
		Tax Fee Green Books	27	10	10				
		To A credits	65				176	15	6
		Provision expense accounts							
		Palora Hilary St	26	1	10				
		To Lease fees	51				1	10	
		Mine Development (Agents Commission)	11.1	80					
		To Palora Hilary St	26				80		
		Adjustments on settlement							
		of Hilary St Property 5000 \$2575							
		Mine Development	11.1	285	2	6			
		To Palora Hilary St	26				285	2	6
		Loss on Sale written off							

1962

July 31	Mt Isa Electricity	51	26	10	10			
	Insurances	53	12	5	9			
	Rents	R1	360					
	Mt Isa Rates	51	71	11	4			
	Survey Fees Blue Metal	85	400	.	.			
	Jewellery & Entertainment	T.1	301	15	1			
	Telephone Mt Isa	51	35	16	11			
	Rents for Mt Isa	41	233	11	.			
X	Mine Development	M.1	391	18	4			
	Wages	52	197	19	2			
	Office Expenses	02	27	1	2			
	Local Tax & Rates Blue Metal	85	25	13	9			
	Legal Expenses	X.1	57	17	.			
	S. Crookes & L. Hutton	C.5	3000					
	A. Deben & S. Davis	C.5	1000					
	To Ripon Railways Aug	51					1	10
	.. Sale Blue Metal	85				3000		
	.. <sup>Aluminium</sup> Development A.O.G. Blue Metal	C.5				250		
	.. Payment for Diamond Drilling	A.3				500		
	.. Report P.M. 9.	51				21	11	17
	.. Report Diamond Drills	A.3				7		3
	.. Sale Railway St.	56				2496	10	
	.. Sydney Account Adjustment	02				1038	3	4
	Dissection Sydney Account							
	1/2/62 - 31/7/62							
	Blue Metal Expenses	85	1,416	1	9			
	To Mine Development	M.1				500		
	Blue Metal Report	84				1,180		
	Travelling Accom.	T.1				85	14	9
	Being transfer from Mine Dev. to							
	Blue Metal, Expenses, & - Total £2000							



July 1962

	Consulting Fee	67	166	13	4			
	To Provision for 4 1/2 Weeks Payable	68				166	13	4
X	Being 12 months fee @ £250 p.a. deducted from £500 p.a. as per invoice dated 13/2/62) L.R. Hudson = £250 less of provision of £53.16.8 - J.L. 31/7/61							
	Bank Fee	E.1		10				
	To Interest etc. lat. fee	J.1					10	
	Being Bank charge							
	Interest on Loan	J.H	1861	12	10			
	To Interest due a.o.t	J.S	<del>1723</del>	<del>12</del>	<del>11</del>	1861	12	10
	Being interest at 10% for 12 months to 31/7/62 on <del>£1723.16.9</del> £1861.8.0							
	Interest on Loan	J.H	1440	5	9			
	To Interest due Lacton Ltd.	J.L	<del>1440</del>	<del>5</del>	<del>9</del>	1440	5	9
	Being interest at 10% p.a. for 12 months to 31/7/62 on <del>£1440.17.12</del> £1440.18.0							
	Mine Development	M.1	1810	16	6			
	To Mine Development Future	M.5				1810	16	6
	Being transfer of all to action abandoned 6/12/61							
	Managers Fee	M.6	352	10				
	To Sundry creditors	C.5				352	10	
	Being charge of £7.10.0 per week as from 1/9/61 to 31/7/62 for cost of maintaining Sydney office. See minutes dated 13/1/62 - Exh. 16 to P.F.							

July 1962

Depreciation	AH	286	18	3			
To Depreciation Provision							
Furniture - Sydney office 5%	AS				14	5	1
Furniture Stanley St	AS				96	6	
Furniture Mt. Sea	AS				33	12	9
Motor Vehicles 20%	AS				70		
Office Machines 10%	AS				72	14	5
Being 12 months depreciation provision on Prime Cost Basis.							
Depreciation Provision	AS	2	19	6			
Less on Sale Mt. Sea Furniture	M1	1	15	6			
To Furniture Mt. Sea	AS				4	15	
Being loss on sale Mt. Sea balance as Mt. Sea. Depreciated value at 31/7/61 = £26.15.6 Purchase price = £29.15.6							
Share Dividends	M1	5579	14	5			
To Shareholding Fees	27				166	13	4
Depreciation	AH				286	18	3
Exchange Bank Fees	F1				1	15	
General Expenses	91				249	11	10
Inventories	AS				12	5	9
Interest on Loans	AH				3501	18	7
Income Tax Fees	27				10	10	
Legal Expenses	21				96	11	
Management Fee	M6				352	10	
Office Expenses	02				27	1	2
Rent	R1				360		
Salaries	AS				197	19	2
Travelling Accommodation	F1				216		4
Being share fees 31/7/62							

July 1962

X	Diamond Drill Expenses	AS	507	.	3			
	To Mine Development	MI				507	.	3
	Being transfer 21/7/62							
	Mine Development %	MI	60	.				
	To sundry credits	CS				60	.	
	Being provision for Audit Fee to 21/7/62							

January 1963

Interest on Loans	J.H.	820	2	11			
To Interest Due Factors Ltd.	J.L.				820	2	11
Being interest at 10% p.a. for 6 months to 31/1/63 on £16,402.18.0							
	(2)						
Interest on Loans	J.H.	980	16	5			
To Interest Due A.C.B.	J.S.				980	16	5
Being interest @ 10% for 6 months to 31/1/63 on £18,616.8:0							
	(3)						
Mine Development %	M.L.	1750	19	4			
To Interest on Loans	J.H.				1750	19	4
Being transfer as at 31/1/63							
Depreciation	J.H.	143	9	1			
To Provision for Depreciation							
Furniture - Sydney office 5% 90	J.S.				7	2	7
Furniture - Stanley rd	J.S.				148	3	
Furniture Mt. Isa	J.S.				16	16	12
Motor Vehicles 20% 20	J.S.				35		
Office Machines 10% 20	J.S.				36	7	2
Being 6 months depreciation provision on prime cost basis							
	(4)						
Mine Development	M.L.	143	9	1			
To Depreciation	J.H.				143	9	1
Being transfer 31/1/63							

July	1963	Telephone	S.I.	36	8	2			
		Petty Cash & Sundries	O.2	16	6	2			
		Maintenance: SALARY	S.2	147	5	7			
		OFFICE MAINT.	O.2	15	5	9			
		Rent Stone Shed	S.I.	182					
		Lease Fees	S.I.	15	12	9			
		Traveling & Board	Z.I.	11	13	.			
		Carriage	S.I.	260	.	.			
		Rates	S.I.	59	19	7			
		Legal Fees	Z.I.	15	19	.			
		Insurance	S.I.	7	13	11			
		Commission A Sales Slab	F.2	153	.	.			
		A Crea A G Palmer	S.I.	7	8	6			
		A Crea A O E	S.I.	250	.	.			
		.. Highway	S.I.	1700					
		.. E A Hudson	S.I.	1270					
		Consolidated Ins Co & A Hudson	S.I.	333	6	8			
		Consolidated Ins E A Hudson	S.I.	250	.	.			
		A Decca	S.I.	146	13	4			
		To Refud Insurance	S.I.				17	10	9
		Stone Slab	F.2				5982	15	1
		.. Stone Shed	M.1				200		
		Refud Clowery Sybil	S.I.				3	19	.
		Transit Mt Geo Refud	S.I.				9	3	4
		Refud Telephone Mt Geo	S.I.				3	13	5
		Department Sydney Refud	S.I.	1280	14	9			
		Describe of the Sydney							
		Car dock 12 units to 31/7/63							
		Management Fee	M.6	390	.	.			
		To S Curran	S.I.				390	.	.
		Being fee £7 10 0 for work							
		per done to A O E for							
		maintaining Sydney Refud							
		period 52 weeks 1/8/62-31/7/63							

July	balancing fees payable Harrison	L8	553	6	8			
	To Mine Development	M1				553	6	8
	Being reversal of fees accrued of 12/20/62; appointments never confirmed Annual J16							
	Office Expenses	O2	1	1				
	To Deposits/elec/blectricity	B2				1	1	
	Being amount charged when making refund/balancing elec							
	Indent on Loan	J4	820	2	11			
	To Indent due Factor Ltd.	J6				820	2	11
	Being 6 months indent to 31/7/63 @ 10% on £16,402.18.2							
	Indent on Loan	J4	930	16	5			
	To Indent due H.F.E.	J5				930	16	5
	Being 6 months indent to 31/7/63 @ 10% on £15,116.8.2							
	Legal fee.	L1	35	9				
	To Richard Propter Stanley D.	F2				35	9	
	Being legal fee on sale of property							
	Richard Propter Stanley D.	F2	18	4	1			
	To Annual Expenses/Rates	S1				18	4	1
	Being payment for adjustment of rates on sale of property							
	Appreciation Harrison	A5	552	1				
	To Insurance Ltd Loan	J4				552	1	
	To London Debentures	M2				245		
	Being interest of Harrison on sale of debentures							

To hold Treasury Lt. Sea	F2	1585	18	6			
To Finance Lt. Sea	F4				1585	18	6
Being furniture sold with property settlement 21/1/63.							
General Expenses Bank Ltd	G1	1	2	6			
To Imprest, Lt. Sea	J1				1	2	6
Being fees paid Lt. Sea							
Dr Debtors / ROE	A1	20					
To Deposits	A2				10		
To Petty Cash	P2				10		
Being accounts taken over by ROE as at 31/7/63							
Dr Debtors / ROE	A1	500					
To Finance Settlement Dept.	F3				110		
To Finance Lt. Sea	F5				350		
Office Expenses	O1				340		
Being furniture, fittings purchased by ROE as at 31/7/63							
Dr Debtors / ROE	A1	100					
To Motor Vehicles	M2				100		
Being proceeds of sale of Champion Corp paid to Credit ROE Bank Co							
Dr Debtors	A1	300					
To Mine Development	M1				300		
Being sale of Diamond Drill Equipment transferred to Dev. at July 1962							

July	31	Depreciation	A4	60	6	2		
		To Depreciation Provision	A5				60	6 2
		Being 6 months depreciation						
		Hydney of Furniture £7.2.6						
		St. Iva of Furniture £16.16.5						
		Office fixtures £36.7.3						
		Depreciation Provision	A5	482	8	10		
		To S. I. Sydney	A3				57	4
		St. I. St. Iva	A5				134	10 10
		Office fixtures	A1				290	17 5
		Being transfer						
		Prepayment	A1	33				
Reverse		To Rent of Store shed	R.1				33	
		Being prepayment of 12 weeks						
		rental at £2 per week (paid						
		to 22/11/45)						
		Creditors	A5	86	16			
		To Hire Development Co	A1				86	16
		Being adjustment:						
		£20 - S. I. Blue Metal £158.4.6 to be revised						
		£20 - " " £71.8.6 incorrectly						
		debited Creditors as not in part payment of						
		£158.4.6 (£20) should be Hire Development Co.						
		Hire Development	A1	4,009	19	3		
		To Freehold Property, St. I. Iva	A2				3703	10 11
		Furniture - Sydney	A3				118	3 9
		St. I. Iva	A5				188	4 7
		Being loss on Realisation Sale						
		of Freehold Property, Furniture						



July 1963

	Mine Development	M.1	3346	5	2			
✓	To bankelling fees	G.7				250		
	Depreciation	AH				60	6	3
	Exchange Bank fees	E1				1		
	General expenses	G.1				351	5	6
	Interest on Loans	JH				1750	19	4
	Local expenses	L.1				106	14	6
	Motor Vehicles / Loss on Sale	M2				5		
✓	Management fee	M6				390		
	Office Machines / Loss on Sale	O.1				96	13	9
	Office expenses	O.2				29	7	2
	Rent	R.1				149		
	Salaries	S.2				144	5	9
	Travelling	T.1				11	13	
	Being transfer 31/7/63							
	Insurance	J.3		9	16	10		
	To Mine Development	M1				9	16	10
	Being transfer 31/7/63							
	Mine Development	M1	60					
	To sundry credits	G5				60		
	Being provision for audit fees							
	1/2 31/7/63: Price Waterhouse £100							
	taxation fee banked books £60 24/6							
	1962-1963 £20							

MEMORANDUM OF AGREEMENT made this 20th day of January, One thousand nine hundred and fifty-nine BETWEEN AUSTRALASIAN OIL EXPLORATION LIMITED a Company duly incorporated under the Companies Act of Western Australia and whose registered office is situated at Perth in the said State of the first part and the share capital in which is held as to approximately Ninety per centum thereof by Mary Kathleen Investments Limited FACTORS LIMITED a Company duly incorporated under the Companies Act of Victoria and whose registered office is situated at 461 St. Kilda Road Melbourne of the second part AND FRANCIS ALFRED ROSS McBAIN of 422 Little Collins Street Melbourne in the State of Victoria Solicitor for and on behalf of a Company to be formed and known as QUEENSLAND MINES LTD. (hereinafter called "the Company") of the third part WHEREAS William Creeland, Patrick Anderson, Sydney Turner, Allan Nalan and George Nalan all of the State of Queensland (hereinafter called "the Anderson Syndicate") did in terms of the mining laws of the said State apply for and were granted mining leases in the Cloncurry Mt. Isa area more specifically described in Schedule One hereto AND WHEREAS by agreement dated the 24th day of May 1954 the said Anderson Syndicate granted to Australasian Oil Exploration Limited subject to the terms and conditions therein expressed an Option to Purchase all their right title and interest in the said Mineral Leases AND WHEREAS by various agreements made between the said Anderson Syndicate and Australasian Oil Exploration Limited the Option to Purchase contained in the said agreement of the 24th day of May 1954 was extended from time to time and by agreement dated the day of December 1958 the said Option to Purchase was in consideration of the sum of One thousand pounds (£1,000) extended until the 30th day of June 1959 AND WHEREAS Australasian Oil Exploration Limited made application for and was granted certain Mineral Leases

known as Mineral Leases Nos. 4316, 4317, 4318 and 4319 in the said Cloncurry Mt. Isa district in the State of Queensland adjoining the said Mineral Leases of the said Anderson Syndicate AND WHEREAS the said Mineral Leases so granted to Australasian Oil Exploration Limited are more specifically described in Schedule Two hereto and which together with the Mineral Leases described in Schedule One hereto are hereinafter described as the "Mining Area". AND WHEREAS Australasian Oil Exploration Limited has carried out prospecting diamond drilling and after development work on the said Mining Area and has established the existence of an Uranium bearing ore body thereon and has for some time past been seeking an economic method of treating same AND WHEREAS as a result of chemical research carried out by the University of Brisbane an economic method of extraction of Uranium Oxide from ore mined on the said Mining Area has been established and further testing of such treatment process is being undertaken AND WHEREAS negotiations have taken place between Australasian Oil Exploration Limited and Factors Limited with the object of bringing the said Mining Area into production and for the establishment of a treatment plant for the extraction of Uranium Oxide from ore mined therefrom NOW IT IS HEREBY MUTUALLY AGREED:

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1. Australasian Oil Exploration Limited and Factors Limited will jointly form a Company to be incorporated as early as possible after the date hereof at Canberra in the Australian Capital Territory to be known as Queensland Mines Ltd. or such other name as shall be approved by the parties hereto (hereinafter called "the Company") with a nominal capital of Three million pounds (£3,000,000) divided into 12,000,000 ordinary shares of five shillings

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each with the object of mining the said Mining Area and the extraction of Uranium Oxide from the ore so mined and with such other objects and with Articles of Association as are set out in a form of Memorandum and Articles of Association annexed hereto and marked with the letter "A".

2. Within one month after incorporation of the said Company:

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(a) (i) Australasian Oil Exploration Limited will in consideration for the allotment to it of 980,000 fully paid ordinary shares of five shillings (5/-) each in the capital of the Company subject to the obtaining of any necessary consent required by the mining laws of the State of Queensland transfer convey and assign to the Company all its right title and interest in the said Mineral Leases Nos. 4316, 4317, 4318 and 4319 as are more specifically described in Schedule Two hereto.

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(ii) Assign to the Company all its right title and interest in the hereinbefore recited agreement made with the Anderson Syndicate bearing date the 24th day of May 1954 and the day of December 1958.

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(b) Factors Limited shall apply for subject to the payment of one penny (1d.) a share on application 1,020,000 ordinary shares of five shillings (5/-) in the capital of the Company and such

shares shall be allocated to Factors Limited subject to such calls from time to time as will enable the Company to pay all costs charges and expenses incurred by it from time to time.

(c) The Company will:

- (i) Pay to Australasian Oil Exploration Limited or Factors Limited any monies paid by them since the 1st day of December 1958 as consideration for the extension of any Option to Purchase granted by the said Anderson Syndicate. 10
- (ii) Pay all costs charges and expenses in connection with its incorporation.
- (iii) Repay all monies expended by Australasian Oil Exploration Limited or Factors Limited as and from the date hereof in connection with further chemical investigations or checking the said treatment process development and all other expenses incurred in relation thereto and shall be responsible for all subsequent expenses in connection therewith. 20 30

3. The Company will:

- (a) Within three months from the date of the incorporation commence diamond drilling the said Mining Area and shall carry out such geological, metallurgical development and experimental work thereon for the purpose of determining the full extent of the ore body or other ore bodies

which might be on the said Mining Area.

- (b) Before the 30th day of June 1959 exercise the Option to Purchase granted by the said Anderson Syndicate in the herebefore recited Agreement of the 24th day of May 1954 and shall pay the consideration therefor namely the sum of Forty four thousand pounds (£44,000). 10

4. The Company shall make representation to the Atomic Energy Commission of Australia and/or the United Kingdom in an endeavour to obtain a contract or contracts for the sale of Uranium Oxide to a value of not less than Six million pounds (£6,000,000).

5. Upon the Company having made arrangements for a Sale Contract or Sale Contracts of Uranium Oxide produced from ore mined from the said Mining Area as provided in the preceding paragraph hereto, or any other Sale Contract with an appropriate authority, which is satisfactory to the parties hereto then Factors Limited shall ensure the provisions to the Company of such funds up to an amount of One million pounds as are necessary to bring into practical and economical production the Uranium deposits on the said Mining Area and the erection of a Treatment Plant for the treatment of Uranium ore and all other ancillary activities and such funds shall be provided: 20 30

- (a) By the payment (as and when the same is called up by the Board of the Company) of the balance unpaid on the 1,020,000 shares allotted to Factors Limited in the capital of the Company.
- (b) As to the balance of the said funds by way of loan or loans at interest not exceeding ten per centum per annum

(10%) from such lender or lenders as Factors Limited may decide and/or the taking up of such applicant or applicants as Factors Limited may decide of preference shares in the capital of the Company at a cumulative dividend not exceeding ten per centum per annum

PROVIDED ALWAYS that the issue of such shares shall not give the holder or holders thereof any voting powers or the right in a winding up to any more than a return of capital and arrears of dividends. 10

(c) Any such loan or any such preferential shares shall be repaid or redeemed within and over the period of the Sale Contract referred to in Clause 4 hereof so that payment of a liberal dividend policy can be maintained by the Company PROVIDED ALWAYS that excess profits after the payment of a dividend of One hundred per centum per annum on paid up capital may be applied in repayment of any loans or redemption of any shares. 20

6. Each of the parties hereto shall forthwith and from time to time do or cause to be done all such acts deeds matters and things as may be necessary to ensure the provisions of this agreement being carried into effect and shall execute any other document or agreement including any necessary alterations of the Articles of Association of the Company as shall be necessary to give effect thereto. 30

7. All profits arising from the sale of Uranium Oxide shall unless Australasian Oil Exploration Limited consents otherwise after making due allowance for repayment of loans, redemption of preferential shares, reasonable provision for

reserves, replacements, taxation and sinking fund requirements shall be distributed from year to year and shall not be utilised for the acquisition or carrying on of any other business or undertaking, other than the search for and production treatment and sale of uranium ore or uranium oxide.

8. During the period of six months immediately following the date hereof the Company shall not engage or employ any geologist, mining engineers, or other technical engineering or scientific personnel without first conferring thereon with Mary Kathleen Investments Limited but this restriction shall not apply to the appointment of Mr. Ridgway. 10

9. Neither Australasian Oil Exploration Limited nor Factors Limited shall transfer or assign shares in the Company allotted to them hereunder without the consent of the other but such consent shall not be unreasonably withheld if the proposed transferee or assignee enters into and executes an agreement on the same terms and conditions herein contained provided always that Australasian Oil Exploration Limited and/or Factors Limited may distribute its shares among its share holders at any time it thinks it desirable to do so. 20

10. This agreement shall be construed by and interpreted according to the laws of the Federal Capital Territory.

11. (a) Upon the acceptance of this agreement by the Company in such manner as to render the same binding on the Company the said Francis Alfred Ross McBain shall be discharged from all liability in respect thereto. 30

(b) If this agreement shall not be adopted by the Company in manner aforesaid before the 31st day of



March 1959 either of the parties  
hereto may by notice in writing  
to the other determine the same.

THE COMMON SEAL of AUSTRALASIAN  
OIL EXPLORATION LIMITED was  
hereunto affixed in the  
presence of two Directors  
and the Secretary.

)  
}  
}  
}

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R. Nicholl  
.....Director  
Secretary Fred H. Wilmot  
.....  
I. Redpath  
.....Director

THE COMMON SEAL of FACTORS  
LIMITED was hereunto affixed  
in the presence of two Directors  
and the Secretary

)  
}  
}

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I. Redpath  
.....Director  
Secretary W. Phillips  
.....  
D. Korman  
.....Director

SIGNED SEALED AND DELIVERED by  
FRANCIS ALFRED ROSS McBAIN in  
the presence of:

F.R. McBain

E. McBain  
Solicitor  
Melbourne

SCHEDULE NUMBER 1

State of Queensland

Mining District - Cloncurry

Mineral Lease No. 4234	Known as Battery
Mineral Lease No. 4236	Known as Coulter
Mineral Lease No. 4235	Known as Geiger
Ini- (Mineral Lease No. 4233	Known as Fathers Day
tials. (Mineral Lease No. 4320	Known as Stump

SCHEDULE NUMBER 2

State of Queensland

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Mining District - Cloncurry

Mineral Lease No. 4316	Known as Geiger No. 2
Mineral Lease No. 4317	Known as Geiger No. 3
Mineral Lease No. 4318	Known as Geiger No. 4
Mineral Lease No. 4319	Known as Geiger No. 5

MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND MINES  
LIMITED HELD AT THE OFFICE OF PHILLPOT MACPHILLAMY AND  
COMPANY OF NORTHERN AVENUE, CANBERRA. A.C.T. AT 10.00 A.M.  
ON FRIDAY 13TH FEBRUARY, 1959.

Q.5.

PRESENT:

Mr. I.K.Redpath  
Mr. E.R.Hudson  
Mr. O.J.Miller (Secretary)

IT WAS RESOLVED that the Company adopt the Agreement made between Australasian Oil Exploration Limited, Factors Limited, and Francis Alfred Ross McBain on behalf of the Company and dated 20th January, 1959.

An adopting agreement executed by Factors Limited and Mr.McBain was tendered to the meeting.

IT WAS RESOLVED that the agreement be executed by the Company and the Seal was accordingly affixed thereto.

Australasian Oil Exploration Limited tendered to the meeting a duly executed Transfer of Mineral Leases Nos. 4316, 4317 and 4319 and also a Deed of Assignment of its right, title and interest in and the option agreement made with the Anderson Syndicate dated 24th May, 1954, and agreement for extension of the option dated 27th November, 1954.

IT WAS RESOLVED that the said Transfer and Deed of Assignment be executed by the Company and the Seal of the Company was duly affixed thereto.

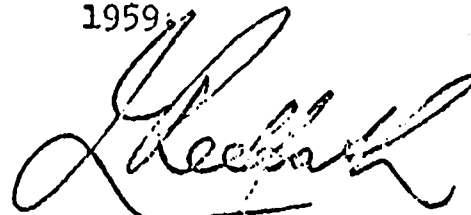
Australasian Oil Exploration Limited tendered to the Company a Search of the respective Leases by Messrs. Tully and Wilson, Solicitors of Brisbane.

IT WAS RESOLVED that for the time being a share register be maintained by the Company at its Melbourne Office, and a copy of such register be forwarded to Messrs. Phillipot MacPhillamy to hold on behalf of the Company at Canberra.

1 IT WAS RESOLVED that Mr. O.J. Miller be appointed Secretary of the Company in Canberra.

SIGNED AS A CORRECT RECORD

THIS 24<sup>th</sup> DAY OF June  
1959.



CHAIRMAN

Exhibit 1 - Minutes of  
Meeting of Plaintiff -  
853. 13th February, 1959

MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND  
MINES LIMITED HELD AT "STANHILL", 34 QUEENS ROAD,  
MELBOURNE, ON WEDNESDAY THE 1ST DAY OF APRIL, 1959  
AT 4.00. P.M.

PRESENT:

Mr. I.K.Redpath (Chairman)  
Mr. D. Korman (Director)  
Mr. B. Mackenzie (Secretary)

SEAL OF THE COMPANY:

It was resolved that the Seal of the Company be affixed to a Form of Appointment of Agent whereby the Company appoints John Ridgeway of Brisbane to act as its agent to make application for prospecting areas, mineral claims and/or leases, under the Mining Acts of Queensland.

SIGNED AS A CORRECT RECORD

THIS 24<sup>th</sup> DAY OF June  
1959.

  
CHAIRMAN.

MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND MINES LIMITED  
HELD AT 34 QUEENS ROAD, MELBOURNE ON TUESDAY 21ST APRIL, 1959.

Q.7.

DIRECTORS PRESENT:

Mr. I.K.Redpath (Chairman)  
Mr. E.R.Hudson  
Mr. D. Korman.

IN ATTENDANCE:

Mr. F.R.McBain  
Mr. E.E.Fookes  
Mr. J.C.Carrodus  
Mr. W.D.Phillips (Secretary)

BALANCE DATE:

It was resolved that the balance date of the Company be 31st July in each year and it was further agreed that a General Meeting be held in September, 1959, on a date to be determined.

AUDITORS:

It was resolved that Price Waterhouse and Company, Chartered Accountants of William Street, Melbourne be appointed Auditors of the Company.

ACCOUNTS:

It was agreed that all accounts be paid from Melbourne, and that all accounts be approved by Mr. Hudson from the Sydney office prior to payment.

It was further agreed that an account be opened at the Head Office of the Bank of New South Wales in Sydney to be operated by Mr. Hudson. This account to be kept on the impressed system to an amount of £500.

The principal bank of the Company is to be with the Bank of New South Wales, St. Kilda Road, Melbourne.

APPOINTMENT OF AGENTS:

It was resolved that the following be appointed the Company's Agents in the various capital cities:

Sydney - Ernest Roy Hudson  
Brisbane - John McGregor Florence  
Melbourne - William Deryck Phillips.

It was resolved that the Seal of the Company be affixed to the Memorandum of appointment of John McGregor Florence as agent for the Company in Queensland.

ATTESTING AFFIXING OF SEAL.

Resolved that pursuant to Article 126 Mr. W.D.Phillips be appointed Secretary to attest the affixing of the Seal of the Company to all documents requiring the Seal of the Company including Share Certificates.

FINANCIAL ADVISOR:

Resolved that Mr. E.E.Fookes be appointed financial advisor to the Company.

ISSUE OF SHARES:

It was resolved that in pursuance of the terms of the Contract dated 20th January, 1959 Australasian Oil Exploration Limited would be allotted 980,000 fully paid ordinary shares of 5/-d. each and that certificate therefor be forwarded to Australasian Oil Exploration Limited as early as convenient.

Application was received from Factors Limited for 1,020,000 ordinary shares of 5/-d. each.

It was resolved that such application be received and that such number of shares be allotted to Factors Limited subject to payment of a penny per share on application and Allotment, and at such calls the balance and for such amounts as the Directors shall from time to time determine.

CALLS ON SHARES:

It was resolved that a call be made of sixpence per share on the 1,020,000 shares issued to Factors Limited.

SKAL LEASE:


It was resolved that an amount of £10,000 be forwarded to Messrs. Tully and Wilson of 62 Creek Street, Brisbane to enable them to complete the purchase of the Skal Lease.

LAND ROVER:

It was resolved that Mr. Hudson be instructed to negotiate the purchase of a Land Rover Motor Vehicle for use at Mt. Isa.

SIGNED AS A CORRECT RECORD

THIS 24<sup>th</sup> DAY OF June  
1959.

  
CHAIRMAN.

MINUTES OF A MEETING OF DIRECTORS OF  
QUEENSLAND MINES LIMITED HELD AT 461  
ST. WILSON ROAD, BENTONVILLE ON MONDAY  
OCTOBER 5TH, 1959.

DIRECTORS PRESENT:

Mr. I.K.Redpath (Chairman)  
and Mr. D.Korman.

The Secretary was in attendance.

CALL ON SHARES:

It was resolved that the following calls  
be made on 1,020,000 shares issued to Factors Limited.

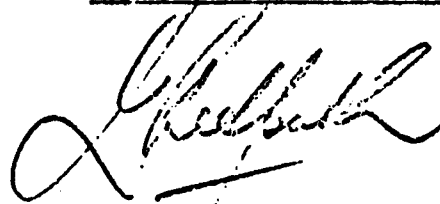
2d. per share on 5/10/59  
3d. per share on 17/11/59  
2d. per share on 18/12/59

HILARY STREET. MT. ISA.

It was resolved to purchase from Australasian  
Oil Exploration Limited the house at Hilary Street, Mt. Isa,  
covered by the Mine's Homestead Perpetual Lease No. 3902.

The purchase price to be £2,500 which amount  
is to be treated as a further loan to the Company by Australasian  
Oil Exploration Limited.

READ AND CONFIRMED



CHAIRMAN

/ 15/1/60

MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND  
MINES LIMITED HELD AT 761 ST. KILDA ROAD, MANTOURNE  
ON MONDAY 14TH MARCH, 1960.

DIRECTORS PRESENT:

Mr. I. K. Redpath (Chairman) and  
Mr. D. Korman.

The Secretary was in attendance.

CALLS ON SHARES:

It was resolved that the following calls  
be made on the 1,020,000 ordinary shares issued to Factors  
Limited:

2d. per share on 15/3/60  
1d. per share on 22/4/60  
1d. per share on 16/5/60  
3d. per share on 15/6/60  
2d. per share on 22/7/60

READ AND CONFIRMED



CHAIRMAN

✓ 24/7/60



MINUTES OF A MEETING OF DIRECTORS OF  
QUEENSLAND MILLS LIMITED HELD AT 461.  
ST. MILDAS ROAD, NEBOURNE ON FRIDAY  
29TH JULY, 1960.

PRESENT: Messrs: I.K.Redpath (Chairman)  
E.R.Hudson.

The Secretary was in attendance.

MINUTES: Minutes of Meetings of Directors held on January 15th and March 14th last were read and confirmed and signed by the Chairman as a true and correct record.

CALLS ON SHARES:

It was resolved that the following calls be made on 1,020,000 shares issued to Factors Limited

ld. per share on 26/8/60  
ld. per share on 6/10/60

READ AND CONFIRMED



CHAIRMAN

1/12/60

MINUTES OF A MEETING OF DIRECTORS OF  
QUEENSLAND MINES LIMITED HELD AT 461  
ST. KILDA ROAD MELBOURNE ON TUESDAY  
1ST DECEMBER, 1960.

PRESENT: Messrs. I. K. Redpath (Chairman)  
E. R. Hudson

The Secretary was in attendance.

MINUTES: Minutes of a meeting of Directors held on July 29th last were read and confirmed and signed by the Chairman as a true and correct record.

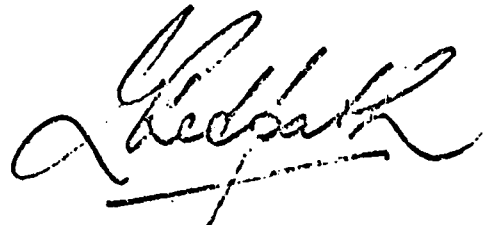
CALL ON SHARES:

It was resolved that a call of 1d. per share on the 1,020,000 shares issued to Factors Limited be made on 23/12/60.

CHIEF GEOLOGIST:

It was resolved that the contract of Mr. J. E. Ridgway as Chief Geologist be terminated as at the 31st December next and that Mr. Ridgway be paid a lump sum retiring allowance of £3,000.

READ AND CONFIRMED

  
CHAIRMAN  
22/12/60

MINUTES OF A MEETING OF DIRECTORS OF  
QUEENSLAND MINES LIMITED HELD AT 461  
ST. KILDA ROAD, MELBOURNE ON TUESDAY  
22ND DECEMBER, 1960.

PRESENT: Messrs. I. K. Redpath (Chairman)  
E. R. Hudson  
D. Korman

The Secretary was in attendance.

MINUTES:

Minutes of a meeting of Directors held on December 1st last were read and confirmed and signed by the Chairman as a true and correct record.

CONSULTANT:

It was resolved that Mr. J. E. Ridgway be appointed as a consultant to the Company commencing 1st January 1961 at a salary of £1,000 per annum.

READ AND CONFIRMED



CHAIRMAN

1/3/61

MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND  
MINES LIMITED, HELD AT 461 ST. KILDA ROAD, MELBOURNE  
ON MONDAY 20TH MARCH, 1961.

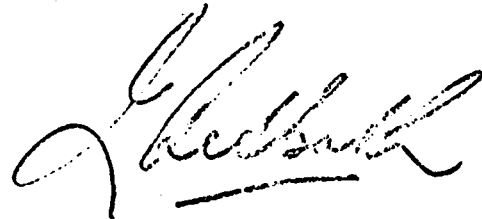
PRESENT: Messrs. I. K. Redpath (Chairman)  
Mr. D. Korman

The Secretary was in attendance.

CALL ON SHARES:

It was resolved to make a call of 1d.  
per share on the 1,020,000 shares issued to Factors  
Limited on 23/3/61.

READ AND CONFIRMED



CHAIRMAN

27/4/61

DIRECTORS PRESENT :

Mr. V. T. Gladstones ( in the Chair)      and  
Mr. E. R. Hudson.

MINERS HOMESTEAD PERPETUAL LEASE NO. 3224. :

Mr Hudson reported that he had received an offer  
of £6,000. for the above property and furnishings therein.

It was resolved that this offer be accepted.

CANBERRA SECRETARY :

It was resolved that in order to fulfil the  
requirements of the New Companies Ordinance, Mr. Neil Mowbray  
Macphillamy of 59 Mugga Way, Red Hill, A.C.T. be appointed the  
resident secretary of the Company.

READ      AND      CONFIRMED



CHAIRMAN.

17/8/63

DIRECTORS PRESENT :

Messrs. V. T. Gladstones (in the Chair) and  
E. R. Hudson.

The Secretary was also in attendance.

STANLEY STREET PROPERTY :

It was resolved that the Agreement for sale  
of the Stanley Street Leasehold be signed  
and sealed with the Common Seal of the  
Company.

READ      AND      CONFIRMED

*V. T. Gladstones*

CHAIRMAN

17.12/62

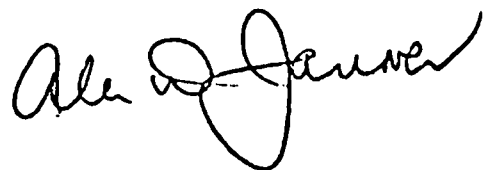
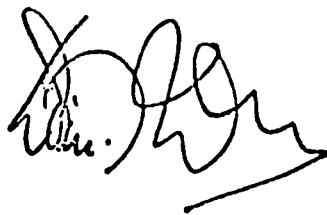
PRESENT : MR. D. KORMAN  
Mr E. R. HUDSON ( by 'phone)  
Mr. A.W. JANOVER  
MR. W. D. PHILLIPS

The Secretary 'phoned Mr. Hudson who agreed because of the urgency, to hold this Meeting by 'phone, and he agreed to the passing of the following Resolutions.

1. RESOLVED THAT pursuant to Article 100 of the Articles of Association of the Company that Mr. Alec Wolfe Janover be appointed Alternate Director for Mr. S. Korman.
2. RESOLVED THAT the Common Seal of the Company be affixed to the Agreement whereby Factors Ltd. sells its shares in Queensland Mines Ltd. to Kathleen Investments Australia Ltd. and whereby mutual releases be given by and to Queensland Mines Ltd. and Factors Ltd, Australasian Oil Exploration Ltd. and Kathleen Investments Australia Ltd.
3. RESOLVED THAT the Company will on presentation to it of properly signed transfers of the shares referred to in the Agreement mentioned in the previous resolution register those transfers.

SIGNED AS A CORRECT RECORD.

WE, DAVID KORMAN and ALEC WOLFE JANOVER being two of the Directors present at a Meeting held on 12th May, 1964, hereby confirm the foregoing Minutes as a correct record.



MINUTES OF A MEETING OF DIRECTORS OF QUEENSLAND MINES LIMITED HELD AT 541 ST. KILDA ROAD, MELBOURNE, ON FRIDAY, 22nd. MAY, 1964.

PRESENT: Mr. David Korman  
Mr. A.W. Janover.

A letter dated the 18th May, 1964 was produced from Mr. E.R. Hudson, Director, consenting to the two Melbourne Directors holding a meeting of Queensland Mines Limited without further notice other than the letter of the 14th May, 1964, to appoint such new Directors as Kathleen Investments (Australia) Ltd. shall nominate, and to accept the resignations of Mr. D. Korman, Mr. S. Korman and his Alternate, Mr. A.W. Janover, and the resignation of Mr. W.D. Phillips as one of the Secretaries. 10

The following Resolutions were then passed :-

- (1) That the following persons nominated by Kathleen Investments (Australia) Ltd. be appointed additional Directors of the Company :- 20

Sir John Northcott  
John Evan Roberts  
Jack Ridgway

The consents by each of the above named to act as Directors having been obtained for filing with the records of the Company.

- (2) Resolved that the following Share Transfers be approved and that the Secretary be instructed to issue new Share Certificates to the Purchaser in respect thereof 30

(a) A transfer of 1,020,000 Ordinary Shares paid to 4/4 each, numbered 980008 to 2,000,007 (both inclusive) from Factors Limited to Kathleen Investments (Australia) Limited.

(b) and the following fully paid Ordinary Shares of 5/- from the following transferors to Kathleen Investment (Australia) Ltd.

Ernest Roy Hudson	- One Share	No. 1.	40
Ian Kenneth Redpath	One Share	No. 2.	
David Korman	One Share	No. 3.	
William Deryck Phillips	- Four Shares		
	No. 4 - No. 7	(both inclusive)	

Exhibit 1 - Minutes of Meeting of Plaintiff - 22nd May, 1964



- (3) That upon the conclusion of this Meeting the resignations of the following Directors, which are hereby tabled, be accepted to operate on and from the 23rd. day of May, 1964.

Mr. Stanley, Korman, Mr. David Korman, and the resignation of Mr. W.D. Phillips as one of the Secretaries.

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SIGNED AS A CORRECT RECORD

WE, DAVID KORMAN and ALEC WOLFE JANOVER being the two Directors present at a Meeting held on 22nd. May, 1964 hereby confirm the foregoing Minutes as a correct record.

David Korman      Alec W Janover

MINUTES OF A MEETING OF DIRECTORS OF FACTORS LIMITED  
HELD AT 461 ST. KILDA ROAD MELBOURNE ON WEDNESDAY  
APRIL 15, 1959.

A.31

DIRECTORS PRESENT:

Mr. W.O. Burt (In the Chair)  
Messrs. C.R. Daley, I.K. Redpath, D. Korman  
L. Korman and E.E. Fookes.

Mr. J.C. Carrodus and the Secretary were  
in attendance.

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MINUTES:

Minutes of meetings of Directors held on  
January 16, February 25 and April 2 last were read  
by the Directors and signed by the Chairman as a  
true and correct record.

LEAVE OF ABSENCE:

The Board granted leave of absence to Mr. E.J.K.  
Thompson for a period of three months or until such  
earlier date on which he may be able to resume his  
duties.

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In granting the leave of absence the Directors  
expressed the wish that Mr. Thompson should have a  
full and speedy recovery.

AGREEMENT WITH MR. I.K. REDPATH:

Discussion took place on the matter of a re-  
tiring allowance for Mr. Redpath as mentioned in the  
Minutes of the Company of December 17, 1958 (Folio  
A20/Refer.)

It was agreed that in view of the age of  
Mr. Redpath a retiring allowance was impracticable  
and in consequence it was decided that the salary  
of Mr. I.K. Redpath be at the rate of £6,150 per  
annum for a period of 5 years as from the 1st day  
of January, 1959.

30

It was also agreed that Mr. I.K. Redpath be  
paid an annual entertainment and travelling allow-  
ance of £600 Australian currency for the period of  
said agreement. This is in lieu of the allowance  
mentioned in the Minutes shown on Folio A20.

HOLEPROOF INDUSTRIES LIMITED:

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The Secretary reported that acceptances had  
been received for 99.4% of the Holeproof Industries  
Limited Shares and that the Solicitors in New

Zealand were taking the necessary steps to acquire the 3,885 shares for which no acceptances have been received.

It was resolved that a general authority be given to allot the shares of this Company in exchange for the Holeproof Industries Limited Shares as and when required on the authorities to be received from Messrs. Barr, Burgess & Stewart. 10

On the acceptances received to date this would require the allotment of 3,719,370 Shares.

CHANGE OF FINANCIAL YEAR:

It was resolved that the financial year of the Company should be changed to end on the 31st July each year instead of the 30th June as at present.

W.O.B.

A.32

QUEENSLAND MINES LIMITED:

20

Mr. Redpath gave a detailed report on the activities of this company to date and it was agreed that discussion should be held over until the next meeting when Mr. S. Korman would be present.

REPORT ON BANK OVERDRAFT:

Mr. Redpath reported that several conferences have been held with the Manager of the Bank of New Zealand with the result that the £800,000 overdraft limit is now effective until the 30th June next.

An application has been made to the Bank of New Zealand for an overdraft limit of £1,000,000 to be effective from the 1st July, 1959. Approval has been obtained from the Central Bank and the recommendation has now been forwarded to the Head Office of the Bank of New Zealand. 30

ROCKMAN'S SHOWROOMS LIMITED:

Mr. Redpath reported that indications were that the improvement shown by this Company in the first half of the financial year should be maintained in the second half. 40

The Company had embarked on an expansion

program which includes the following:-

- (A) Development of new areas
- (B) Enlargement and improvement of some stores.
- (C) Extension of the Budget Credit System
- (D) Introduction of Electrical and Household appliances.

FACTORS OF NEW ZEALAND LIMITED:

10

Mr. Redpath reported that due to Capital Issues difficulties in New Zealand it was thought that an association with a large Life Assurance office would help overcome the problems. A conference had been held with the Colonial Mutual Life but after several weeks they had declined participation.

A conference is now being arranged with the Temperance and General Society with a view to taking an interest in the new company.

HOPKINS STREET PROPERTY:

20

The Secretary reported that an offer of £17,750 Cash had been received from Emmanuel Car Sales Pty Ltd., but it now seemed that this Company was unable to obtain the funds.

Mr. Margolin had now requested this Company to assist him in obtaining the amount of £10,000 he required.

It was agreed that this Company would request W.J. Harper Pty Ltd., of Ascot Vale to value the property to endeavour to obtain the finance from the City Mutual Life Assurance Society Ltd.

30

KAYS' AUTO LEASE:

Mr. Carrodus reported that in view of the fact that it was now necessary to pay stamp duty in respect of each contract, the present charge was not sufficient.

The Board instructed Mr. Carrodus to advise Mr. Katranski that in future the rate would have to be increased to show a return equal to that obtained by the Company on other business.

40

W.O.B.

A.33

MR. COULSTON'S REPORT:

Mr. Coulston reported that due to the Easter Holidays and the change over from Hopkins Street to North Melbourne, Sales of repossessions had been curtailed. The total number of units on hand being 89, a reduction of 15 during the month.

10

Mr. Coulston suggested that in view of the small turnover in motor vehicle finance consideration should be given to relinquishing this type of business completely.

It was agreed to defer any action in this regard until after Mr. Carrodus had finalised matters with Kays' Auto Lease.

PROVISION FOR FURTHER FIRE PROOF ROOM:

Mr. Carrodus reported that due to the additional Share Registers now being handled, further fire proof storage space was required.

20

The Board accepted the tender of £270 from Morisons' Pty Ltd., to convert a room to meet the requirements.

LEASING CONTRACTS:

A schedule of Leasing agreements under files numbered 4/2, 80/2, 183/10, 183/11, 269, 270 and 311 was tabled and approved by the Directors. The total value of the goods leased under these agreements amounted to £33,885.

30

TRANSACTIONS:

Schedules of transactions for the months of February, 1959 totalling £23,405.15.0 and March, 1959, totalling £29,385.16.1. were tabled and noted.

SCRIP:

The Secretary reported that Scrip for 89890 Ordinary Shares covering transfers numbered 2100 - 2361 and for 33318 Registered unsecured Notes covering transfers numbered 375 - 541 had been duly signed and sealed with the common seal of the Company.

40

CHEQUES:

Payments covering cheques numbered 37642 -  
37969 totalling £538,444.10.6. were confirmed.

OVERDRAFT:

It was noted that the Net Cash Book Overdraft  
was £803,669. 6. 3.

READ AND CONFIRMED

10

W.O. Burt

CHAIRMAN

25/4/59

24th April, 1959

Mr. I. Redpath,  
Stanhill Pty. Ltd.,  
34 Queens Road,  
MELBOURNE. Vic.

Dear Mr. Redpath,

NEW ZEALAND IRON SANDS

The following documents are enclosed herewith:

1. Letter to be sent to the Minister of Mines setting out proposals for preliminary investigation and development of N.Z. Iron Sand resources. Schedule showing prospecting areas required is also attached. 10
2. Copy of above letter and schedule to be sent to the Minister of Industries and Commerce.
3. Covering letter to the Minister of Industries and Commerce.
4. Copies of the above documents for your files.
5. Photostat of editorial contained in the latest issue of the "Mining Journal" published in England. 20

As the prospecting areas required are well known to the Government and could be adequately described in schedule form, I did not consider the preparation of plans necessary at this stage.

My report on the New Zealand visit is now being typed in final form, and will be forwarded to you in due course.

Yours sincerely,

AGP.

30

24th April, 1959

The Hon. F. Hackett,  
Minister for Mines,  
Parliament Buildings,  
WELLINGTON. New Zealand.

Dear Mr. Hackett,

NEW ZEALAND IRON SANDS

I refer to my recent discussions and correspondence with you in connection with N.Z. iron sand resources, and wish to advise that, following receipt of my report, my Principals have decided as follows: 10

1. My Principals seek an interview with the Prime Minister yourself and the Minister for Industries and Commerce during the first week in June;
2. Subject to obtaining satisfactory guarantees to the issue to the Company of exclusive prospecting rights covering the areas set out in the attached schedule, a company known as "New Zealand Iron and Steel Investigations Pty. Ltd." will be formed immediately with cash resources of £N.Z.250,000; 20
3. Within two months from the formation of the Company, suitable offices and administration will be established and qualified personnel progressively appointed to carry out a detailed investigation extending over a period of approximately two years with a view to setting up an iron and steel industry in New Zealand; 30
4. Providing commercial production is warranted, an operating company will be formed before or on completion of the investigations with an initial working capital of £N.Z.10,000,000 for the purpose of producing a ferrous product for local use and export;
5. Within five years from the formation of the operating company, capitalisation will be increased from £N.Z.10,000,000 to £N.Z.32,000,000 to permit the production of steel ingots and finished products. Production of titanium and vanadium by-products may also be undertaken. 40

It is anticipated that during the proposed two-year programme of investigation, the following

Exhibit 83 - Enclosure  
to Letter to  
874. I. Redpath, 24.4.59



expenditure will be required:-

Personnel	£70,000	
Plant & Equipment	35,000	
Drilling	75,000	
Metallurgical testing, including freight on bulk samples	10,000	10
Fees payable to overseas experts	10,000	
Travelling expenses	10,000	
Administration	15,000	
Expenses in acquiring and maintaining exclusive prospecting titles and contingencies	<u>25,000</u>	
<u>TOTAL EXPENDITURE:</u>	<u>£250,000</u>	

-2-

20

The purpose of the investigation would be to obtain all the data necessary for an accurate assessment of the economics involved in setting up a steel industry in New Zealand. Besides the determination of mineral reserves, the field unit would closely examine processes, sources of power, coal and other raw materials, labour, freights and New Zealand costs and conditions generally.

In order to determine the most practicable method of exploitation, detailed economic studies will be carried out during the course of the investigation covering various processes, including by-product production methods, plant locations, production rates, and raw materials. 30

During the proposed interview my Principals would like to discuss the question of capitalisation as outlined above, particularly in regard to the Government's requirements as to the extent of New Zealand participation in the enterprise. At such interview they will also satisfy your Government as to their financial ability to establish a steel industry in New Zealand, if commercial production is warranted. 40

My Principals would also like to determine the extent to which the Government would be prepared to assist in the development of a steel industry. Of first interest would be the extent of

Exhibit 83 - Enclosure  
to Letter to  
I. Redpath, 24.4.59

Government assistance in regard to assays, minerals  
and metallurgical testing, and drilling required  
during the preliminary investigations.

A copy of this letter has been sent to the  
Minister of Industries and Commerce in view of pre-  
vious discussions within his Department during my  
recent visit to New Zealand.

10

An early reply would be greatly appreciated.

Yours faithfully,

(A.G. Palmer)

ENCL.

Exhibit 83 - Enclosure  
to Letter to  
876. I. Redpath, 24.4.59

S C H E D U L E

N.Z. IRON SAND DEPOSITS

EXCLUSIVE PROSPECTING AREAS

REQUIRED BY

NEW ZEALAND IRON & STEEL INVESTIGATIONS PTY. LTD.

<u>DEPOSITS</u>	<u>APPROXIMATE LOCATION</u>	<u>AREA REQUIRED ACRES</u>	
<u>NORTH ISLAND:</u>			
Wanganui	Coastline between Wanganui and Nukumaru	10,000	10
Patea	Coastline between Nukumaru and Hawera	10,000	
New Plymouth	Coastline between New Plymouth and Waitara	5,000	
Marakopa	Area located at mouth of Marakopa River	2,000	
Lake Taharoa	Area lying immediately south of Kawhia Harbour	10,000	
Kawhia	Area lying immediately north of Kawhia Harbour	10,000	20
Aotea	Area lying immediately north of Aotea Harbour	2,000	
Raglan	Area immediately north of Raglan Harbour	2,000	
Waikato	Area located at mouth of Waikato River	5,000	
Manukau	Coastline extending 25 miles north from Manukau Harbour entrance	10,000	30
<u>TOTAL AREA REQUIRED IN NORTH ISLAND -</u>		<u>66,000</u>	
<u>SOUTH ISLAND:</u>			
Greymouth	Coastline between Ross and Greymouth	10,000	

Exhibit 83 - Enclosure  
to Letter to

877. I. Redpath, 24.4.59

Exhibit 83 - Enclosure  
to Letter to  
I. Redpath, 24.4.59

Westport	Coastline between Greymouth and Westport	10,000
Karamea	Coastline between Te Namu and Oparara	<u>10,000</u>
	<u>TOTAL AREA REQUIRED IN SOUTH ISLAND -</u>	<u>30,000</u>

AGP.

10

24th April, 1959

The Hon. P.N. Holloway,  
Minister for Industries and Commerce,  
Parliament Buildings,  
WELLINGTON. NEW ZEALAND.

Dear Sir,

NEW ZEALAND IRON SANDS

For your information, I am enclosing a copy  
of a letter sent to the Minister for Mines, in  
connection with the proposed development of New  
Zealand Iron Sand resources.

10

Yours faithfully,

(A.G. Palmer)

Encl.

PRELIMINARY REPORT

TO

E. R. HUDSON, ESQ.

ON

NEW ZEALAND IRON SAND RESOURCES

A.G. PALMER, B.E., A.M. AUS. I.M.M.

PRELIMINARY REPORT

TO

E. R. HUDSON, ESQ.

ON

10

NEW ZEALAND IRON SAND RESOURCES

A. G. PALMER

April, 1959

880. Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

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\* \* \* \*

INTRODUCTION

This report is the result of a preliminary study to assess the potential of New Zealand iron sand resources which was carried out under the instructions of E. R. Hudson, Esq., 16 O'Connell St., Sydney, N.S.W.

The study and conclusions reached in this report have been based on information collected by the writer in New Zealand between 24th February and 7th March this year. Sources of information included personal interviews in Wellington with senior Government executives and technical officers, reports, papers, and other technical material. 10

In view of the very preliminary nature of the investigations and the fact that substantial tonnages of iron-bearing sands are known to exist along the New Zealand west coast, it was not considered necessary to examine any of the actual deposits at this juncture. 20

In conclusion it is desired to place on record the friendly co-operation of the various government officers interviewed. Their help and guidance was of the utmost value and is gratefully appreciated.

Unless otherwise stated, estimates of costs, etc. in this report are given in terms of New Zealand currency. 30

SUMMARY

IRON SAND DEPOSITS:

1. New Zealand iron sand deposits are situated along the west coasts of the North and South Islands.
2. The principal minerals of economic interest comprise titanomagnetite containing approximately 58% iron, 8% titanium dioxide and 0.3% vanadium pentoxide and ilmenite containing about 36% iron, 44% titanium dioxide and 0.1% vanadium pentoxide. 40
3. Titanomagnetite deposits are restricted to the North Island. Ilmenite deposits occur in the



Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

South Island and also associated with certain titanomagnetite deposits in the North Island.

4. In addition to iron and steel, titanomagnetite and ilmenite are potential sources of titanium and vanadium by-products.
5. Due to the absence of any detailed and systematic investigation in the past, current estimates of mineral reserves can only be classed as prospective reserves. 10
6. Present estimates of reserves in long tons stand as follows:

	<u>Titanomagnetite</u>	<u>Ilmenite</u>
North Island	597,900,000	8,600,000
South Island	-	43,500,000
	597,900,000	52,100,000

7. Concentration of titanomagnetite in the parent sand varies from 5% to 65% with an average of about 20%. Ilmenite deposits appear to be of much lower grade, averaging perhaps 5-6% ilmenite in the parent sand. 20
8. On present information, individual deposits of most interest are located in the North Island at Lake Taharoa and between Muriwai Beach and Manukau Heads. Although somewhat remote, the Lake Taharoa deposits appear to be the largest and richest in New Zealand. The Muriwai deposits, though much smaller, are located only 30 miles or so from Auckland. 30

-2-

9. Prospective reserves in the above two areas stand as follows:

	<u>Titanomagnetite</u>		<u>Ilmenite</u>		
	<u>Long Tons</u>	<u>Concentration in virgin sand</u>	<u>Long Tons</u>	<u>Concentration in virgin sand</u>	
Lake Taharoa	170,000,000	40%	-	-	40
Muriwai-Manukau	24,000,000	20%	8,600,000	8%	

10. An annual production of 350,000 tons of iron and steel for 25 years would require approximately 18,000,000 tons of titanomagnetite.
11. The N.Z. iron sand deposits would be amenable to low-cost mining and concentration methods.

OTHER RAW MATERIALS:

1. New Zealand has ample reserves of coal suitable for the manufacture of iron by electric smelting or direct reduction processes, and for steel-making purposes. Reserves in long tons stand as follows: 10

	<u>Measured</u>	<u>Indicated</u>	<u>Inferred</u>	<u>TOTAL</u>
Bituminous	40,000,000	33,000,000	51,500,000	124,500,000
Sub-bituminous	106,200,000	126,100,000	307,500,000	539,800,000
Lignite	16,300,000	42,000,000	310,000,000	368,300,000
	<hr/>	<hr/>	<hr/>	<hr/>
	162,500,000	201,100,000	669,000,000	1032,600,000
	<hr/>	<hr/>	<hr/>	<hr/>

2. Large deposits of limestone and silica, required for use as fluxes, exist on both Islands. Known reserves of dolomite and magnesite, required for refractory purposes are concentrated in the north-west Nelson district of the South Island and appear to be adequate. 20

POWER RESOURCES:

1. Present power resources of the N.Z. Electricity Department would be insufficient for electric smelting purposes, unless either plant capacity was very small, or pre-heating and pre-reduction techniques, prior to smelting, were adopted. 30
2. After 1965, sufficient power would probably be available to support a small electric smelter and steel plant with a capacity of about 150,000 tons/year. The plant would probably have to be located in the South Island, unless the North and South Island systems were interconnected by submarine cable.
3. To be economic for electric smelting purposes, power costs would probably need to be less than 0.5 pence per kilowatt-hour as against a probable cost of at least 0.75 pence per K.W.H. For this reason alone, electric smelting methods based on power generated by public utilities do not 40

appear to be very attractive, unless, of course, the Government could be induced to subsidize the cost of power.

4. Economic electric smelting might be possible on a large-scale by adopting the Dusky Sound scheme in the extreme South. Preliminary estimates indicate the following capital costs for a plant located at Invercargill producing 1,000,000 tons of steel products/year - 10

	£
Hydro-electric installation and transmission to Invercargill ...	35,000,000
Iron and steel plant ...	<u>80,000,000</u>
	<u>£115,000,000</u>

5. For production of iron by processes other than electric methods, the power position is more promising. When present additions to plant in

-3-

20

both Islands are completed in the near future, the supply systems should be able to support an iron and steel plant of moderate capacity, incorporating direct reduction methods.

PROCESSES:

1. Methods which have been either attempted or proposed include smelting in blast furnaces, electric smelting and direct reduction methods.
2. Metallurgical difficulties associated with the blast furnace smelting of the finely divided, highly titaniferous iron sands, were largely responsible for the failure of past attempts to establish a steel industry in New Zealand. 30
3. Although titaniferous iron sands are amenable to electric smelting, inadequacy of power supply and/or cost of power generated by public utilities may prevent the use of electrical methods to smelt N.Z. iron sands.
4. Numerous direct reduction processes are being actively developed overseas. These processes require comparatively small amounts of power and are able to treat a wide variety of difficult ore 40

types including finely divided titaniferous iron ores. Prospects for successfully exploiting the iron sands by direct reduction methods seem most favourable.

5. At this stage, the R-N process, developed by the Republic Steel Corporation and National Lead Company of America, appear to be the most promising of the direct reduction processes as a means of treating N.Z. iron sands. The iron product is of high purity and can be charged directly into open hearth or electric steel furnaces. 10

ECONOMICS:

1. Due to the impossibility of obtaining any precise information at this stage, the estimates given below should only be regarded as an approximate guide to the costs involved in setting up a steel industry in New Zealand. The estimates were made on the following main assumptions: 20

Location of Plant:	Auckland	
Ore Source:	Muriwai deposits	
Processes:	R-N process and electric refining methods.	
Production rate:	350,000 tons of the simpler types of finished steel products per year.	30

2. Estimated capital costs are as follows:

		£	
(a) Plant & Installations:			
Ore Production plant		670,000	
R-N plant and char production		9,417,000	
Steel furnaces & rolling mills		12,200,000	
Electrical installations		710,000	
Water Supply		350,000	
Roads		340,000	40
Rail Facilities		1,000,000	
Housing & Amenities		1,994,000	
(b) Expenses of company formation		2,000,000	
		<u>28,681,000</u>	
(c) Contingencies		2,868,000	
		<u>£31,549,000</u>	
Total Capital costs, say		<u>£32,000,000</u>	

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3. Total production costs have been estimated as follows:

Product	Output tons	Operating cost/ton of products	Investment cost/ton of product	Total Pro- duction cost/ton of product	Value of similar products imported N.Z. in 1958 cost/ton	
		£	£	£	£	
Ore	700,000	1.1				
Sponge iron	350,000	11.5				
Ingot steel	350,000	20				
Blooms	350,000	24				
Slabs		26				
Medium Sections	80,000	29	16	45	43	20
Merchant bar & wire rod	110,000	31	16	47	43	
Sheets	100,000	34	16	50	67	
Wire	60,000	43	16	59	54	

4. The cost study indicates that metal production plant should be located as near as possible to both ore and coal sources.

PRELIMINARY INVESTIGATION:

1. A preliminary investigation programme to assess the economics of establishing a steel industry in New Zealand would include: 30

- (a) Exploration by drilling to determine mineral reserves;
- (b) Study of processes, power, including power from atomic energy and gas turbines, sources of raw materials, N.Z. costs and conditions generally;
- (c) Negotiations to determine the extent of Government participation and assistance towards establishing a steel industry. 40
- (d) Economic studies.

2. The duration and costs of a programme to evaluate N.Z. iron sand resources will be largely influenced by the extent of Government aid given during the course of the investigations. Assuming that Government aid is restricted to assays and the testing of samples, and that duration of the programme is 2 years, costs would be of the following order:

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

Personnel	£75,000
Equipment	30,000
Drilling	75,000
Miscellaneous	70,000
	<hr/>
	£250,000
	<hr/>

3. Prior to the commencement of any investigations either the principal deposits should be secured under exclusive prospecting titles, or official assurance given that such titles would be granted. 10
4. Initial applications for exclusive prospecting rights should cover the following areas in the North Island:
  - (a) Muriwai Beach to Munukau Heads;
  - (b) Lake Taharoa.
5. The most practicable form of prospecting title under the N.Z. Mining Act is the Mineral Prospecting Warrant. The maximum area that can be taken up under each warrant is 10,000 acres. The holder of any M.P.W. has the exclusive right to prospect on the subject land for minerals specified in the warrant, other than gold. 20

RECENT ACTIVITY:

1. Last year, the Government set up an Iron and Steel Committee to examine ways and means of establishing a steel industry. The Committee's initial report is to be released in the near future. 30

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2. Organisations which have shown interest in N.Z. iron sands include:

Fletcher Holdings Ltd.  
N.Z. Development Corporation Ltd.  
Industrial Metals Ltd. of Wellington  
Colville Ltd. of Glasgow.  
Stewarts & Lloyds Ltd.  
The Kaiser Steel interests.  
National Lend Company of America. 40
3. The most active concerns are Fletcher Holdings and N.Z. Development Corporation. Both companies

have applied for prospecting rights at Lake Taharoa. In addition, the N.Z. Development Corporation has applied for ground at Westport.

4. Fletcher Holdings Ltd. proposes to construct a steel scrap mill at Auckland with an initial capacity of 50,000 tons of merchant bar products/year. 10
5. The N.Z. Development Corporation proposes to carry out preliminary investigations with a view to establishing a steel plant at Dunedin. This company has not yet issued a prospectus or obtained the capital necessary to carry out its aims.

INTERVIEWS:

From discussions with the Minister for Mines and other Government executives it appears that:

1. The Government is very keen to have a steel industry established; 20
2. The Government itself may wish to hold an interest in the enterprise;
3. It is fairly definite that the Government would require New Zealand interests to retain effective control of the industry when established;
4. The technical resources of the Department of Scientific & Industrial Research would probably be made available for assay and minerals testing purposes; 30
5. The Government may finance the cost of the exploratory drilling required to test the various deposits-including coal and other raw materials;
6. Regarding current applications for prospecting rights over iron sand deposits by the N.Z. Development Corporation and others, the Government is in no way committed to the granting of such applications.

N.Z. STEEL CONSUMPTION

40

N.Z. steel consumption has increased by nearly 65% over the last 10 years. Current consumption is about 350,000 tons/year.

C O N C L U S I O N S

The greatest obstacle to the development of a steel industry in New Zealand has been the inability to find an economic method of producing iron from the finely-divided and titaniferous iron sands. Once this problem has been solved, the subsequent refining and finishing processes could be carried out without difficulty in conventional steel-making plant. 10

It is considered that prospects for the successful exploitation of New Zealand iron sands have now reached a very favourable stage for the following reasons:-

1. Consumption of iron and steel in New Zealand is increasing and has now reached sufficient proportions to support a modest steel industry.
2. New direct reduction techniques being actively developed overseas are capable of treating a wide range of difficult ore types. As an economic means of treating N.Z. iron sands, these processes seem most promising, not only to produce steel furnace feed, but also enriched slags or cinders suitable for manufacture of valuable titanium and vanadium by-products. 20

-6-

These factors, coupled with the large and conveniently situated sources of raw material, would more than justify a preliminary investigation and economic study with a view to establishing a steel industry such as outlined in this report. 30

As a first step, it is therefore recommended that an approach be made to the New Zealand Government to determine matters of immediate interest such as acquisition of areas under prospecting title, or mining concession, the extent of Government aid and participation, and Government requirements in regard to capitalisation. 40

\* \* \* \*



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I N T E R V I E W S

The various aspects and problems involved in the development of N.Z. iron sand resources were discussed with senior government executives and technical personnel. In all cases, the various officials interviewed were friendly, co-operative, and wherever possible, freely supplied the information requested. These interviewed included: 10

WELLINGTON: The Hon. F. Hackett, Minister for Mines  
G.H. Datson, Executive Officer, Research  
& Development Section, Department of  
Industries & Commerce.  
P.C. Outhwaite, Assistant Under-  
Secretary for Mines.  
E.C. Higgins, Administrative Officer,  
Dept. of Mines. 20  
E.B. Mackenzie, Asst. Chief Electrical  
Engineer, N.Z. Electricity Department.  
R.A. Simpson, Marine Engineer, Ministry  
of Works.  
T. Marshall, Senior Metallurgist,  
Dominion Laboratory, D.S.I.R.  
D.S. Nicholson, Senior Minerals Engineer,  
Dominion Laboratory, D.S.I.R.

AUCKLAND: N.T. Leman, Manager, Mason Bros. Mesco  
Ltd., G.P.O. Box 3485, Auckland. 30

Note: Mason Bros. Mesco Ltd. are the N.Z.  
representatives of Republic Steel  
Corporation, makers of plant for the  
R-N Reduction Process discussed later  
in this report. (Also see correspondence  
at end of this report).

GOVERNMENT PARTICIPATION:

The Minister and the more senior officers interviewed were not in a position to give me any definite information regarding the degree of Government participation regarding the development of an iron and steel industry. However, the position regarding Government participation appears to stand as follows: 40

1. \*The Government is very keen to have a steel industry established;

2. \*It is fairly definite that the Government would require New Zealand interests to retain effective control of the industry when established;
3. The Government itself may wish to hold an interest in the enterprise;
4. The technical resources of the Department of Scientific and Industrial Research would probably be made available in regard to assays, separation and metallurgical tests. 10
5. The Government may finance the cost of the exploratory drilling required to test the various deposits, including those containing coal and other raw materials.

\* See correspondence at back of this report.

R E C E N T      A C T I V I T Y

Accounts of the various attempts to exploit the N.Z. iron sand deposits, dating back to 1848, are fully dealt with in a number of references listed at the end of this report. Principal reasons for failure of past attempts included under-capitalisation and technical difficulties resulting from the finely divided nature and high titanium content of the iron sands. 20

In 1949, electric smelting tests were carried out by the Government at Onekaka on a small scale. The tests indicated that titanomagnetites could be smelted by electric methods to give pig irons suitable for steel making and that commercial production was possible. The tests were under the supervision of F.C. Collin of Elektrokompisk A/S, Oslo, Norway, makers of Tysland Hole electric smelting furnaces, and Professor R.P. Lemoine of John Miles & Partners Ltd., consultants to the then N.Z. Iron & Steel Commission. 30

More recently, in 1956/7, the possibility of exploiting iron sands was investigated by Fletcher Holdings Ltd. in association with the Kaiser Steel interests. The outcome of this investigation is not known by the writer. 40

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Later, in 1957, it was announced that a company, known as the New Zealand Development Corporation Ltd. intended to commence a preliminary investigation into

prospects for establishing an iron and steel industry at Dunedin. This company has not yet issued a prospectus or obtained the capital necessary to carry out its plans.

In July, 1958, the Prime Minister announced that an iron and steel committee (since formed), was to be set up to examine the feasibility of establishing a steel industry using West Coast iron sands. Two proposals were to be examined, namely: 10

1. The establishment of a steel industry at Dunedin at an initial cost of £25,000,000;
2. The establishment of a plant at Auckland at a cost of more than £50,000,000.

Later, in 1958, it was reported that Fletcher Holdings Ltd. in association with Colville Ltd., Glasgow, Stewards & Lloyds Ltd, and Industrial Metals Ltd. of Wellington, planned to build a scrap mill in Auckland at a cost of £2,500,000. It is understood that the plant will have an initial capacity of 40,000 to 50,000 tons of merchant bar products per year, and an ultimate capacity of 120,000 tons per year. 20

About a year ago, two representatives of the National Lead Company of America, Messrs. G. Wiles and P.W. Newman, visited New Zealand and made preliminary inquiries in regard to the iron sands. The extent of this company's interest in the deposits is not known. The R-N direct reduction process for treating iron ores, discussed later in this report, was developed jointly by National Lead and Republic Steel Corporation of America. 30

#### THE IRON AND STEEL COMMITTEE

The Iron & Steel Committee has been set up with the Department of Industries & Commerce to examine ways and means of establishing a steel industry. The Committee's initial report has been completed and will be released in the near future. Members of the Committee are as follows: 40

Dr. W.B. Sutch (Chairman)	Dept. of Industries & Commerce
*G.H. Datson (Secretary)	do
J.P. Lewin	do
C.W.O. Turner	Ministry of Works
*R.A. Simpson	do

C.H. Benny	Department of Mines	
*E.C. Higgins	do	
W.A. Joiner	D.S.I.R.	
*T. Marshall	"	
A.B. Taylor	Treasury Department	
S. Greenberg	do	
*E.B. Mackenzie	Electricity Department	10
M.S. Woods	Department of Labour	

\* Members interviewed.

CURRENT PROSPECTING APPLICATIONS

At present there are two principal applicants for prospecting titles covering N.Z. iron sands, namely, Fletcher Holdings and the N.Z. Development Corporation. Minor applications have also been lodged by other parties.

The main areas under application are situated at Lake Taharoa in the North Island and at Westport in the South Island. Deposits at Lake Taharoa are the subjects of applications for Mineral Prospecting Warrants, covering several thousand acres lodged by Fletcher Holdings and the N.Z. Development Corporation. The Westport deposits are the subject of an application for Mineral Prospecting Warrant covering about 5,000 acres lodged by the N.Z. Development Corporation. 20

During interviews with the more senior officials, it was stressed that the Government was in no way committed to the granting of any of the above applications. 30

N.Z. per capita consumption now roughly 350 lbs per annum c/f Australia 700 lbs and U.S.A. 1700 lbs. (1959)

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T A B L E 1.

N.Z. IMPORTS OF IRON AND STEEL

	(TONS)			
	1938	1950	1957	
Pig Iron, filings, grains, powder and sponge	8312	14298	5642	40
Primary forms	9064	4736	449	
Steel bars, rods, bolts & sections	55364	49472	95301	

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

Channels, girders, angles and tees	19030	23983	23553	
Steel plate	19578	27761	46052	
Iron plate	30484	27326	60634	
Rails, points and crossings	29907	19443	31523	
Hoop, strip and box strappings	2533	3593	5311	10
Wire	32802	31418	41540	
Tubes, pipes and fittings	17702	11982	28301	
<b>T O T A L S:</b>				
	224776	214012	338306	

Imports of Tinsplate, not included in the above figures, totalled 21,634 tons in 1957.

The higher total in 1938 as compared with 1950, probably reflects the big development in public works and local industries which began about the middle thirties. Present consumption of iron and steel in N.Z. is about 350,000 tons per year. 20

IRON SAND DEPOSITS

LOCATION:

Titaniferous iron sands are abundant along sections of the west coasts of both islands of New Zealand. In the North Island, the deposits are distributed along 350 miles of coastline between Whangaehu and Muriwai, whilst in the South Island they extend some 300 miles between Jackson's Head and Karamea.

The iron sands occur in beach and dune deposits along the existing shore line, and also in ancient beaches and dunes, now situated well above sea level. These latter deposits extend inland for distances up to three miles or so and, in some cases, occur beneath farming land. 30

Most of the North Island deposits are fairly accessible. In the South Island many of the deposits are in remote coastal districts and relatively inaccessible. The largest known concentration of iron sands occurs at Lake Taharoa in the North Island. This area lies immediately south of Kawhia Harbour and some 150 miles by road from Auckland. Present access to this area is poor. 40

FORMATION OF THE DEPOSITS:

Formation of the iron sand deposits has involved five processes, viz.,

1. Erosion of source rocks containing iron ore minerals;
2. Transportation of erosion products to the sea by creeks and rivers, including some initial concentration in stream beds; 10
3. Formation of beach deposits and concentration of the iron minerals by currents and waves;
4. Formation of dune deposits by the action of winds on beach deposits;
5. Retreat of the shore line and formation of further beach deposits.

The New Zealand iron sands were originally derived from source rocks containing small amounts of titanomagnetite and/or ilmenite. These minerals are resistant to weathering and have relatively high specific gravities compared 20

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with the other mineral constituents of the source rock. The mountainous nature of the country, high rainfall and resulting rapid erosion have released large tonnages of this iron-bearing material from the parent rocks.

Following disintegration of the source rocks, the erosion products have been transported seawards by creeks and rivers. Specific gravity differences have caused the heavier minerals to lag behind the lighter minerals during their passage downstream. This differential movement between the heavier and lighter constituents have enabled the iron-bearing minerals to form low-grade iron sand deposits in stream beds. 30

Detrital material reaching the sea has been subjected to wave action and littoral drift along the shoreline. Differential movement between the heavier and lighter minerals along the shore has produced iron sand concentrations along beaches. 40

Waves have a very effective concentrating action and beach deposits are often of very high grade.

In many instances beach deposits have been eroded away by wind and reconcentrated as low grade dune deposits. Later, uplift of the land and retreat of the shoreline has resulted in the elevation of existing deposits above present sea level and the formation of further beach and dune deposits along the shore line. This is the reason why some of the deposits extend so far inland. 10

MINERAL COMPOSITION:

The principal iron ore minerals occurring in the west coast deposits are titanomagnetite and ilmenite. Deposits containing titanomagnetite as the only ore mineral occur in the North Island between Whangaehu and Waikato heads. Deposits containing both titanomagnetite and ilmenite occur between Manukau heads and Muriwai. On present knowledge, titanomagnetite and ilmenite are the only minerals of economic interest in the North Island deposits. 20

The South Island iron sands consist largely of ilmenite with minor amounts of magnetite, titanomagnetite being apparently absent. Other minerals also occurring in these deposits which may be of commercial interest include zircon, rutile, monazite, thorite, garnet (abundant) and gold.

T A B L E 2. 30

ANALYSES OF NEW ZEALAND & FOREIGN ILMENITES

	1	2	3	4	5	6	7	8
TiO <sub>2</sub>	42.5	45.0	44.3	42.5	60.3	43.9	51.2	44
Ti (equivalent)	25.5	27.0	26.6	25.5	36.2	26.4	30.7	
FeO	31.4	38.5	36.7	31.1	9.7	36.0	NA	
Fe <sub>2</sub> O <sub>3</sub>	22.1	4.5	4.4	20.7	24.8	11.1	NA	
Fe (equivalent)	39.9	33.1	31.6	38.7	24.9	35.7	32.2	36
SiO <sub>2</sub>	0.8	4.9	3.2	0.88	1.4	3.28	NA	40
Al <sub>2</sub> O <sub>3</sub>	0.5	2.6	0.19	1.05	1.0	0.85	NA	
P <sub>2</sub> O <sub>5</sub>	ND	0.4	0.07	Tr	0.17	0.12	NA	

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

MgO	1.3	0.4	0.80	2.0	0.65	3.69	NA
MnO	0.8	2.0	0.35	0.04	0.40	0.33	NA
CaO	0.35	1.1	1.0	0.10	0.15	0.18	NA
V <sub>2</sub> O <sub>5</sub>	0.15	Tr.	0.24	0.36	0.26	0.20	0.21
Cr <sub>2</sub> O <sub>3</sub>	0.02	Tr.	0.001	0.15	0.14	0.03	2.50

NA = Not available    N.D. = Not determined. Tr. = trace.  
 1. Manakau Heads N.I.    5. Quilon, India.    10  
 2. Cape Foulwind, S.I.    6. Norway  
 3. New York State    7. Cudgon, N.S.W.  
 4. Canada    8. Grade adopted for reserves.

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T A B L E    3

ANALYSES OF NEW ZEALAND

TITANOMAGNETITES.

	1	2	3	4	
TiO <sub>2</sub>	7.74	7.87	8.57	8	20
FeO	31.1	31.9	29.46		
Fe <sub>2</sub> O <sub>3</sub>	51.6	51.5	49.74		
Fe (equivalent)	60.4	60.8	57.7	58	
Al <sub>2</sub> O <sub>3</sub>	3.1	3.3	2.49		
SiO <sub>2</sub>	0.01	0.01	2.95		
MgO	2.8	3.2	2.81		
MnO	0.71	0.71	0.71		
CaO	0.52	0.37	0.17		
P <sub>2</sub> O <sub>5</sub>	ND	ND	0.50		
V <sub>2</sub> O <sub>5</sub>	0.57	0.55	0.47		30
Cr <sub>2</sub> O <sub>3</sub>	0.023	0.017	0.03		



ND = Not determined

1. Pat a
2. Lake Taharoa } Highly purified concentrates
3. New Plymouth Magnetic concentrate
4. Grade adopted for reserves.

RESERVES:

10

Due to the absence of any detailed and systematic investigation in the past, no reliable estimates of reserves are available. Previous work, mainly confined to the North Island, has been limited to reconnaissance surveys and a little shallow drilling to depths up to 30 feet by hand methods.

In view of the largely superficial nature of previous investigations, present reserves can only be classed as prospective or inferred reserves, and at best, can only be taken as a rough guide to the grade and tonnages of the iron sands.

20

Despite the absence of reliable information, there is little doubt that large tonnages of iron sands occur along the west coast of the North Island, and it seems safe to assume at this juncture that sufficient ore exists to support a steel industry, at least to satisfy New Zealand's requirements.

Present estimates of reserves stand as shown in Table 4.

TABLE 4

<u>LOCALITY</u>	<u>RESERVES OF IRON SANDS</u>								
	<u>TITANOMAGNETITE</u>			<u>ILMENITE</u>					
	LONG TONS	%Fe	%Fe <sub>2</sub> O <sub>3</sub>	%TITANOMAGNETITE IN VIRGIN SAND	LONG TONS	%Fe	%TiO <sub>2</sub>	%ILMENITE IN VIRGIN SAND	BASES OF ESTIMATION
<u>NORTH ISLAND</u>									
Whangaehu	3,500,000	58	8	5					S
Wanganui	23,000,000	58	8	16					S
Patea	14,500,000	58	8	30					S + D (?)
New Plymouth	8,200,000	58	8	27					S
Mokau River	3,000,000	58	8	30					S + D (3)
Awakino River	4,000,000	58	8	65					S + D (2)
Marakopa	26,000,000	58	8	50					S + D (4)
Lake Taharoa	170,000,000	58	8	40					S + D (6)
Kawhia	121,000,000	58	8	6					S + D (10)
Aotea	25,000,000	58	8	5					S + D (3)
Raglan	87,000,000	58	8	18					S + D (3)
Waikato Heads	89,000,000	58	8	7					S + D (3)
Manukau Heads	5,300,000	58	8	25	1,400,000	36	44	8	S + D (3)
Piha	800,000	58	8	24	200,000	36	44	6	S + D (5)
Muriwai Beach	17,600,000	58	8	20	7,000,000	36	44	8	S + D (14)
<u>TOTAL RESERVES</u>									
<u>IN NORTH ISLAND</u>	597,900,000	58	8	20	8,600,000	36	44	8	

900.  
Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

SOUTH ISLAND

Haast River	3,100,000	36	44	S	S
Bruce Bay	1,100,000	36	44	S	S
Hunt's Beach	2,100,000	36	44	S	S
Gillespie's Beach	1,500,000	36	44	S	S
Okarito	3,500,000	36	44	S	S
Poarua River	2,200,000	36	44	S	S
Ross Beach		36	44	S	S
Mahinapua	7,900,000	36	44	S	S
Hokitika River		36	44	S	S
Kapitea Creek	7,200,000	36	44	S	S
Barrytown	4,000,000	36	44	S	S
Westport	4,600,000	36	44	S	S + D (19)
Karamea	6,300,000	36	44	S	S
<u>TOTAL RESERVES IN SOUTH ISLAND</u>		43,500,000	36	44	5

Basis of Estimation:

S = Reconnaissance survey

D( ) = Drilling with number of bores sunk shown in brackets.

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ACCESS TO THE DEPOSITS:

Access by Sea: Generally the west coast harbours are exposed, shallow and subject to excessive silting, due to the abundant sand fed into the sea by rivers and its subsequent distribution along the coastline by waves and strong offshore currents. 10

Construction and maintenance costs of a deep water port built under these conditions would probably preclude the sea as a means of access, unless of course operations were to be conducted on a very large scale.

The Government is at present expending several hundred thousand pounds in the construction of improved port facilities at Bluff near Invercargill in the extreme South. The port is remote from the principal iron sand deposits and would only warrant consideration as a centre of operations if large-scale electric smelting was contemplated. 20

The Ministry of Works has made preliminary estimates of costs involved in constructing a deep water port at Albatross Point near Lake Taharoa. Cost involved would be of the order of several million pounds.

Access by Rail: In the North Island, deposits between Whangaehu and New Plymouth are near to rail. Deposits north of New Plymouth and south of Manukau are less accessible. Rail connections to these areas would involve the construction of roughly 50-80 miles of line. Deposits north of Manukau are more favourably located. 30

In the South Island, deposits between Ross and Greymouth and between Westport and Waimarie are near to rail access. There are no rail connections along the coast between Greymouth and Westport or south of Ross.

Standard gauge in N.Z. is 3 feet 6 inches. Standard rails for heavy track main lines weigh 91 lbs. per yard and for secondary and branch lines 72 lb. per yard. The varied nature of the geographical features of the country results in great disparity in construction costs for individual sections of lines. 40

Rail construction costs in the less rugged areas would probably have an approximate range of £20,000-£40,000 per mile, depending on the terrain and length of line.

Road Access: In the North Island, deposits between Whangaehu and New Plymouth are within a few miles of a main highway. Deposits between Awakino and Waikato are not so favourably situated and exploitation in these areas would involve considerable road work. Deposits north of Waikaito have somewhat better road access. 10

In the South Island, most of the deposits north of Ross are situated within three miles of existing roads. South of Ross, most of the deposits are located in remote coastal areas having poor access.

Like the railways, for geographical reasons the cost of road construction varies greatly for individual 20 sections. Approximate construction costs for Class II highways under average conditions given by Mr. R.A. Simpson are as follows:

Sealed           £13,300 per mile  
Unsealed       £ 9,400 per mile

Load classification for N.Z. roads is shown in the following table:

T A B L E 5

<u>Load Classification</u>		<u>Maximum Axle Weights in Tons</u>				30
		Single Axle	Multi Axle	Tandem Axle	Gross Max.	
Class I.	Highways	8	7	6	30	
Class II.	Highways	6½	6	5	23	
Class III.	Highways	5	5	3½	16	

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Choice of Access: The most economic method of access would be determined by the scale of operations, terrain and the location of the iron sand deposits with respect to existing roads, railways, power lines and coal mines. 40

For a large operation involving the production of at least one million tons of steel per year, the question of access by sea, as well as road and rail,

would have to be considered. The high construction and maintenance costs of port facilities would probably render sea access uneconomic for smaller scale operations, so that the choice would lie between rail or road.

GENERAL DISCUSSION OF THE DEPOSITS:

As far as can be determined at present, the most important iron sand deposits are located in the North Island. Deposits in the South Island appear to be relatively small, and low in grade, whilst their exploitation would involve much greater transport difficulties. 10

The deposits, tentatively listed in order of importance, are as follows:-

North Island: Lake Taharoa  
Muriwai Beach and adjacent areas  
Marakopa River 20  
Deposits between Whangaehu and  
New Plymouth  
Deposits between Kawhia and  
Waikato Heads  
Mokau and Awakino

South Island: Deposits between Ross and Westport  
Karamea and adjacent areas  
Deposits south of Ross

Lake Taharoa: Beach and dune deposits at Lake Taharoa, estimated to contain 170 million tons of titanomagnetite in concentrations of 40% mineral in the virgin sand, appear to be the most extensive yet discovered in New Zealand. The deposits occur on poor quality Maori land immediately south of Kawhia Harbour. Present access is via Class III and IV roads and tracks. Road distance from Auckland is about 150 miles. 30

The principal deposits are the subjects of applications for Mineral Prospecting Warrants covering 3,500 acres lodged by the New Zealand Development Corporation Ltd. and Fletcher interests. As a result of their applications the Government is in process of ceding the land to the Crown for mining purposes. The Maoris are not expected to oppose this move. 40

Apart from plant, housing and amenities, and

water supply, major items of capital expenditure in establishing a steelworks at Lake Taharoa would be -

1. Installation of port facilities, and/or Construction of roughly 60-80 miles of railway line, and/or Construction of approximately 40-60 miles of sealed road of at least Class II standard. 10
2. Erection of roughly 60 miles of transmission line with a minimum rating of 220 K.V.

Muriwai Beach and adjacent areas: These deposits, which include Manukau, Piha and Muriwai Beach, are situated immediately north of Manukau Heads. Reserves total 23,700,000 tons of titanomagnetite and 8,600,000 tons of ilmenite, the respective concentrations of these minerals in the virgin sand being 21% and 8%. 20  
As far as is known these deposits are the only ones in the North Island containing ilmenite.

The deposits in these areas are important because of their accessibility and proximity to Auckland - factors which should permit exploitation at comparatively low capital and operating costs. An added incentive for the development of these deposits is the ilmenite content which may become of value in the event of the production of titanium by-products.

Although reserves are small in comparison with those of Lake Taharoa, sufficient ore may exist to support steel production on a modest scale. 30

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For example, a production of 350,000 tons of steel per year for 25 years would require approximately 18,000,000 tons of titanomagnetite, as compared with total prospective reserves now standing at nearly 24,000,000 tons of titanomagnetite.

In tonnage and ease of access, the Muriwai iron sands are the most important in this group. The deposits, estimated to contain 17,600,000 tons of titanomagnetite and 7,000,000 tons of ilmenite, occur on partially afforested areas some 30 miles by road from Auckland and about 8 miles from rail. Exploitation of the Muriwai deposits would involve the expense of reafforestation. 40

Next in importance are the Manukau deposits located immediately north of the north head of Manukau harbour and estimated to contain 5,300,000 tons of titanomagnetite and 1,400,000 tons of ilmenite. The deposits occur on marginal land located about 25 miles by road from Auckland and 15 miles from nearest rail.

10

The Piha deposits, containing only 1,000,000 tons of titanomagnetite and ilmenite are of very little economic interest. In any event, the area is fast developing as a seaside resort and it is doubtful whether mining operations would ever be permitted.

Marakopa River: The Marakopa deposits are estimated to contain 26,000,000 tons of titanomagnetite in high-grade concentrations in beaches and dunes. The deposits are located at the mouth of the Marakopa River some 10 miles south of the Lake Taharoa deposits.

20

The area is at present accessible by Class III road. The deposits occur on the Marokopa native reserve. The N.Z. Mining Act contains provisions for the opening up of native reserves for mining purposes.

Deposits between Whangaehu and New Plymouth:

Deposits throughout this area are close to good road and rail access and are generally within a few miles of a 110 K.V. transmission line. In the majority of cases, grade is on the low side, whilst tonnage of titanomagnetite available is relatively small. Many of the deposits occur on good farming land and their exploitation would involve the expenses of resoiling and regrassing.

30

Present information suggests that the most important deposits occur at Patea, where surveys and drilling have indicated medium grade beach and dune deposits containing 14,500,000 tons of titanomagnetite.

40

Deposits between Kawhia and Waikato Heads: Although reported to contain an aggregate of 320,000,000 tons of titanomagnetite, deposits in these areas are apparently low in grade and not of any immediate economic interest.

The Raglan Harbour deposits, estimated to contain 87,000,000 tons of titanomagnetite in concentrations



of 16% in the virgin sand, appear to be the best in the group. This area is accessible by road.

Mokau and Awakino: Deposits at the mouths of the Awakino and Mokau Rivers are not attractive because of their small titanomagnetite content of 7,000,000 tons.

South Island Deposits: Previous investigations indicate that reserves of iron and titanium in the South Island are much smaller than those of the North Island. 10

The ilmenite deposits of the South appear to be small, scattered, low-grade and, in many instances, inaccessible. These factors, coupled with the relatively low iron content of the ilmenites, make these deposits a less attractive source of iron and titanium by-product than those of the North Island.

The most favourably located deposits are those lying between Ross and Westport, with an aggregate tonnage of about 24,000,000 tons of ilmenite. Deposits between Ross and Greymouth have good road and rail access, whilst those between Greymouth and Westport have only road access. Port facilities capable of accommodating ships up to 3,000 tons exist at Greymouth and Westport. 20

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The New Zealand Development Corporation Ltd. has lodged an application for Mineral Prospecting Warrants covering 5,000 acres of iron sands in the Westport area. 30

Next in importance are the Karamea areas containing 6,300,000 tons of ilmenite. The deposits occur five to seven miles south of Karamea River and have good road access.

Deposits south of Ross occur in remote coastal districts and are very inaccessible. It has been suggested that the only practicable method of exploiting these southern areas would be to use large beach landing ships such as those employed in the Pacific during the last war. Adoption of such methods would require much greater tonnages of ilmenite than the 13,500,000 tons previously estimated for these areas. 40

COAL RESOURCES

The total resources of recoverable coal in New Zealand, classified according to location type and reliability of estimates, stand as shown in Table 6 -

T A B L E 6  
ESTIMATED COAL RESOURCES

	(TONS)			
	<u>Measured</u>	<u>Indicated</u>	<u>Inferred</u>	
<u>(a) Bituminous</u>				
Bullor	28,000,000	16,000,000	15,000,000	
Murchison	-	-	1,500,000	
Garvey Creek	1,000,000	2,000,000	5,000,000	
Greymouth	11,000,000	15,000,000	30,000,000	
	40,000,000	33,000,000	51,500,000	
<u>(b) Sub-bituminous</u>				
Northland	1,500,000	500,000	3,000,000	
Maramarua	52,000,000	6,000,000	5,000,000	20
Huntly	30,000,000	105,000,000	5,000,000	
Kawhia	100,000	500,000	5,000,000	
Mangapehi	1,800,000	600,000	1,000,000	
Tatu	1,500,000	600,000	500,000	
Waitewhena	400,000	900,000	11,000,000	
Mokau	-	-	60,000,000	
Nelson	200,000	-	2,000,000	
Buller Gorge	-	-	1,000,000	
Reefton	1,700,000	4,000,000	8,000,000	
Fletcher Creek	-	-	3,000,000	30
Punakaiki	-	-	2,000,000	
Kaitangata	2,000,000	500,000	100,000,000	
Ohai	15,000,000	7,500,000	100,000,000	
Orepuki	-	-	1,000,000	
	106,200,000	126,100,000	307,500,000	
<u>(c) Lignite</u>				
Charleston	6,000,000	2,000,000	8,000,000	
Canterbury	250,000	-	20,000,000	
North Otago	250,000	-	2,000,000	
Central Otago	250,000	-	15,000,000	40
Green Island	250,000	-	3,000,000	
Kaitangata	4,300,000	20,000,000	100,000,000	
Pomahaka	-	-	10,000,000	
Mataura Valley	5,000,000	20,000,000	152,000,000	
	16,300,000	42,000,000	310,000,000	
Total Measured coal	162,500,000 Tons			
Total Indicated coal	201,100,000 "			
Total Inferred coal	669,000,000 "			
GRAND TOTAL:	1,032,600,000 Tons			

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The terms "measured", "indicated" and "inferred" have been adopted by the N.Z. Coal Resources Committee, and were originally defined by the U.S. Bureau of Mines as follows:

"Measured coal" is coal for which tonnage is computed from dimensions revealed in outcrops, trenches, workings, and drill holes, and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling, and measurements are so closely spaced and the geologic character is defined so well that the size, shape and content are well established. The computed tonnage and grade are judged to be accurate within limits, and no such limit is judged to differ from the computed tonnage or grade by more than 20 per cent.

"Indicated coal" is coal for which tonnage and grade are computed partly from specific measurements, samples, or production data and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to outline the coal completely or to establish its grade throughout.

"Inferred coal" is coal for which quantitative estimates are based largely on broad knowledge of the geological character of the deposit and for which there are few, if any, measurements. The estimates are based on an assumed continuity or repetition for which there is geologic evidence; this evidence may include comparison with deposits of similar type. Bodies that are completely concealed may be included if there is specific geologic evidence of their presence.

The bituminous or coking coals are confined to the west coast of the South Island, mainly in the Greymouth and Westport areas. Although they have good coking properties, these coals generally have a high sulphur content averaging roughly 5-6% S, which renders them unsuitable for conventional methods of pig iron and steel manufacture, where maximum permissible sulphur content is about 1.25%. However, it is possible that the new R-N process discussed later in this report will be more tolerant as regards sulphur content.

As seen from Table 6, the bulk of N.Z. coal resources occur as sub-bituminous coals totalling some 540,000,000 tons. Nearly 40% of these reserves occur in the Waikato coalfield, immediately south of Auckland, which comprises the Maramarua and the Huntly coal districts. Annual production in the Waikato Field from both State and privately-owned mines is about 800,000 tons. About 40% of this production is derived from open cut operations. 10

Other important deposits of sub-bituminous coal occur in the South Island near Invercargill in the Ohai field, and south of Dunedin in the Benhar or Kaitangata field. Reserves at Ohai total 123,000,000 tons, whilst at Benhar reserves total 103,000,000 tons.

Although the sub-bituminous coals are non-coking, and therefore unsuitable for the production of pig iron by blast furnaces, they have a low sulphur content and form low sulphur chars which would probably be very suitable for electric smelting or the direct reduction of iron sands using the R-N and similar process,<sup>es</sup> and for steel making. 20

In view of its proximity to Auckland and the principal deposits of iron sands, together with the low sulphur content of its coals, the Waikato coalfield would be a strong contender as a fuel source for an iron and steel industry, using direct reduction methods. Cost of Waikato coal delivered in Auckland would be about £4/10/- per ton. 30

The occurrence of lignites appears to be confined to the South Island, the most important seams being located at Charleston, Canterbury, South Otago and Maitaura. High moisture and low fixed carbon contents render this type of coal a relatively poor source of fuel and, in consequence, use of the N.Z. lignites for iron and steel-making purposes does not seem likely. The west coast lignites have the added disadvantage of a high sulphur content. 40

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#### OTHER MATERIALS

LIMESTONE: New Zealand has abundant reserves of limestone suitable for steelmaking purposes. In the North Island, the principal deposits are located in the Auckland district, at Kawhia, Napier, Hawkes Bay and East Wellington.

Very large deposits of high-grade limestones occur in the north-west of the South Island in the Nelson district, and also down the west coast of the South Island.

Total New Zealand production in 1956 was about 2,200,000 tons of which nearly half was obtained from the Auckland district.

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MAGNESITE: Magnesite deposits extend discontinuously for some 120 miles between Maruia and Collingwood in the north-west Nelson district of the South Island. Seven hundred million tons of magnesite rock, estimated to contain 44-79% magnesite, are available in the Upper Takaka River district, 30 miles south-east of Collingwood. Production in 1956 totalled 730 tons.

DOLOMITE: Dolomite and dolomitic limestones are also widely distributed in the Nelson district of the South Island. Due to the very limited demand for this material, very little exploration work has been carried out and the tonnage and grade of the various deposits are largely unknown.

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However, as dolomite is usually associated with limestone, and limestones are abundant in N.Z., it would be safe to assume that adequate reserves of limestone exist to satisfy steelmaking requirements.

Production of dolomite in 1956 totalled 2,000 tons.

SILICA: Abundant supplies of silica in the form of quartz sand is associated with the various iron sand deposits.

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FLUORSPAR: No information is to hand regarding fluorspar deposits in New Zealand. There appears to have been no production or consumption of fluorspar in 1956. Relatively small amounts of fluorspar are needed for steel making purposes so that the use of imported fluorspar would have little effect on the economics of the operation. Landed cost of imported fluorspar would be about £30/ton.

40

WATER: At most potential steel plants sites, water resources appear to be good and supply installations should not entail excessive capital expense for moderate rates of production.

Water consumption in steelmaking, adopting the

methods envisaged in this report, would be of the order of several thousand gallons per ton of steel product.

#### POWER RESOURCES

In 1957 installed capacity of generating plants in New Zealand reached a total of 1,205,190 K.W. Of this total 94% represented hydro-electric installations, 10 4% steam plant, and the remainder diesel or petrol driven plants. Load factor is about 50-55% of installed capacity.

Preliminary surveys have indicated a probable hydro-electric potential of 1,250,000 K.W. in the North Island and about 6,000,000 K.W. in the South Island. Obviously there is ample scope for future hydro-electric development, particularly in the South Island, and, despite large coal reserves, doubtless the preference for the cheaper hydro-electric power will continue. 20

Notwithstanding this large potential, lag in the construction of new generating plant, because of labour and material shortages during and since World War II, has meant that availability of power has barely kept up with demand, in spite of a trebling of generator output since 1939.

In fact, from 1941, it has been found necessary to impose intermittent restrictions on the use of power in both islands. At times the situation 30

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has been aggravated by dry spells, particularly in the North. However, following completion of current development programmes at Roxburgh in the South Island and on the Waikato River and elsewhere in the North Island, the power position is expected to improve in the near future.

With the plant now being installed in the above mentioned areas, it is hoped to cope with normal demand growth on both Islands until 1965. To meet power requirements in the South Island after 1965, the Benmore scheme has been undertaken and is expected to be operating some time after 1965. Under normal demand conditions it is expected that completion of Benmore will result in surplus power being available for some time. 40

Exhibit 5 - Palmer's  
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Apart from the proposed submarine cable across Cook Strait, there are no development plans for the North Island to cope with demand after 1965. Although the Government, as yet, has made no firm decision regarding the cable, it is generally felt that a submarine cable across Cook Strait is the most economic solution to New Zealand's power difficulties, and that the project will probably be undertaken after 1965 when Benmore is operating. 10

Interconnection of the two systems would firstly simplify present problems associated with water storage and peak capacity because run-off seasons and incidence of peak loads are diverse in both islands; and secondly, it would give the more rapidly developing North Island access to the large and cheaper hydro-electric resources of the South.

As a result of discussions with Mr. E.B. Mackenzie, it appears that existing and projected capacity could not support a smelter and steel plant operated solely by electricity, and consuming, perhaps 3,500 K.W.H. per ton of steel product until Benmore begins operating some time after 1965, and, even then, production would have to be restricted to about 150,000 tons/year. Further, the plant would probably have to be located in the South Island, unless the North and South Island systems were interconnected by submarine cable. 30

However, the chief obstacle to straight electric smelting methods would be the cost of power, which Mr. Mackenzie expects to be of the order of 0.75 pence per K.W.H. by 1965, if supplied direct by the N.Z. Electricity Department. If retailed through a local power board, as generally required by the authorities, the cost would be in excess of 1.0 pence per K.W.H. However, it is unlikely that any local authority would have the facilities for handling the large amount of power necessary for smelting purposes. 40

For electric smelting to compete with standard blast furnace practice, it has been found overseas that the cost of 1 K.W.H. should not exceed five-ninths the cost of 1 lb. of coke. Although blast furnace methods are unsuitable for titaniferous iron ores as occur in N.Z., the above formula can be used as a rough guide to the economics of electric smelting in New Zealand.

Applying the formula, and allowing 160 shillings 50

per ton of coke, the cost of power should not exceed 0.48 pence per K.W.H. for economic operation. Consequently, unless the Government would be prepared to subsidise the cost of power, or pre-heating and pre-reduction techniques using coke or coal could be incorporated to reduce the cost of power, the prospects for electric smelting methods, based on power generated by public utilities, do not appear to be very attractive. 10

However, sponge iron methods such as the R-N process, discussed later in this report, appear to be far more promising. Power consumption of the R-N process, which produces sponge iron briquettes, is only about 125 K.W.H. per ton as against 3,000 K.W.H. per ton of iron produced by straight electric smelting methods. The difference in power consumption between the two methods is due to the use of coke or chars in the R-N process as a source of heat instead of electrical energy. 20

Conversion of the R-N product to steel in an electric refining furnace (not a smelting furnace) would involve an additional power consumption of 500-600 K.W.H. per ton, thus making a total of 625-725 K.W.H. per ton of steel product. When current additions to generating plant are completed, the North Island system should at least be capable of supporting an R-N plant and electric steel refinery producing 150,000-200,000 tons of steel per year. 30

If production of iron and steel on a large scale is ever contemplated

-20-

the Dusky Sound or Southern Lakes scheme in the extreme south would warrant investigation with a view to establishing a steelworks and titanium by-product plant using electric smelting and refining methods. The plant would be located at Invercargill and would have port facilities at Bluff Harbour. 40

The scheme has a hydro-electric potential of one million kilowatts which it is estimated, could be developed in two units of half a million kilowatts at a cost of £70 per kilowatt including cost of transmission to Invercargill. The Government has no immediate intentions of developing this large potential source of power.

It is understood that the scheme is under



preliminary investigation by the Commonwealth Aluminium Corporation Pty.Ltd. as a possible source of power for the extracting of aluminium from alumina produced from the huge bauxite deposits located in the Cape York Peninsula of Australia. Consumption of power in aluminium production is about 25,000 K.W.H. per ton of aluminium.

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One unit of half a million kilowatts would be capable of sustaining a production of 1,000,000 tons of steel per year. The cost of a fully integrated steelworks, incorporating electric smelting would be of the order of £80 per ton of annual capacity so that the capital cost of establishing a steelworks with the above capacity at Invercargill, using electric smelting and refining, would be approximately -

Power Installation	£35,000,000	
Steelworks	<u>80,000,000</u>	20
	<u>£115,000,000</u>	

Apart from achieving power costs in the order of 0.5 pence per K.W.H., an electric steelworks operation at Invercargill would have to contend with relatively high freights involved in shipping ore from the North Island unless sufficiently large reserves of ilmenite could be established in the South Island.

In addition to conventional generating methods, the possibility of using power generated by nuclear or gas turbine plants would warrant examination if an investigation of the economic potential of New Zealand iron sands is undertaken.

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Regarding capital costs of power transmission in New Zealand, the cost of constructing a 220 volt K.V. transmission line over distances of 129-140 miles is about £10,000 per mile including sub-station assembly and auxiliary equipment.

#### METHODS OF PRODUCING IRON

So far the biggest obstacle to the exploitation of the N.Z. iron sands has been the inability to find an economic process for producing iron from this finely divided and highly titaniferous material. Once this problem is overcome, and iron can be produced on a commercial scale, the subsequent

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steel-making processes could be carried out in conventional open hearth or electric refining furnaces and would present no difficulties.

Processes for making iron which have either been attempted in New Zealand or have been suggested as a means of treating N.Z. iron sands include -

Blast furnace smelting; 10  
Electric smelting methods;  
Sponge iron techniques such as the  
R-N and Krupp-Renn processes.

BLAST-FURNACE SMELTING:

Over 90% of the world's pig iron is produced in blast furnaces. The operation is performed by charging ore, iron scrap, coke and limestone into the top of a vertical furnace, some 80-100 feet high, which is known as a blast furnace. A continuous blast of pre-heated air is fed through nozzles about 8 feet 20 from the bottom of the furnace, the air then passing upward through the charge.

The air blast enables the coke in the charge to burn and produce the necessary high temperatures. Reduction of the ore to metallic iron then

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commences by reactions between ore and carbon monoxide gas resulting from the combustion of the coke, and between ore and carbon in unburnt coke. The purpose of the limestone is to combine with the earthy 30 constituents of the ore and form a slag.

As the process proceeds, the ore is reduced to metallic iron which then melts and trickles to the hearth at the bottom of the furnace where it accumulates. As it falls, the iron dissolves impurities from the coke, ore and limestone, so that the pool of iron at the furnace bottom contains 3-5% carbon, about 1% manganese, up to 3% silicon, and usually a small amount of sulphur and phosphorous.

The limestone reacts with the earthy constituents 40 in the ore and forms a slag which also melts. This trickles down the furnace with the iron to the hearth where it forms a liquid layer floating on the iron. Two tap holes near the bottom of the furnace enables the iron and slag to be drawn off from time

to time. Hot gases leaving the top of the furnaces are used for preheating the air blast.

Except for rare stops for repairs to the fire-brick lining about once every two years, blast furnaces operate continuously. A large blast furnace can produce 1000-1500 tons of pig iron per day. The production of 1000 tons of pig iron from rich ore requires about 2,000 tons of ore, 800 tons of coke, 500 tons of limestone and 4,000 tons of air. 10

A modern blast-furnace plant must include not only the furnace itself and at least three stoves for preheating the blast, but also an enormous battery of bins for the storage of raw materials, a coke-oven plant for producing fuel, blowing and pumping equipment for air and water, ladles for taking away the pig iron and slag, a casting machine for casting the iron in the form of pigs, and plant for disposing of and conveting the slag and other by-products into marketable forms. 20

The capital cost of blast furnaces and auxiliary equipment would be of the order of £50-£60 per ton of annual pig iron capacity exclusive of steel-making plant and rolling mills. Conventional blast furnace methods are not amenable to small-scale operation.

Due to the formation of titaniferous accretions and slags of high viscosity, which interfere with the working of the furnace, ores containing more than 2% titanium dioxide cannot be economically smelted in the blast furnace. 30

Normally the sulphur content of the pig iron should not exceed 0.08%. Sulphur is mainly introduced into the furnace by the coke which should contain less than 1.25%, otherwise the sulphur content of the pig iron will rise above permissible limits.

Blast furnace cokes must also have high strength to withstand the large internal pressures exerted by the charge within the furnace column. Weak cokes and chars would be crushed by internal pressure and would choke the furnace. 40

Between 1914 and 1918, abortive attempts were made to smelt titanomagnetite iron sands in a blast furnace at New Plymouth, N.Z. The operation failed because of the high titanium content of the ore, and also because the fine nature of the iron sands clogged the furnace blocking off the air blast.

ELECTRIC SMELTING METHODS:

Electric smelting has been partly discussed under Power Resources, where it was considered that prospects for straight electric smelting of N.Z. iron sands based on power generated by public utilities, do not appear very attractive for two reasons, namely -

1. Sufficient power to permit production on a restricted scale would not be available until some time after 1965; 10
2. Power costs would probably be too high for economic operation unless subsidized.

It was also considered that, if large-scale production of iron and steel were ever contemplated, the Dusky Sound or Southern Lakes, hydro-electric scheme

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would warrant investigation with a view to establishing a steelworks at Invercargill using electric smelting and refining methods. It was estimated that the capital cost of establishing such a plant with a capacity of one million tons of steel per year would be of the order of: 20

Power Installation	£35,000,000
Steelworks	<u>80,000,000</u>
	<u>£115,000,000</u>

In the electric processes, ore, coke and limestone (if necessary), are charged into a furnace fitted with three carbon or graphite electrodes. The electrodes are connected to a three phase source of alternating current which is conducted between the electrodes through the charge by the coke. The furnace has no external air supply. 30

The resistance of the coke to the current produces the high temperatures necessary for the reduction of the ore to metallic iron. Molten iron and slag trickle downward to the furnace bottom where they are drawn off through tap holes as required. Gas produced by the reaction between the carbon in the coke and the oxygen in the ore, consisting mainly of carbon monoxide, has a high calorific value and can be utilised in subsequent steel-making processes. The absence of any air blast, permits the use of weak cokes or chars in the electric furnace and the treatment of finely-divided ores. 40

Exhibit 5 - Palmer's  
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Further, since the necessary heat is supplied electrically, the coke or char is solely employed as a reducing agent. As a result, the coke consumption per ton of pig iron is some 60% less than that of the blast furnace. This enables electric smelting methods to tolerate cokes and chars containing up to 2% sulphur.

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Electric smelting methods are adaptable to small-scale operation and furnaces are made with capacities ranging upwards from 50 tons of pig iron per 24 hours. Power consumption is generally about 3,000 K.W.H. per ton of pig iron. Cost of an electric pig iron smelter for a production rate of 100,000 - 200,000 tons of pig iron per year would be about £20-£25 per ton of annual pig iron capacity, exclusive of steel making plant, rolling mills, etc.

In 1949, electric smelting tests were carried out at Onekaka, N.Z. under the direction of the Department of Industries and Commerce. The object of the tests was to demonstrate that N.Z. titanomagnetites could be smelted in a continuously operated electric furnace to produce a steel-making pig iron and a suitably fluid slag. The tests were also required to check the suitability of Waikato char as a reducing agent for electric pig iron smelting.

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The tests, resulting in the production of some 20 tons of good quality pig iron, indicated firstly, that N.Z. titanomagnetites were amenable to continuous smelting in an electric furnace, and secondly, that Waikato char would be a satisfactory reducing agent.

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The operations of the Quebec Iron and Titanium Corporation in Quebec, Canada, constitute an interesting overseas development in electric smelting of ilmenite. This Company, a subsidiary of Kennecott Copper Corporation and the New Jersey Zinc Company, is successfully operating a five furnace electric smelter at Sorel and treats 600,000 tons of ilmenite per year to produce 200,000 tons of pig iron and 270,000 tons of slag containing 70%  $TiO_2$ .

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The ilmenite occurs in hard rock deposits at Allard Lake, located 22 miles north of Havre St Pierre, the shipping point on the north shore of the Gulf of St. Lawrence. Ore reserves stand at 112,000,000 tons containing 36% Fe and 32%  $TiO_2$ . The ore is shipped 540 miles up river to the smelter site at Sorel.

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The slag by-product, valued at about £12 per ton, is shipped 40 miles downstream to Varennes, where it is converted into titanium pigment. The pigment plant is owned by Canadian Titanium Pigments Limited, a subsidiary of the National Lead Company. The success of the smelting operations is largely due to low-cost power and the ability to produce a valuable slag by-product. 10

SPONGE IRON TECHNIQUES:

Major problems facing steel producers today include the gradual depletion

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of high-grade ores and suitable coking coals for blast furnace operations, and the enormous capital costs involved in blast furnace installation today.

Declining ore-grade has been temporarily overcome by subjecting low-grade ores to various pre-concentration techniques, whilst processes are also being developed to produce metallurgical coke by compacting non-coking coals by high pressures prior to treatment in coke ovens. 20

As an alternative means of overcoming metallurgical difficulties associated with the use of poor ore and coal types, and also of eliminating the blast furnace stage from steel-making, sponge iron processes are receiving a great deal of attention overseas at the present time. The sponge iron product may be of sufficient purity to be charged directly into electric furnaces for the production of high-quality steels. The sponge iron product may also be used as a high-grade feed replacing iron scrap in existing blast furnaces. 30

Some of the sponge iron processes are very flexible. They are amenable to relatively small-scale operations and can treat high or low-grade ores, complex ores containing titanium, nickel, base metals, etc. and finely divided ores. Unlike the blast furnace, the conversion of ore to iron is carried out at temperatures below the melting point of iron. 40

Sponge iron processes are also referred to as Direct Reduction Processes. The latter term is used, firstly, because a ferrous product suitable for steel making can be made directly from ore without

the melting phase and, secondly, because a ferrous product can be obtained directly from low quality ores, too low in iron content, or too complex to be smelted in blast furnaces without prior treatment.

Sponge iron processes which are of importance in connection with a steel industry based on N.Z. iron sands include the Krupp Renn and R-N processes. These have reached an advanced stage of development and are discussed below. Other processes, which are still in the experimental stage include the H-Iron, Esso, Nu-Iron, Madaras and ORF processes.

The Krupp Renn Process: This process was developed over 20 years ago by Fried Krupp of Germany. It has been widely applied, particularly during the last war, and plants are operating on a commercial scale in Germany, Spain, Greece and elsewhere. Plant capacities range from 20,000 tons to 500,000 tons per year of ferrous product.

Basically, the Krupp Renn process involves the continuous reduction of iron ore in a rotary kiln at temperatures below the melting point of iron.

The charge, consisting of ore, coke and limestone, is conveyed into the kiln which slopes downwards towards the discharge end of the kiln. The kiln is slowly rotated causing the charge to travel slowly towards the discharge end. Heat for the process is supplied by a set of burners which operate intermittently at the discharge end of the kiln. The burners are generally fired with powdered coal or fuel oil.

As it passes down the kiln the charge is first preheated and then the ore reduced to sponge iron by carbon in the coke and carbon monoxide gas produced by the combustion of the coke. The earthy material in the ore combine with the lime to form a pasty slag. Towards the discharge end of the kiln the sponge iron forms nodules, 1/16" to 1 1/8" in diameter, which are dispersed through the pasty slag.

On discharge from the kiln, the mixture of slag and iron nodules is quenched in water and then selectively crushed to release the more friable slag. The crushed product is then conveyed to magnetic separators which recover the nodules. Iron content of the nodules is about 90-95% Fe.

Course material is not required as a reducing

agent. The process operates equally well with poor quality cokes, coke breeze (coke particles less than 3/4" in diameter) chars produced from non-coking coals and charcoal.

The chief disadvantages of the process is that low sulphur fuels must be used, frequent relining of the hot zone of the kiln is required whilst there is a tendency for accretions to be formed on the walls of the kiln. 10

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The Krupp Renn process is capable of treating a wide range of ores, including titaniferous iron ores, and there appears to be no technical reason why the process should not be adaptable to the treatment of N.Z. iron sands. The capital cost of a Krupp Renn plant installed in New Zealand would be about £20-£25 per ton of annual capacity of ferrous product.

The R-N Process: This process has been recently developed jointly by the Republic Steel Corporation and the National Lead Company of America. Research extended over some thirteen years and included the construction of a large pilot plant in Alabama, U.S., which to date has successfully treated over 100,000 tons of ore. The construction of commercial plants is now being undertaken in the U.S. 20

Like the Krupp Renn process, the R-N is a rotating kiln process which can treat difficult ore types including titaniferous ores, and use poor quality fuels. Ore plus carbonaceous material and limestone are fed into a rotating kiln, where the ore is reduced to sponge iron and the limestone combines with the earthy materials to form a cinder rather than a slag. 30

The kiln is fired by natural gas or fuel oil. Materials discharged from the kiln are quenched and separated by screening and by gravity and/or magnetic methods. Unburnt carbon fuel is cleaned and returned to the kiln for re-use. 40

Gravity and/or magnetic concentrates are treated by grinding in ball mills and further gravity and/or magnetic separation methods to free the iron from the non-ferrous product. The iron product is then compressed into briquettes weighing from 25-30 lbs. each. Iron content of the briquettes range from 70% to over 90% Fe, depending on the grade of the ore need.



Advantages claimed for the R-N process over the Krupp Renn process are:

- (1) Greater tolerance to sulphur in fuels and ores:
- (2) Lower operating temperatures and better temperature control resulting in more stable operation.
- (3) Lower kiln maintenance costs and less tendency to form accretions due to the lower operating temperatures.

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The R-N process would afford a promising line of investigation if the search for an economic method of treating N.Z. iron sands were undertaken. Using titanomagnetites, or ilmenites, the process could be expected to give, in addition to a high-grade iron suitable for use in electric or open hearth furnaces, a titanium rich, non-ferrous product, which might warrant pigment manufacture.

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Research already undertaken by the D.S.I.R. in New Zealand indicates the char made from Waikato coal be used as the reducing agent in the R-N process, whilst the volatiles, resulting from the conversion of the coal to char, could also be used to fire the kiln instead of natural gas or fuel oil.

Capital cost of an R-N plant installed in New Zealand would be roughly the same as for the Krupp Renn, namely £20-£25 per ton of annual capacity of ferrous product.

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Mason Bros. Mesco Ltd. of Auckland are the New Zealand representatives of Republic Steel Corporation, the manufacturers of plant used in the R-N process; Mason Bros. Mesco Ltd. recently consigned a sample of N.Z. titanomagnetite to Republic Steel for preliminary metallurgical testing, in order to assess the applicability of the R-N process to New Zealand iron sands.

#### PRELIMINARY ECONOMIC STUDY

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Due to the impossibility of obtaining precise information at this stage, the following example should only be treated as a very rough guide to the capital and production expense which would be involved in an iron and steel enterprise located in New Zealand.

In the calculations, the following general assumptions are made:

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1. The ore source is the titanomagnetite deposit at Muriwai Beach;
2. Ore is reduced in an R-N plant;
3. R-N iron product is refined by electric methods; 10
4. Production rate is 350,000 tons of finished steel products per year;
5. Manufacture is restricted to simple types of products such as medium sections, merchant bar and wire rod, sheet and wire;
6. Iron and steel plant is located in the Auckland district, near road, rail and power.

COST OF ORE PRODUCTION:

Outline of Methods: Production of titanomagnetite from the raw sand would involve first mining and then treating the sand in a mill to separate quartz, ilmenite, etc. from the titanomagnetite. 20

The type of mining method to be adopted would largely depend on the nature of the deposits and the production rate. For low-lying deposits, bucket or suction dredging on floating pontoons might be applicable.

For deposits located above ground water level, possible methods would include excavation by wheel tractor/scrapper combinations, bucket wheel dredging, dragline methods and excavation by power shovels. In the example it is assumed that mining is carried out by tractor/scrapper units. 30

The raw sand would be amenable to simple treatment processes utilising the specific gravity differences between the minerals and the highly magnetic properties of the titanomagnetite. Basic items in such a process would probably be Humphrey spirals and magnetic separators. Separators using permanent magnets, which require no energising power, would possibly be suitable. 40

The sand would first be fed into Humphrey spirals to effect a gravity separation of the lighter quartz sand from the heavier iron minerals. The resulting concentrate would then be treated

Exhibit 5 - Palmer's  
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magnetically to separate the ilmenite from the titanomagnetite. The ilmenite would be stacked for possible future use, whilst the titanomagnetite would be railed to the reduction plant.

In estimating the costs of ore production, the following main assumptions were made:-

- |    |   |    |
|----|---|----|
| 1. | The raw sand contains 20% of recoverable titanomagnetite;                                   | 10 |
| 2. | Reserves of titanomagnetite total 18,000,000 tons;  |    |
| 3. | Titanomagnetite concentrate contain 50% recoverable iron;                                   |    |
| 4. | Plant operates 3 shifts per day, 320 days per year;   |    |
| 5. | Supervision costs £1.5 per man hour;  |    |
| 6. | Labour costs £0.75 per man hour;  |    |
| 7. | Power consumption is 5.0 K.W.H. per ton of mill feed casting 0.75 pence per K.W.H.          | 20 |
| 8. | Water consumption is 2.0 tons of water per ton of mill feed costing £0.01 per 1000 gallons. |    |

Production Rate: The production of 350,000 tons of steel per year would require 700,000 tons of titanomagnetite concentrates containing 50% recoverable iron. This would involve mining and treating 11,000 tons of raw sand per day for the recovery of 2,200 tons of concentrates, calculated on the basis of a 320 day operating year. 30

Capital Costs:

Mining plant	£200,000
Mill	350,000
Other plant	270,000
Rail Extensions	300,000
Access roads	140,000
Housing	234,000
	£1,494,000

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Operating Costs:

	<u>Cost/ton Concentrates</u>	
Mining	£0.445	
Milling	0.215	
Transport	0.266	
Supervision	0.049	10
Royalties	0.050	
Miscellaneous	<u>0.050</u>	
	<u>1.075</u>	
say	<u>£1.100</u>	

METAL PRODUCTION COSTS:

A. Production of Sponge Iron by R-N Process: A description of this process has already been outlined under the heading of "Methods of Producing Iron". The costs given below are based on cost information quoted in a report on the R-N Process which was published in the Journal of Metals, July, 1958. 20

In estimating the costs in producing 350,000 tons sponge iron per year, the following assumptions were made:

1. Cost of concentrate containing 50% recoverable iron is £1.10 per ton.
2. Cost of char made from Waikato coal is £10 per ton.
3. By-product volatiles from charring process, costing £0.02/100,000 B.T.U. are used to fire kilns. 30
4. Limestone costs £3.0 per ton.
5. Power costs 0.75 pence per K.W.H.
6. Water costs £0.01 per 1,000 gallons.
7. Labour costs £0.75 per man hour.
8. Supervision costs £1.5 per man hour.
9. Administration costs equal costs of supervision;
10. Cost of tailings and waste disposal is £0.05 per ton of tailings, etc. 40

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Capital Costs:

	£	£	
Reduction Section	2,545,600		
Roughing Section	932,000		
Finishing section	1,925,600		
Briquetting section	792,100		
Storage & materials handling	<u>284,700</u>		10
Total direct equipment installed		6,480,000	
Site development	276,900		
Services	<u>148,100</u>		
Total other direct costs		425,000	
Engineering	1,036,000		
Spares & operating supplies	<u>276,000</u>		
Total indirect costs		<u>1,312,000</u>	
		<u>£8,217,000</u>	

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20

Operating Costs:

	<u>Units per long ton of</u> <u>Briquettes</u>		
	<u>Quantity</u>	<u>Cost</u>	
Concentrates	2.0 tons	£2.200	
Char	0.5 tons	5.000	
*Limestone	0.1 tons	0.300	
Fuel	7.5x10 <sup>6</sup> B.T.U.	1.500	
Power	127 K.W.H.	0.397	
Water (make up)	1160 Galls.	0.012	30
Grinding balls and liners	-	0.097	
Kiln relining allowance	-	0.092	
Briquetting press (tools & dies)	-	0.101	
All other maintenance, labour & materials	-	0.892	
Laboratory, labour and materials	-	0.092	
Direct operating labour	0.416 Man Hrs.	0.312	
Supervision	0.065 Man Hrs.	0.098	
Administration	-	0.098	
Tailings & Waste	1.5 tons	<u>0.075</u>	40
*Limestone may be unnecessary		<u>11.266</u>	
Say		<u>£11.500</u>	

B. Steel Production:

Outline of Process: The operations comprise refining the iron briquettes in an electric furnace to reduce the amount of impurities, addition of carbon and

ferro-alloys to bring the metal to the desired composition, and finally, shaping in mills to produce the finished products.

Iron briquettes produced from titanomagnetites by the R-N process would probably be sufficiently low in phosphorous and sulphur to be charged directly into an electric melting furnace without prior treatment in open hearth furnaces. 10

In the refining process, the briquettes would be charged into the electric furnace with appropriate amounts of Limestone, Silica, Fluorspar and powdered char to form a slag. The purpose of the slag would be to protect the steel from oxidation and to deoxidize and desulphurize the steel.

Towards the end of the process the steel is brought to the desired composition by the addition of carbon in the form of anthracite, and various ferro alloys containing silicon, manganese, chromium, vanadium, etc. The steel is finally cast into ingots by pouring the liquid steel into tapered ingot moulds. 20

After cooling, the moulds are stripped from the ingots which are then rolled in primary mills to form blooms and slabs. These two primary shapes are then passed through secondary mills to form the various finished products desired.

Production Rate: The following annual production has been assumed: 30

Iron briquettes fed to electric furnaces	350,000 tons	
Steel Scrap " " "	20,000 "	
	<u>370,000</u> "	
Less metal loss (about 5%)	<u>20,000</u> "	
<u>Steel Ingots</u>	<u>350,000</u> "	
<u>Blooms and slabs</u>	<u>350,000</u> "	
Medium Sections	80,000 "	
Merchant bar and wire rod	110,000 "	40
Sheet	100,000 "	
Wire	<u>60,000</u> "	
	<u>350,000</u> "	

Estimation of Costs: The costs given below are based on estimates for an iron and steel plant submitted in 1947 by John Miles & Partners Ltd., consulting engineers to the then N.Z. Iron and Steel Commission.

In making the estimates shown below, the following assumptions were made: 10

(a) Ingot Production:

1. Cost of iron briquettes and iron scrap is £11.5 per ton and 1.06 tons are required per ingot ton.
2. Power consumption is 500 K.W.H. per ingot ton costing 0.75 pence per K.W.H.
3. Electrode consumption is 20 lbs. per ingot ton costing £0.05 per lb.
4. Labour and supervision required totals 4 man hours per ingot ton costing £0.9 per man hour. 20
5. Cost of materials including limestone, fluorspar, sand and cooling water is £0.5 per ingot ton.
6. Maintenance, administration and other costs total £1.0 per ingot ton.

(b) Finished Products: In the absence of any reliable information at this stage, costs of finished products are determined from the ratios of costs of finished products to cost of ingots as estimated by Miles and Partners. 30

The ratios are:

	Product cost/ingot cost	
Ingot Steel	1.00	
Blooms	1.19	
Slabs	1.29	
Medium sections	1.46	
Merchant bar and wire rod	1.53	40
Sheets	1.70	
Wire	2.14	

Capital Costs:

(a) Steelmaking:

£

Ten 2500 K.W. electric arc furnaces installed with auxilliary electrical and materials handling equipment	1,000,000	
Rolling mill including ingot stripper, soaking pits, blooming and section mills, reheating furnaces, finishing equipment, etc.	5,900,000	10
Sheet mill installed with auxilliary equipment	3,100,000	
Wire mill installed with auxilliary equipment	1,400,000	
	<u>£11,400,000</u>	

(b) Miscellaneous Items common to Briquette and Steel Production:

£

20

Carbonisation and by-product plant	1,200,000	
Electrical installation and distribution including transformers, cabling and distribution boards	610,000	
	<u>C/forward £1,810,000</u>	

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B/forward £1,810,000

30

Pumping station, reservoirs, water treatment, drinking water systems	300,000	
Engineering shops and offices, including machine tools and equipment, laboratories, stores and departmental offices	800,000	



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Rail facilities, including tracks, sheds, locomotives, cranes, wagons, yard lighting and weighbridge	700,000	
Roads, lighting, vehicles and weighbridges	200,000	
Housing and amenities for half work force	1,760,000	10
	<u>£5,570,000</u>	

Operating Costs:

(a) Cost of Steel Ingots:

	<u>Cost per Ingot Ton</u>	
	£	
Metallic raw materials	12.20	
Power	1.56	
Electrodes	1.00	
Labour & Supervision	3.60	20
Materials	0.50	
Maintenance, etc.	<u>1.00</u>	
	<u>19.86</u>	
Say	<u>£20.00</u>	

(b) Cost of Finished Products:

	<u>Product cost/ Ingot Cost</u>	<u>Cost to nearest £</u>	
Ingot Steel	1.00	20	
Blooms	1.19	24	
Slabs	1.29	26	30
Medium Sections	1.46	29	
Merchant bar & wire rod	1.53	31	
Sheets	1.70	34	
Wire	2.14	43	

INVESTMENT COSTS:

(a) Cost of Plant:

Ore Production	£1,494,000	
Sponge iron production	8,217,000	
Steel production	11,400,000	40
Miscellaneous items	<u>5,570,000</u>	
	<u>£26,681,000</u>	

(b) Company Formation Cost: Cost of pre-  
liminary investigations, vendors'

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interests, underwriting and other expenses  
of company formation are assumed to be  
... .. £2,000,000

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(c) Total Capital Costs:

	£	
Plant Installation	26,681,000	10
Company formation	<u>2,000,000</u>	
	28,681,000	
Contingencies	<u>2,868,000</u>	
	<u>£31,549,000</u>	
say	<u>£32,000,000</u>	

(d) Investment Cost:

Investment costs comprise depreciation on  
plant at 7% per annum, together with  
return of total capital investment spread  
over 25 years, plus interest calculated on  
the basis of 15% on half the total capital  
investment. 20

Investment costs per annum are as follows:

Depreciation	£1,867,670
Amortisation	
Capital return	1,280,000
Interest	<u>2,400,000</u>
	<u>£5,547,670</u>

Investment costs per ton of steel products  
on a 350,000 tons per year basis is thus 30  
£15.9, say £16.0 per ton of steel products.

WORK FORCE:

Labour consumption in supervision, administration,  
productive operations, maintenance and laboratory  
work would be of the following order:

<u>Operation</u>	<u>Man hours/tons of product</u>	
Production of ore	0.3	
Production of sponge iron	0.7	
Production of steel ingots	4.0	
Production of finished products	4.0	40

Total work force would be approximately 1200 men.

SUMMARY OF COSTS:

(a)	<u>Capital Costs:</u>	£	
	Plant and installations (re-arranged)		
	Ore production plant	670,000	
R-N	plant and char production	9,417,000	
	Steel furnaces and rolling mills	12,200,000	10
	Electrical installations	710,000	
	Water supply	350,000	
	Roads	340,000	
	Rail facilities	1,000,000	
	Housing and amenities	1,994,000	
	Expenses of company formation	<u>2,000,000</u>	
		£28,681,000	
	Contingencies	<u>2,868,000</u>	
		£31,549,000	20
	Say	<u>£32,000,000</u>	

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(b) Total Production Costs: In addition to giving total estimated production costs, the following table shows for comparison the approximate value of similar finished products imported into New Zealand during the first nine months of 1958 -

Product	Output Tons	Operating cost/ton	Investment cost/ton	Total Pro- duction cost/ton	Value of similar products imported N.Z. 1958, Cost/ton	
		£	£	£	£	
Concentrates	700,000	1.1	-	-	-	
Sponge Iron	350,000	11.5	-	-	-	
Ingot Steel	350,000	20	-	-	-	
Blooms )	350,000	24	-	-	-	40
Slabs		26				
Medium Sections	80,000	29	16	45	43	
Merchant bar & wire rod	110,000	31	16	47	43	
Sheets	100,000	34	16	50	67*	
Wire	60,000	43	16	59	54	

\* Excluding galvanized sheet and tinplate.

COMMENTS ON COST:

The above preliminary economic study indicates that the capital cost of an integrated steel plant located in the Auckland district, using local raw materials and producing 350,000 tons of the simpler types of finished steel products, would be in the order of £90 per ton of annual capacity. 10

For other production rates, the capital cost per ton would vary inversely with the production rate, lower output resulting in higher capital costs per ton of annual capacity and vice versa. For example, a plant located as above, but producing only 200,000 tons of finished products per year, would cost perhaps £110-130 per ton of annual capacity.

For a given production rate, capital costs in the less developed and more remote districts, such as Lake Taharoa, would be considerably higher, due to the greater expense involved in road, rail and power line construction. In such cases higher capital charge could be reduced by increasing production rates and/or amortizing capital on say a 50 year basis instead of 25 years as adopted in the previous example. 20

With regard to operating costs, critical factors would be ore, coal and power costs. The cost of ore would depend largely on the concentration and distribution of the iron ore minerals in the sands, dimensions of the deposits, depth of overburden depth to ground water level; mining and milling methods, and distance of deposits from the metal production plant. 30

To illustrate the importance of ore costs, it is assumed that a metal production plant is located in Dunedin, as is proposed by the New Zealand Development Corporation, and that processes adopted, production rate, capital cost, cost of raw materials (other than ore), labour, power, etc. remain the same as those in the above economic study. 40

Under such conditions the cost of ore would rise from the estimated £1.1 per ton to at least £4.0 per ton because of the additional freight and handling involved in transporting concentrates from the North Island to Dunedin. The effect of increasing cost of ore to £4/ton would be to increase the cost of steel ingots from £20/ton as previously estimated to £26/ton with corresponding increases in the costs of finished products. 50

With a plant located at Dunedin, use of South Island ilmenites would result in somewhat lower freight and handling charges. However, any freight advantage so obtained would be probably more than offset by the much lower iron content of the ilmenites compared with the titanomagnetites.

Estimated operating costs for sponge iron production also indicate that the cost of char reductant, and hence the cost of coal from which it is

10

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derived, is even more critical than the cost of ore. For this reason the location of the metal reduction plant should be as close to both ore and coal sources as possible.

Power costs have been previously discussed. In the absence of some form of Government subsidy, minimum power costs that can be expected would be 0.75 pence per K.W.H.

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#### BY-PRODUCTS FROM R-N PROCESS

Analyses of N.Z. titanomagnetites and ilmenites show the minerals contain significant amounts of titanium and vanadium which might be worth recovering from R-N waste products.

Using titanomagnetites, the cinder product would possibly contain in the order of 40-50% titanium dioxide,  $TiO_2$  and 1.8-3% vanadium pentoxide,  $V_2O_5$ . Using ilmenites, the cinder would perhaps contain 80-90%  $TiO_2$  and 0.2-0.5%  $V_2O_5$ .

30

TITANIUM PIGMENT: The obvious application of titanium enriched cinders from the R-N treatment of N.Z. iron sand minerals would be for the manufacture of titanium pigment. However, as chromium compounds are strongly coloured, to be suitable for pigment manufacture, the chromium content of the cinder would need to be less than 0.1% chromic oxide,  $Cr_2O_3$ . Analyses indicate the cinder would meet this specification. Vanadium also has strongly coloured compounds and would have to be removed at some point in the pigment-making process.

40

The R-N cinder product would probably be amenable to the methods adopted at Varennes and elsewhere for the manufacture of pigment from titanium enriched slags. These involve leaching slag with sulphuric acid, filtration, precipitation of titanium hydroxide, various purification processes, conversion of titanium hydroxide to dioxide in kilns, grinding and bagging. 10

Most titanium pigment is used in the paint industry. However, other industries, such as paper, rubber and plastic industries are taking increasing quantities due to the popularity of light, bright colours. World consumption of titanium pigment is expected to double in the next 10 or 12 years. Current price of Tasmanian pigment, bagged and delivered in Sydney is £A260 per ton.

VANADIUM: About 75% of the world's vanadium is consumed by the steel industry for the production of engineering steels, cast irons, high speed and other tool steels. Vanadium is increasingly employed in the manufacture of aluminium vanadium alloys, high-strength titanium alloys, and as pure, ductile metal for cladding in atomic power stations. 20

Vanadium compounds are also used in the production of coloured glazes for porcelain enamel and ceramic ware; as driers or colour fixatives in paints, dyes and inks, and as catalysts in chemical processes involving production of sulphuric acid and various organic chemicals. 30

An interesting new, and potentially large outlet for vanadium is the use of vanadium pentoxide in motor car exhaust systems to reduce air pollution and smog in metropolitan areas.

Current U.K. price of vanadium pentoxide is about stg. 9/- per pound. Excluding the U.S.S.R. world production of vanadium totals about 7,000 tons, of which 6,500 tons is produced in U.S.A. Very large vanadium deposits are under development in the Transvaal, South Africa. 40

#### PRELIMINARY INVESTIGATION PROGRAMME

The purpose of the investigation would be to obtain all the data necessary for an accurate assessment of the economics involved in establishing

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a steel industry in New Zealand. Besides the determination of mineral reserves, the field unit would closely study processes, sources of power, coal and other raw materials, labour freights, access and N.Z. costs and conditions generally.

Prior to the commencement of the investigation, either the principal mineral deposits should be held under exclusive prospecting titles, as provided by the N.Z. Mining Act, or official assurance given that such titles would be granted. 10

Initial applications for prospecting or mining rights should cover the following areas in the North Island -

- (a) Muriwai Beach to Manukau Heads;
- (b) Lake Taharoa.

Some reconnaissance work would be required to determine the precise location of the deposits in these areas. Following the initial applications, further reconnaissance surveys would be needed to locate other areas worth taking up, including potential sources of other raw material such as limestone, dolomite and magnesite. Reconnaissance of the more accessible areas would be carried out by car or jeep. Those less accessible would have to be examined by air. 20

The main investigation programme would include:

- (a) Exploration to determine mineral reserves;
- (b) Study of processes, power, including power generated by atomic energy and gas turbines, sources of raw materials, N.Z. costs and conditions generally; 30
- (c) Negotiations to determine the extent of Government aid and participation;
- (d) Economic studies.

#### EXPLORATION:

The more important areas would be investigated first, commencing, say at Muriwai beach. The deposits would be tested above and below ground water level by churn drilling or other methods of drilling cased bores. Drilling in sand would be performed rapidly and at relatively low cost. Assuming drilling was carried out by outside contract, costs should be in the order of 10/- to 15/- per foot. 40

During drilling, depth of each run and particulars of the ground intersected by the drill would be recorded in a log by the drilling supervisor. Drill cuttings would be sampled and assayed. Tonnage and grade would be computed from assay results and data in drill logs. Drill samples would be bulked together and subjected to separation testing to determine most suitable treatment methods and probably mineral recoveries under operating conditions. 10

PROCESSES:

A close study of the various iron-making techniques would be necessary. Principal methods include both electric pig iron smelting, with or without preheating and pre-reduction of the ore, and the manufacture of sponge iron products by direct reduction methods. Processes capable of producing enriched slags or cinders, suitable for manufacture of titanium and vanadium by-products, would receive particular attention. 20

Bulk samples of titanomagnetite, ilmenite, coal and other raw materials would have to be sent overseas for metallurgical testing to determine composition of products to be expected from a particular process, metal recoveries, whether titanium and vanadium by-products could be extracted, and to indicate costs on a commercial scale.

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GOVERNMENT:

Discussions on a Ministerial level would be necessary to determine the extent of Government aid and participation. Subjects discussed would doubtless include taxation, subsidies, protective tariffs, rail freights, housing, long-term mineral concessions, and other matters beyond the province of this report.

ECONOMIC STUDIES:

These would cover various processes, plant locations, production-rates and use of different raw materials. Examples which come to mind include: 40

1. Direct reduction plant located at Auckland. Production restricted to



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- sponge iron products. Sponge iron refined in Fletcher plant. Excess sponge iron exported. Annual production - 150,000 tons; 350,000 tons. Raw materials: Waikato coal; titanomagnetite; blend of titanomagnetite and ilmenite.
2. Steel plant incorporating direct reduction methods located at Auckland with and without by-product plant. Annual production : 150,000 tons; 350,000 tons; 500,000 tons. Raw materials: Waikato coal; titanomagnetite; blend of titanomagnetite and ilmenite. 10
  3. Steel plant incorporating direct reduction methods located at Lake Taharoa, with and without by-product plant. Annual production: 350,000 tons; 650,000 tons, 1,000,000 tons. Raw materials: Waikato coal; Taranaki coal; titanomagnetite. 20
  4. Steel plant incorporating electric smelter and by-product plant, located at Invercargill, with and without preheating and/or pre-reduction. Power source: Dusky Sound scheme financed by private enterprise; N.Z. electricity system. Annual production: 1,000,000 tons; 2,000,000 tons. Raw materials: Ohai coal; Benhar coal; titanomagnetite; ilmenite; blend of titanomagnetite and ilmenite. 30

APPROXIMATE COSTS AND DURATION OF THE PROGRAMME

The duration and costs of a programme to evaluate N.Z. iron sand resources will be largely influenced by the extent of Government aid and other uncertain factors such as accessibility of deposits, the number and depth of drill holes required and the ultimate scale of the steel-making operations envisaged. As a result, time and cost estimates are difficult to make at this stage. 40

In the following estimates it is assumed that -

1. Government aid is restricted to assays, testing of samples, etc. by D.S.I.R.
2. Duration of the programme is 2 years;

3. Drilling, other than shallow hand drilling, is performed by outside contractors.

Personnel: The field unit would be manned more or less along the following lines:

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<u>Occupation</u>	<u>No. Required</u>	<u>Cost/Year</u>	
Chief Engineer	1	£5,000	10
Asst. Chief Engineer	1	2,500	
Junior Engineers or geologists	3	5,000	
Office Manager	1	2,500	
Prospectors	2	3,500	
Miscellaneous: Clerk, mechanics, drivers, cook and general	<u>12</u>	<u>19,000</u>	
	<u>20</u>	<u>£37,500</u>	

The Chief Engineer would preferably be a graduate from a recognised mining school or university of at least 10 years standing. In addition to possessing an adequate knowledge of mining and metallurgical methods he should have extensive experience in exploration techniques and the economic appraisal of mining properties. He should also possess the administrative and organising ability necessary for the successful operation of the programme. 20

The assistant-chief engineer would be a graduate from a recognised mining school or university of at least 5 years standing, preferably with experience in mineral exploration. Recent graduates with good academic records would be suitable for the more junior positions. 30

The prospectors would be employed for reconnaissance and scout drilling ahead of the main field party. The main qualifications required would be experience in prospecting and the ability to work under rough conditions.

Equipment: Principal items would include trucks, jeeps or Land Rovers, light tractors, trailers, shallow drilling equipment, sampling and survey equipment, portable pumping sets, tanks, pipes, miscellaneous tools, camping gear and office equipment. Deep drilling plant would be supplied by the outside contractor. The sum of £30,000 has been allowed for equipment. 40

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Drilling Costs: Average depth of drill holes would probably be about 150 feet. Assuming total drill footage would be 100,000 feet costing 15/- per foot, total drilling cost would be £75,000.

Miscellaneous Items: The following costs have been allowed:

Metallurgical testing, including freight and handling of bulk samples	£10,000	10
Fees payable to overseas experts	10,000	
Travelling Expenses	10,000	
Administration	15,000	
Expenses in acquiring and maintaining exclusive prospecting rights and contingencies	25,000	
	£70,000	
<u>Total Costs of Investigation:</u>		20
Personnel (2 years)	£75,000	
Equipment	30,000	
Drilling	75,000	
Miscellaneous	70,000	
Total field expenditure -	£250,000	

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NEW ZEALAND MINING LEGISLATION

As in Australia, the ownership of gold has always been vested in the Crown and, under relatively recent Acts, the ownership of petroleum and radio-active minerals has also been assumed by the Crown. 30

Prior to 1893 minerals, other than the previous metals, became private property whenever land was alienated from the Crown, and the owner alone had the right to mine such minerals or to negotiate for their exploitation. In the case of all freehold titles granted after 1893, the ownership of the minerals was retained by the Crown.

Mining and prospecting for gold and other metals and minerals except coal, petroleum and precious stones is governed by The Mining Act, 1926. 40

The Act provides for the constitution of Mining

Districts and Warden's Courts and then defines the lands subject to it. The main point is that Crown lands within a mining district are declared to be available for mining, i.e. all lands which have not been alienated from the Crown without reservation of mineral rights, and also such other lands (notably Maori lands) subject to any agreement whereby the Crown is authorised to grant mining titles. 10

Lands which are not open to mining are those set aside as public reserves, endowments and reserves for Maori purposes, and also fee simple land which has no mineral reservation attached. However, provision is made for bringing public reserves within the operation of the Act if needed for mining purposes, whilst Maori Land may be opened for prospecting or ceded for mining by the Maori Land Court, providing the owners are agreeable. 20

The Act also deals with Minors Rights, prospecting titles, claim licences, water rights and other mining privileges. A Miner's Right forms the basis of all operations under the Mining Act, and without it a person cannot legally prospect, mine or peg out a claim. The term "Person" includes mining partnership and incorporated or registered companies.

Prospecting and mining rights are granted by the Governor-General in respect of Native lands, by the Warden in the case of lands open for mining in a mining district, or by the Commissioner for Crown Lands in the case of lands open for mining, but which are situated outside a mining district. 30

For the prospecting and mining of iron sand deposits, the most practicable forms of title under the Act, appear to be the Mineral Prospecting Warrant and the Mineral Licence. The rights and conditions pertaining to these titles are as follows:

MINERAL PROSPECTING WARRANT:

Area: The maximum area obtainable under one M.P.W. is 10,000 acres. There is no limit to the number of the M.P.Ws which may be taken up. 40

Land: Both Crown and private land may be taken up under M.P.W. In the case of private land, the granting of the M.P.W. is subject to obtaining the consent of the owner and lessee in writing.

Duration: A Mineral Prospecting Warrant remains in force for 5 years.

Rights of Holder: The holder of any M.P.W. has the exclusive right to prospect on the subject land for minerals specified in the warrant, other than gold.

Deposit: Every application for a Mineral Prospecting Warrant must be accompanied by a deposit of £50 for the first 1,000 acres and a further £25 for each additional 1,000 acres or part thereof. Deposit may be refunded if holder complies with requirements of the Act and conditions of the Warrant. 10

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Rent: The rent payable is 1d an acre per annum for the first 2 years, 2d for the third year, 3d for the fourth year and 6d for the fifth year. 20

Compensation: Compensation may be payable to the owner and occupier of private land.

Labour Conditions: Within three months after the issue of a Mineral Prospecting Warrant, the holder must employ at least 2 workmen for each 100 acres or part thereof. Licence may be cancelled for non-observance.

Reports etc. required: Every six months, the holder is required to submit a statement of prospecting expenditure incurred in the preceding six months, and also a short report outlining the nature of the prospecting operations carried out during the same period. 30

MINERAL LICENCE:

Area: The maximum area under one Mineral Licence is 320 acres. There is no limitation on the number of Licences which may be taken up.

Land: Crown land, within or outside a district, may be occupied under Mineral Licence. Private and native lands must first be resumed for mining purposes before any mineral licence can be granted. In certain cases, the consent of the owners and occupiers is required before resumption can take place. 40

Marking out: The applicant for a Mineral Licence must mark out the land required in the prescribed manner.

Duration: Maximum term of a Mineral Licence is 42 years.

Rights of Holder: The Licence permits the holder to mine any metal or mineral specified in the licence, other than gold. 10

Deposit: Each application for a Mineral Licence must be accompanied by the licence and registration fees, survey fees, and six months rent. In the case of a Mineral Licence covering 320 acres the sum required would be approximately £60.

Rent: The annual rent payable in respect of a Mineral Licence is 2/6d per acre or fraction thereof.

Compensation: Compensation may be payable to the Owner and occupier of private land. 20

Royalties: Royalties are fixed by negotiation.

Labour Conditions: For the first 2 years, the holder must employ at least 1 workmen for each 50 acres or part thereof. Thereafter, at least 2 workmen must be employed for every such area. The holder may apply to the Warden for a reduction of the prescribed number of workmen.

MINING AGENT: Provision exists in the Act for the appointment and registration of mining agents. A registered mining agent has the right to act and appear for parties in all proceedings in any Warden's Court within a specified district. 30

MANAGER'S CERTIFICATES: A person employed or acting in the capacity of mine manager of any mine in which more than 12 men are employed at any one time above ground, or more than 6 men below ground, must be the holder of a mine manager's certificate under the Act. British and foreign certificates may be recognised.

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MINERAL CONCESSIONS: There are no provisions in the Act for the granting of mineral concessions. In view of the large amounts of capital required to develop N.Z. iron sand resources, the need to protect such capital, the extent of the deposits, and the consequent difficulties in applying for and holding the numerous mineral licences required; some form of mineral concession embracing all the areas of economic interest would be highly desirable. 10

A.G. Palmer

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Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

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-40-

COPIES OF CORRESPONDENCE FOLLOWS

\* \* \*



Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

(C O P Y)

AGP/BB

18th February, 1959

The Under-Secretary,  
Department of Mines,  
WELLINGTON. N.Z.

Dear Sir,

10

At rather short notice I have been instructed to make a preliminary examination of the New Zealand Iron Sands with a view to their possible development and exploitation.

I will be leaving for New Zealand by air on Tuesday, 24th February and will arrive in Wellington 25th February. I hope to complete my investigations in about ten days or so.

During my stay in Wellington I would like to obtain information concerning:-

20

1. Location, reserves and mineral composition of the principal iron sand deposits.
2. Location and reserves of coal and other raw materials required for the production of steel.
3. Completed and projected power stations; hydro-electric potential etc.
4. Previous attempts to exploit the deposits and reasons for their failure.
5. Existing mining leases, prospecting areas, concessions etc. and present activity.
6. Communications, port facilities, freights, etc.
7. Cost of labour, etc.
8. The extent to which the Government would be prepared to assist in the development of a steel and titanium industry.

30

I presume that most of the information required is available from official reports and other material in Wellington, and that there

40

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

will be no necessity for me to visit the areas  
concerned at this juncture.

However, as time will be rather short, I  
would be very grateful to have the benefit of your  
Department's help and advice so that my investigations  
can be completed as quickly as possible.

Yours faithfully,

10

(Sgd.) A.G. PALMER.

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

(C O P Y)

9th March, 1959

The Honourable F. Hackett,  
Minister for Mines,  
Parliament Buildings,  
WELLINGTON. N.Z.

Dear Mr. Hackett,

10

New Zealand Iron Sand Deposits

---

Since discussing this matter with you and Mr. Higgins in Wellington last week I have realised that I may have misunderstood your remarks concerning control of a company formed to develop and exploit iron sands in New Zealand.

At the time I assumed from our conversation that the Government wants to control the company by itself holding at least 51% of the shares.

20

I now realise that your remarks could have had an alternative meaning, namely, that the company would have to be controlled in New Zealand by the New Zealand public, not the Government, holding at least 51% of the shares.

I would be very grateful if you would clarify the position by kindly advising which of the two alternatives is correct. I am sorry to trouble you again, Mr. Hackett, but the point is a vital one.

Yours very truly,

30

(Sgd.) A. G. PALMER.

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

(C O P Y)

OFFICE OF THE MINISTER OF MINES

WELLINGTON.

16th March, 1959

Mr. A.G. Palmer,  
Mining Engineer,  
Mercantile Mutual Building,  
117 Pitt St.,  
SYDNEY. N.S.W. AUSTRALIA.

10

Dear Sir,

I refer to your letter of 9th March, 1959.  
Of course nothing definite has as yet been settled in  
regard to the iron and steel industry based on iron-  
sands, though the Government is anxious to push on  
with the project once the preliminary and investigatory  
work is disposed of. Similarly then, the financial  
aspects have had no consideration as yet, and it of  
course would be too early to specify the extent of  
Government participation. 20

It could, however, be expected that the  
Government would wish New Zealand interests to retain  
effective control of the industry when established.

Yours faithfully,

(sgd.) F. HACKETT  
MINISTER FOR MINES

Exhibit 5 - Palmer's  
Preliminary Report,  
April 1959

(C O P Y)

MASON BROS. MESCO. LTD.,

AUCKLAND. NEW ZEALAND.

11th March, 1959

Mr. A. G. Palmer,  
Mining Engineer,  
117 Pitt St.,  
SYDNEY. NSW. AUSTRALIA.

10

Dear Sir,

R-N PROCESS

Further to our discussion when you visited our office recently, I have written to Republic Steel Corporation for further copies of the R-N brochure and technical paper by Stewart & Work and these will be sent on to you immediately they are to hand.

You will appreciate that without knowing who we are dealing with we do not feel inclined to pass on technical data which we have compiled relating the R-N process to N.Z. ores and conditions, but if you are able to put us directly in touch with your principals, we may be able to discuss the matter further.

20

Yours faithfully,  
p.p. MASON BROS. (MESCO) LTD.

(Sgd.) N. LEMAN  
Manager.

28th April, 1959.

Stanhill Pty. Ltd.,  
G.P.O. Box 5079AA,  
MELBOURNE. VICTORIA.

DR. TO A.G. PALMER:

To professional services as hereunder:

Preliminary investigation of New Zealand iron sand resources including visit to New Zealand from 24th February to 8th March, technical and economic studies and report on same:-	£250. 0. 0	10
Visit to Melbourne and conference at Stanhill Pty. Ltd. on 21st/22nd April	15.15. 0	
Add balance as per attached schedule	<u>29. 9. 0</u>	
	<u>£295. 4. 0</u>	

oOo

PRELIMINARY INVESTIGATION - NEW ZEALAND  
IRON SAND RESOURCES

Schedule of expenses incurred on account of Stanhill Pty. Ltd. during visit to New Zealand from 24th February to 8th March and visit to Melbourne on 21st/22nd April.

	Debit.		Credit.
	N.Z.	Aust.	Aust.
	currency.	currency	currency
Cash drawn			£100.0.0 10
* Air fare - Sydney to Auckland & return	-	-	
Air fare - Auckland to Wellington		£8.10.0	
Air fare - Wellington to Auckland	£6.15. 6		
Air fare - Sydney to Melbourne & return		20.16.0	20
Car & rail fares - Sydney & Melbourne		6.15.0	
Car & rail fares - New Zealand	6. 6. 4		
Meals	2. 3. 0		
Accommodation - Wellington	29.18. 6		
** Accommodation - Auckland	-		30
*** Accommodation - Melbourne	-		
Maps	1. 7. 6	1. 0.0	
Official publications & photo-stats	2. 6. 6	1. 3.0	
Typing draft and final copies of report and misc. correspondence		<u>29.16.6</u>	40
	48.17. 4	68. 0.6	
Add exchange adjustment		<u>61. 8.6</u>	
			£129.9.0
		Debit balance	<u>£ 29.9.0</u>

oOo

\* A/C paid by Stanhill Pty. Ltd.  
 \*\* " " " Holeproof (N.Z.) Ltd.  
 \*\*\* " " " E.R. Hudson

AGP.

QUEENSLAND MINES LIMITED

NORTHBOURNE CHAMBERS  
NORTHBOURNE AVENUE, CANBERRA

Melbourne Office  
461 St. Kilda Rd., SC2  
Telephone BM3685

Telephone  
Canberra J 2927

CONFIDENTIAL

28th. April, 1959.

Mr. A.G. Palmer,  
Mining Engineer,  
Mercantile Mutual Building,  
117 Pitt Street,  
SYDNEY. N.S.W.

10

Dear Mr. Palmer :

re NEW ZEALAND IRON SANDS

In response to your letter of the 24th. instant I wish to advise that -

- (a) Your letter to the Minister of Mines, Wellington, was airmailed today, unaltered, plus the schedule showing prospecting areas.
- (b) Your letter to the Minister for Industries and Commerce, Wellington, was also airmailed today with a copy of the above letter and schedule.

20

The copies of the above documents for our files are duly acknowledged, as well as the photostat of the editorial contained in the latest issue of the "Mining Journal" published in England. Thanks for this submission.

I await to receive your report on the New Zealand visit which you advise is in the process of being typed.

30

re NEW ZEALAND DEVELOPMENT CORP. LTD.

At Mr. Hudson's request we have photostated a copy of the application of the N.Z. Development Corp. Ltd. to the Government, for you, and enclose same herewith.

Yours sincerely,

Enc.

I. Redpath



MINUTES OF A MEETING OF DIRECTORS OF FACTORS  
LIMITED HELD AT 461 ST. KILDA ROAD MELBOURNE  
ON WEDNESDAY APRIL 29, 1959.

A.34

DIRECTORS PRESENT:

Mr. W.O. Burt (In the Chair)  
Messrs. S. Korman, H. Korman, C.R. Daley  
I.K. Redpath, D. Korman, L. Korman and  
E.E. Fookes.

Mr. J.C. Carrodus and the Secretary were in  
attendance.

10

MINUTES:

Minutes of a meeting of Directors held on  
April 15, last were read by the Directors and  
signed by the Chairman as a true and correct record.

HOLEPROOF INDUSTRIES LIMITED:

It was agreed that Mr. West should take the  
necessary steps to acquire the balance of the shares.

It was resolved that a form of authorisation  
under the Seal of the Company be forwarded to  
Mr. Hilel Korman to sign all notices necessary in  
the opinion of Mr. West.

20

Mr. H. Korman was requested to arrange for  
Holeproof Industries Limited to request the Auck-  
land Stock Exchange to delist the ordinary shares.

QUEENSLAND MINES LIMITED:

It was resolved that the Secretary be auth-  
orised to notify the Stock Exchange and Press that  
this Company had acquired a 51% interest in Queens-  
land Mines Limited.

The release of the information should coin-  
cide with the release by Australasian Oil Explor-  
ation Limited of similar information and in the  
form of the statement as presented to this meeting.

30

KAYS' AUTO LEASE:

Mr. Carrodus reported that he had informed  
Mr. Katranski that in future we would only be able  
to handle the Auto-lease contracts at a flat rate  
of 13 per cent.

It was resolved that Mr. Carrodus be com-  
missioned to endeavour to arrange to discount the

40

present Kays business without loss to this company.

SPLITTING OF NOTES FROM OPTIONS:

Mr. Burt reported that he had not proceeded any further in this matter as W.P. Ham & Co., had indicated that they were now in two minds on the matter.

10

Mr. Burt was requested to discuss the matter further with Mr. Jamison of W.P. Ham & Co.

LUNCHEON FOR BROKERS:

It was resolved that a luncheon be held on June 4, next at Chevron for the Share Brokers who had supported the Mortgage Debenture Issue.

READ AND CONFIRMED

W.O. Burt  
CHAIRMAN

24/7/59

20

QUEENSLAND MINES LIMITED

Account No.

*Application & Affidavit*

*Hr.*

Account No.

Sheet No.

Sheet No.

1919		1959	
Month	Day	Description	Amount
Jan	31	to Unallocated Capital	4250
May	5	By Cash	4250

EQUITY DIVISION  
GORDON WOOTEN J.

*Old Dividend v. Dividend*

PP's EXHIBIT 22

17/10/74 *Jane Kelly*  
ASSOCIATE

12,000,000 - Shares of 5/- each

Account No.

Nominal Capital

Account No.

Sheet No.

Sheet No.

1959

						Jan 29	By Unissued Shares	5/-	12,000,000
						1966			
						Jan 1	By Unissued Shares		6,000,000 00
							At the new Ledger		
							of # 5111		

# Unallocated Shares

1959				1959			
Jan 19	To Nominal Capital	1	3,000,000	Jan 19	By Subscribers Shares	1	1 15
	2,497,995.50			19/1	.. Unallocated Capital		245,000
					.. ..		355,000
				19/1	.. Balance c/o		50,000
							2,497,995.50
1957			3,000,000				3,000,000
Aug 1	To Balance b/w		2,497,995.50				
1966							
Jan 1	To Balance		4,497,996.50				
	1/1 to new ledger						
	21. 11. 2/12						

Exhibit 22 - Ledger of 959. Queensland Mines Limited

# Uncalled Capital

C3

1957		1957		1957		1957	
Jan 19	To uncalled share	1 15	April 21	By Anderson & Co	24500		
April 21	"	245000		" Application	4250		
"	"	255000		" Callson share	25500		
	225250, 53000	500000 15		" Cash	1 15		
			June 25	" Uncalled Capital	22250		
			July 1	" Balance of	247000 15		
					153000		
1959		500000 15	1959		500000 15		
Aug 1	To Balance b/d	153000	Aug 18	By Callson share	12750		
	51000		Oct 5	"	8500		
			Nov 17	"	12750		
			Dec 21	"	8500		
			Jan 15	"	12750		
			Jan 30	"	8500		
			Mar 15	"	63750		
			Apr 22	"	8500		
			May 16	"	4200		
			June 15	"	4200		
			June 15	"	12750		
			July 22	"	8500		
			July 31	Balance of	51000		
1960		153000	1960		153000		
Aug 1	To Balance b/d	51000	Aug 12	By Callson share	4200		
			Oct 6	"	4200		
			Dec 29	"	4200		
			Jan 10	"	4200		
			July 31	Balance of	34800		
1961		51000			51000		
Aug 1	To Balance b/d	34800					
1961							
Jan 1	To Balance	62,000 00					
	1/2 to new ledge						
	1/2 " 2112						

1957				1959			
Apr 21	To unrec'd Capital	1/2	25500	May 5	By Cash	CB1	25500
June 15	" " "	1/2	72250	June 25	" " "	CB1	72250
			97750				97750
			97750				97750
Aug 15	To Cancellation	1/5	12750	May 18	By Cash	CB3	12750
Oct 5	" " "	"	8500	Oct 5	" " "	"	8500
Nov 17	" " "	"	12750	Nov 17	" " "	"	12750
Dec 21	" " "	"	8500	Dec 21	" " "	"	8500
Jan 15	" " "	1/6	12750	Jan 15	" " "	"	12750
30	" " "	"	8500	30	" " "	"	8500
Mar 15	" " "	1/7	3750	May 21	" " "	CB7	57750
Apr 22	" " "	"	8500	July 31	" " "	CB9	17000
May 16	" " "	"	4250				20750
June	" " "	1/8	12750				21250
July 22	" " "	"	8500				22000
			102000				102000
1960			4250	1960	By Cash	CA10	4250
Aug 26			4250	Aug 26	" " "	"	4250
Oct 6			4250	Oct 6	" " "	"	2125
Dec 23			4250	Dec 23	" " "	"	2125
1961			4250	Jan 10	" " "	"	925
Mar 23			1125	Mar 23	" " "	"	1250
Apr 10	Write Back	CB13	1000			"	1125
			1125			"	1000
			20325	July 29	" " "	CA15	1800
			1525		Adverse	1/6	1525
			20325		Balance c/d		1525
			1525	1962			20325
Aug 1	To Balance c/d		1525	July 31	By Cash	14	1525

AMOUNTS DUE - ASSOCIATED COYS: KATHLEEN INVESTMENTS (AUSTR) LTD - ADVANCEE

Account No.

Sachas Ltd. Loan A/c

6001 FI

Account No.

Sheet No.

Sheet No.

Assigned vide Agreement May 12, 1964

1959

1959

1959	June 2	To Cash	CDI	5500	1959	June 3	By Cash	CDI	500
	June 8	..	CDI	1500		June 8	..	CDI	1500
	July 24	..	CDI	2000		July 31	..	CDI	12750
	July 31	.. Balance c/d		12750		July 31	..	CDI	14750
				14750					14750
1960	July 31	To Balance c/d		15377 14 10	1960	July 1	By Balance b/d		15377 14 10
					1960	Dec 5	.. Cash	CDI	1450
					1960	July 31	.. Interest	CDI	141 50
									1377 14 10
1961	July 31	To Development	File	256 6	1960	Aug 1	By Balance b/d		15377 14 10
		.. Balance c/d		16482 18	1961	July 1	.. Interest	File	1251 9 2
				16482 18					16659 14
					1961	Aug 1	By Balance b/d		16659 14
					1961	Jan 1	By Balance		22805 10
							TF to new ledger		
							CP N: 1743		



# Sundry Creditors

18/11/51

1958				1959			
Jan 31	To New Develop		2600	Feb 31	By New Develop		2690
July 31	.. Free Waterhouse Ltd	134	84	Feb 31	.. New Develop	11	84
	.. Barons Ltd		2690				
			84				
			2774				2774
Dec 1 1960	To Free Waterhouse Ltd	110	84	Aug 1	By Barons Ltd		84
July 31 1961	.. Balance c/d		8916 10	July 31	.. Freight fees	15	84
					.. Liberty Bellows Pty Ltd		2650
					.. .. .. K. Hudson		4170
					.. .. .. .		1562 10
			9000 10				9000 10
Jan 31 1962	To K. Hudson	107	300	Aug 1	By Balance c/d		8916 10
	.. Balance c/d		8616 10				8916 10
			8916 10				8916 10
Feb 15	To Cash - Misc. Waterhouse		84	Feb 1	By Balance c/d		8616 10
July 31	.. Sydney R. Hudson	121	2000	July 31	.. Bluebird Apt. 100	158	158 11 6
	.. J. Ridgway		1000		.. Light - backillary		8 1
	.. Balance c/d		2371 15 6		.. Tax - Tel. & Trades		10 10
					.. Payment - C. B. K. today	11	250
			9395 15 6		.. Management - J. P. R.	122	255 10
					.. .. .. .	124	60
							9515 15 6
Apr 1 1963	To Cash - C. Trades	15	10 10	Aug 1	By Balance c/d		5371 15 6
	.. Misc. Waterhouse		60	July 31 1963	By New Develop	11	390
	.. Backillary		8 1		.. Acc. Audit Fee	130	10
July 31	To Sydney Blue		71 8 6		.. 200 Misc. Waterhouse		
	.. New Develop	126	250		.. 200 Cash Trades		
	.. R. O. G		1700				
	.. J. Ridgway		1270				
	.. K. Hudson		3379 19 6				
	.. Misc. Bus. / H. B. Hill	129	10 10				
	.. Balance c/d		5321 15 6				
1964			5321 15 6				5321 15 6
Apr 1	To Cash - Misc. Waterhouse	11	10	Aug 1	By Balance c/d		2365
	.. .. ..		20				
	.. Balance c/d	18	2365				
			2365				2365

SUNDRY CREDITORS

Year	Date	Description	Account	Debit	Credit	Year	Date	Description	Account	Debit	Credit
1964	Sept 24	ACE	lyd CB7	742 10 -		1964	Apr 30	Balance			
	24	ER Hudson	cash	319 8 4				E.R. Hudson - salary	b/f	1562 10 -	
Nov	19			1562 10 -				A.O.E. - manag. fees	b/f	742 10 -	
July	31	Balance	old	2,124 141 -		1965	Apr 30	ER Hudson	CB7	319 8 4	
						July	31	Acc'd - fenses - rent	J32	76 - -	
								Audit Fees	J33	60 - -	
				2765 8 4				Lease rent due Plain D.	J32	5 - -	
1964	Dec 31	Acc'd Rent	J36	60 - -		1964	May 1	Balance	b/d	141 - -	
		Rent fenses		76 - -		Dec 31		Acc'd Rent fenses	J36	14 - -	
		20 Bica-a		123 10 -				Audit	J36	55 - -	
				1,259 10 -				Group Tax	CB 15	10 10 -	
										123/101-	1,259 10 -
1965	Jan 30	20 Bica-a	19	19 10 -		1965	Jan 1	By Balance			
		Acc'd Whitehouse						Lease Rent due Plain D.		5 - -	
		Acc'd 31/1/65		60 - -				Acc'd Rent - fenses		14 - -	
Dec 31		P.W. Co.		79 10 -				Audit		55 - -	
		Acc'd 31/12/64	20	25 - -		Dec 31		Group Tax		19 10 -	
		Journal - Reversal	JF	10 10 -				By Journal - 4444		123 10 -	
		Bica-a		12 10 -				E. R. Hudson	38	260 - -	
				340 6 -				Journal - Audit		60 - -	
				1,503 16 -				Extra Grat		15 6 -	
								E. R. Hudson		115 - -	
										310/61-	1,503 16 -
						1966	Jan 1	By Balance			
											350 6 -
											760 60
								TF to new Ledger			
								etc. 2nd			

Queensland Mines Ltd

Secretary's Ledger

CLS  
 Account No. 22  
 Sheet No. 1

1966				1966			
July 13	Deb to Bank	21	20 60	Jan 1	By Balance	CS	760 60
	"	"	610 00	Jan 2	By J. Navion	CS	332 65
	"	"	120 00				
Jan 31	Balance	90d	760 60				
			332 65				
			1093 25				1093 25
July 13	Bank	25	174 35	Jan 1	Balance	90d	332 65
Jan 31	A.B.W.	27	8 30	Jan 2	CRB. Genl. Tan	CS	154 90
	CRB	3	150 00	Jan 2	Navion - PTE	CS	2197 44
31	Balance	90d	50 564 09				
			50 896 74				50 896 74
1967				1968			
Apr 24	Imprest	JA9	2 197 44	Jan 1	Balance	61d	50 564 09
Jan 1	Reversal	"	5 003 00	May 22	Sundries	JS1	17 095 52
May 22	Explorati	CB7	2 437 95				
	Share Registry	CS7	8 500 00				
	Reversal	JA9	154 90	June 19	"	JS7	53 635 35
	Carl	CS7	26 435 72	July 17	"	JS8	3 961 12
July 17	"	11	41 028 96	July 17	Payroll Tax	JS6	145 042 60
Jan 19	Imprest	JS7	177 28	Aug 14	Sundries	JS6	145 191 06
	Credits Received	JS7	103 08	Aug 14	Suspense	JS6	32 986 07
July 17	Imprest	JS8	2 588 36	Sept 11	Audit Fees	JS6	161 96
" 17	Credits Received	JS8	653 94	Sept 11	Sundries	JS6	115 33 00
Aug 14	Carl	14	87 280 63	Oct 9	Purchase fee	JS6	350 00
" 14	Imprest	JS6	63 041 65	Nov 6	Mount for Suspense	JS6	175 627 09
" 14	Credits Received	JS6	834 94	Nov 6	Purchase fee	JS6	58 691 55
" 14	Imprest	JS6	13 22	Nov 6	Wages - Salaries	JS6	237 386 64
				Nov 6	Mount for Suspense	JS6	27 917 74
Sept 11	Audit Fees	CS15	148 43	Nov 6	Purchase fee	JS6	265 298 38
" 11	Carl	15	650 00	Dec 4	Imprest	JS6	20 016 43
" 11	Imprest	JS6	9 917 52	Dec 4	Wages - Salaries	JS6	611 66
" 11	Payroll Tax	JS6	163 896 39	Dec 4	Mount for Suspense	JS6	245 04 50
			791 08	Dec 4	Purchase journal	JS6	172 59
			161 96	Dec 4	Sundries	JS6	234 39
							213 11
			164 839 43				27 245 83
							1 124 79
	FORWARD				FORWARD		314 845 12

OLS

Account No.

~~227~~

Sundry Credit

Sheet No.

1

1968

1968

Sept 11	FORWARD		164 839	43	Dec 4	FORWARD		314 848	12
11	Credit Received	J62	474	61	4	Payroll Tax	J67	178	56
Oct 9	Cash Books	18	165 316	06		43,787.20	J68	315 026	69
9	Imprest	J63	71 203	62	31	Sundries	J64	16555	35
9	Purchase Inv.	J63	805	07	31	Payroll Tax	J64	169	05
Nov 6	Imprest	J64	221	80		38,915.00	J69	231 751	08
Dec 4	Cash Books	22	257 546	53	31	Creditors (Mr Jia)	J70	13 208	00
4	Imprest	J66	1965	72	31	Various (Sydney)	J70	8 374	66
4	Freight	J67	239 510	25		60,497.72	J70	353 333	74
4	Payroll Tax	J67	30 803	34	31	"	J70	322	00
Dec 31	Cash Books	24	841	13	31	"	J71	1735	78
31	Imprest	J68	271 154	72	31	GPD - Flying	J71	353391	52
31	Wages & Salaries	J68	0	80	31	Quilid	J73	5193	80
31	Sydney Credit	J69	83	96	31	Insurance	J73	2000	00
31	Balance	CP	271 339	48		70844 20		2000	00
			18 957	82				2000	00
			1270	66				2000	00
			931	20				2000	00
			436	86				2000	00
			70 549	30				2000	00
			363 385	32				2000	00
			363 385	32				2000	00
1969					1969				
Jan 29	C.T.B.	27	47 956	75	Jan 1	Balance	6/d	70 549	30
Feb 26	"	28	38 430	38	Jan 29	Various	J75	28 150	47
Mar 26	"	30	25 659	46	Feb 26	"	J76	25 183	25
Jun 29	"	27	262	00	Mar 26	"	J77	21 297	28
" 29	Imprest	J75	1 464	29	26	Share Registry	J77	48	00
Feb 26	"	J76	1 162	30	26	Exploration	J78	36	00
Mar 26	"	J76	1 583	76	Apr 23	Various	J78	23,551.56	56
26	Exploration	J77	5 193	80	Apr 23	Various	J78	58,194.21	21
Apr 23	CTB	32	121 712	74	May 21	"	J79	93,888.25	25
23	Imprest	J78	21 647	21	June 18	"	J81	171 562	83
May 21	CTB	33	724	97	18	Suspense	J81	56	62
21	Imprest	J79	744 054	92	July 16	Various	J83	447 535	15
June 18	CTB	36	5	30	July 16	Various	J83	117 610	60
18	Imprest	J80	37 937	23	July 16	Various	J85	505 145	75
18	Plant & Equipment	J81	152 027	45	Aug 13	Various	J85	106 866	86
			64 576	27	Sept 10	Sundry Credit	J86	672 012	61
			779	70	Oct 8	Various	J88	126 465	52
			247 353	42	Nov 5	"	J89	795 478	13
			132	00				131 576	99
			247 515	42				929 475	12
								133 041	50
								1063 036	62

AMOUNTS DUE: ASSOCIATED COMPS - AUSTRALASIAN OIL EXPLORATION LTD -  
CURRENT A/C **J.S.** Account No.  
*Inter Due A.O.K.*

Account No.

Sheet No.

Sheet No.

1961			1962					
July 31	To Interest Adjusted	f17	9 13 9	July 31	By Interest on	f16	630 4 6	
	Balance b/d		620 10 9				630 4 6	
1962			630 4 6				630 4 6	
July 31	To Balance b/d		2482 3 7	Aug 1	By Balance b/d		630 4 6	
				1962				
				July 31	Interest on loan	f22	1841 12 10	
1963			2482 3 7				2482 3 7	
July 31	To Balance b/d		4343 16 5	Aug 1	Balance b/d		2482 3 7	
				1963				
				Jan 31	Interest on loan	f25	2415	
				July 31		f27	250 16 5	
			4343 16 5				4343 16 5	
July 31	To Management Balance	f33 c	110 . .	Aug 1	By Balance b/d		4343 16 5	
		b/d	6432 15 4	1964				
				Jan 31	Interest on loan	f31	930 16 5	
				Apr 30	" " " "	f31	52 14 12 70	
				July 31	" " " "	32	465 8 7	
					July 31	lease rentals	f33	104 6
							110 . .	
							123 . .	
			6542 15 4				6542 15 4	
Dec 31	Reversal 133	f35	123 - -	Aug 31	Balance	b/d	6542 15 4	
	Balance	c/d	7433 10 -	Dec 31	Int	f35	775 13 8	
					Interest on loan	f35	345 1 . .	
							7554 10 . .	
			7556 10 -				7556 10 . .	
1965				Jan 1	Balance	b/d	7433 10 -	
Dec 31	To Journal	f29	1861 12 10	Dec 31	By Journal	f29	1861 12 10	
	Balance		7433 10 . .				9195 2 10	
			9295 2 10				9295 2 10	
				1966				
				Jan 1	By Balance		9295 2 10	
							7433 10 . .	
							14867 00	
					Tf. to new ledger at N° 1741			



1960

1961

July 31	To Furniture Sydney office	/10	14	5	1	July 31	By Deall of amt	/11	678	7	11
	.. Stanley office	.	96	6							
	.. M Gta Office	.	35	2	5						
	.. Motor Vehicle	.	460								
	.. Office Machine	.	72	14	5						
			678	7	11				678	7	11
1961						1961					
July 31	To Furniture Sydney	/15	14	5	1	July 31	By Lane Development	/17	678	7	11
	.. Stanley S	.	96	6							
	.. M Gta office	.	35	2	5						
	.. Motor Vehicle	.	460								
	.. Office Machine	.	72	14	5						
			678	7	11				678	7	11
1962						1962					
July 31	To Furniture Sydney J.23		14	5	1	July 31	By Lane Development J.23		286	18	3
	.. Stanley S	.	96	6							
	.. M. Gta	.	35	2	5						
	.. Motor Vehicle	.	70								
	.. Office Machine	.	72	14	5						
			286	18	3				286	18	3
1963						1963					
Jan 31	Furniture Sydney J.25		7	2	7	Jan 31	By Lane Development J.25		143	9	1
	.. Stanley S	.	118	2		July 31	" " J.30		60	6	2
	.. M. Gta	.	16	16	11						
	.. Motor Vehicle	.	45								
	.. Office Machine	.	26	7	2						
July 31	Furniture Sydney J.29		72	6							
	.. M Gta	.	16	16	5						
	.. Office Machine	.	36	7	3						
	60. 6. 2		203	15	3				203	15	3
			203	15	3				203	15	3

Depreciation Provision

1960

1960		1961		1962		1963	
July 31	To Balance c/d	678	7 11	July 31	By Sydney office Furniture	/10	14 5 1
					Blankety St	/10	96 6
					Mt Isa office	/10	35 2 5
					Motor Vehicle	.	460 . .
					Office Machine	.	72 14 5
		678 7 11				678 7 11	
July 31	To Motor Vehicle /10	560 . .		July 31	By means c/d		678 7 11
	Balance c/d	796	15 10	July 31	Sydney office	/15	14 5 1
					Blankety St		96 6
					Mt Isa office		35 2 5
					Motor Vehicle		460 . .
					Office Machine		72 14 5
		1356 15 10				1356 15 10	
Jan 31	To Motor Vehicle /20	210 . .		Aug 1	By Balance b/d		796 15 10
	Balance c/d	576	15 10				
		796 15 10				796 15 10	
July 31	To Furniture Mt Isa /22	2 19 6		Feb 1	By Balance b/d		576 15 10
	Balance c/d	860	14 7	July 31	Sydney office	/22	14 5 1
		860 14 7			Blankety St		96 6 . .
		860 14 7			Mt Isa office		22 12 9
					Motor Vehicle		70 . . .
					Office Machine		72 14 5
		863 14 1				863 14 1	
July 31	To Furniture Mt Isa /27	227 . 1		Aug 1	By Balance b/d		860 14 7
	Motor Vehicle	215 . .		Jan 31	Sydney office	/25	7 2 7
	Furniture & F. Syde /27	57 . 4			Blankety St		48 2 . .
	Mt Isa	134 10 10			Mt Isa		14 16 4
	Office Machine	290 17 8			Motor Vehicle		25 . . .
		1064 9 10			Office Machine		20 7 2
		1064 9 10					1064 9 10
				July 31	Sydney Office F	/29	7 2 6
					Motor Vehicle		16 16 5
					Office Machine		36 7 3
		1064 9 10				1064 9 10	

OFFICE	P.F.	P.F.	P.F.	OFF. VEN
MACHINES	SYDNEY	MT. ISA	MT. ISA	
364.10.5	49.17.10	227.1.0	117.14.5	215

Exhibit 22 - Ledger of 970. Queensland Mines Limited



(w) Cabinets  
nds

1959				1960			
Oct 5	To Cash	CB3	100 . .	July 31	By Balance f/d		702 10 5
Dec 31	Blends	15	101 5 5				
1960 Mar 23	Cash	217	221 5 3				
			41 14 4				
31	"	"	459 10 8				
			702 10 5				
			702 10 5				702 10 5
1960 Aug 1	To Balance f/d		702 10 5	1962 July 31	By Depreciation Prov. <sup>Int'l. Dist. Savings</sup> 9.20		25 . .
	672 15 5				Depreciation Prov. 9.22		2 19 6
					Loss on sale cabinet		1 15 6
					Balance f/d		27 15 5
			702 10 5				672 15 5
			702 10 5	1963 July 31	By Depreciation Prov. 9.27		134 10 10
Aug 1	To Balance f/d		672 15 5		By Substns. P. & C. 9.28		350 . .
	188-4-7				Home Development (Loss on sale) 9.29		1 21 0 10
							188 4 7
			672 15 5				672 15 5

# Lumbar Account

*Sydney*

1959

1959

July 31	To Cash	CB2	x	180	18	0	July 31	By Mrs. Deegan	1/2	x	51	.	.
							..	.. balance of a			129	18	.
				180	18	.					180	18	.
				129	18	.	July 31	By balance of a			285	4	1
				98	19	1							
				43	11	2							
				12	15	0							
				285	4	1							
				285	4	1					285	4	1
				285	4	1	July 31	By J. Deegan A.C.B. 9/29			110	.	.
							..	.. Don Bro	1/29		57	.	4
								.. Mining Development 1/29			167	.	4
								.. (2000 on hand)			118	.	9
				285	4	1					285	4	1

Chairs  
 Pughata  
 Pacific  
 ulam  
 Table

Account No.

Juridine Mt Isa

F4

Account No.

Sheet No.

Stooley St

Sheet No.

1939

Date	Description	Particulars	Debit	Credit	Balance
July 31	To Cash	Ch2	106 18		
Aug 11	..	Ch3	1810 51		
Nov 24	..	Ch4	816 5		
			1925 19 6		
1940			1925 19 6		1925 19 6
Aug 1	To Balance b/d		1925 19 6		
July 31	By Richard Boyd & Co			9 15	1328 18 6
..	.. D. G. Grov			129	1245 10 10
	.. <del>..</del>				337 1
					1425 19 6
			1925 19 6		1925 19 6

# Leased Property

House at Mt Isa  
8/11 only

1959				1959				1959					
July	31	To Cash additions	Ch2	527	.	.	July	31	By Balance f/d		6022	6	10
..		.. I.D.E. Loan etc	/2	5000	.	.							
		.. Casual Labor	-	468	9	7							
		.. Materials	-	26	17	3							
				6022	6	10					6022	6	10
				6022	6	10					6022	6	10
1959							July	31	By Balance f/d		6132	6	10
Aug	31	To Balance b/d		6022	6	10	..		.. New Development	/4	110	.	.
..		.. New Development	/4	110	.	.							
				6132	6	10					6132	6	10
1959							1960						
May	1	To Balance led		6132	6	10	Jan	31	By Development	/6	219	1	6
		.. Additions	Ch3	649	3	5	July	31	.. Balance f/d		7961	12	5
Oct	5	..	Ch3	260	2	7							
Nov	6	..	Ch4	196	5	8							
Dec	31	Mt Isa	/5	942	15	5							
		7961-12-5		8180	13	11							
				8180	13	11					8180	13	11
1960							1960						
Aug	1	To Balance b/d		7961	12	5	July	31	By Sale	/26	5482	15	1
July	31	.. Comm on Sale	/26	153	.	.			.. Legal Expenses	/27	25	9	.
		.. Annual Tax Paid	/27	12	4	1			.. Home Knowledge	/29	618	4	1
		.. Insurance Mt Isa	/28	1588	12	6			(Loss on Sale)		2702	10	11
		3703-10-11		9721	15	.							
				9721	15	.					9721	15	.

Account No.

# Incorporated Property Thelary St Mt Isa

716

Account No.

Sheet No.

Sheet No.

1959

Dec	To H O E Loan A/c	js	2500 . .	July 31	By Balance c/d	2860 2 6
Nov 6	Wdell Loan	CB4	285 7 .			
Dec 31	M I 22	js	74 15 6			
			2860 2 6			
1960			2860 2 6	1962		2860 2 6
Aug 1	To Balance b/f		2860 2 6	July 31	By Balance b/f	20 . .
1960						
July 31	Transfers	js	1 10 .		Wdell Loan	255 2 6
1962			2861 12 6		Balance b/f	2496 10 .
July 31	Transfers	js	1 10 .			2861 12 6

# Mine Development Ledger

1960

June 14	Cash	CB 2	1	989	12	6	July 21	By Balance ftd	1810	16	6
July 22	Wagon	"	1	812	10	.					
..		1/9	1	8	14	.					
				1380	16	6					
1960				1810	16	6	1960		1810	16	6
Aug 1	To Balance ftd			1810	16	6	July 21	By Mine Development ftd	1810	16	6

1959		1959		1959	
April 21	To Uncalled Capital	1	245000 . .	July 31	By Balance of
June 24	.. Cash Purchase for Syndicate	PAI	44999 . .		
			289999		
			289999 . .		289999 . .
July 31	To Balance b/d		289,999 . .	July 31	By Balance of d
July 31	.. Amnesia of bin		1000 10 . .		290999 10 . .
			290999 10 . .		
1959			290999 10 . .		290999 10 . .
Aug 1	To Balance b/d		290999 10 . .		
1966					
Jan 1	By Balance		581,999 00		
	TF to new ledger				
	of # 1111				

1959

Apr 20	To Cash	CB1	16503	8	1	May 21	By Sale sketches	1/3	2	.	.
June 24	..	CB1	1625	.	.	..	Balance c/d		51145	.	7
..	..	..	500	.	.						
..	..	CB2	752	10	3						
July 1	..	..	19251	5	10						
..	M Isa	1/2	3893	12	2						
	..	1/3	37	6	7						
	.. Expenses		3906	19	6						
			12079	1	1						
			51147	.	7				51147	.	7
July 1	To Balance f/d		51145	.	78	July 31	By Balance f/d	1/4	110	.	.
July 31	.. S Creditors	1/4	2690	.	.	..	.. Study Station	..	293	18	9
	.. Sydney Junction	..	51	.	.	..	.. Balance c/d		53482	1	10
			53886	.	7				53886	.	7
Aug 1	To Balance f/d		53482	1	10	Aug 5	By Refund/Barid		36	13	7
Dec 31	Cash	CB5	20014	16	6	Dec 31	.. Surplus Refund f/d	1/6	44	2	6
..	M Isa	1/5	4005	4	1	Jan 7	.. Sale of Res	1/6	561	11	.
Jan 31	..	CB6	77502	2	5	..	..	..	504	7	6
..	..	1/6	1135	14	10	..	..	..	114	6	14
..	..	1/6	219	1	6	..	..	..	2606	.	7
May 31	..	CB7	89072	16	9	July 31	..	..	3752	14	7
..	..	1/8	4292	12	1	..	..	..	13728	1	12
May 16	M Isa	1/8	762	4	5						
July 22	..	1/9	449	9	3						
July 31	Cash	CB9	6799	2	11						
..	..	1/10	10137	7	5						
..	..	1/11	2685	2	1						
..	..	1/11	84	.	.						
..	..		1353	11	10						
..	..		157	8	2						
..	..		781	2	7						
..	..		678	7	11						
..	..		1252	1	10						
..	..		139	13	11						
..	..		304	13	.						
..	..		1246	11	11						
..	..		118040	6	10				14103	11	7



M1

Min Development Account

			110090	6	10				141034	11	7	
July 31	To Off a Expense	11	572	12	6							
	Printing & Post	"	494	9	7							
	Utility Cash	"	92	4	2							
	Pay Roll Tax	"	221	6	6							
	Printing Tax	"	1524	1	2							
	Plot Land	"	1657	10	4							
	Coal	"	1874	6	8							
	Refuse & Drunken	"	261	1	8							
	Refuse	"	1896	2	15							
	Travel Exp	"	4697	6	2							
	Store shed	"	561	11	.							
			141034	11	7							
1960			141034	11	7				141034	11	7	
July 1	To Balance b/d		127281	17	.	1961	July 31	By Bank Steel	12	2968	14	10
Nov 31	Cash	Ch 12	779	15	6	July 31	Refuse Receipt	14	152	5	1	
30	Al. Exp	13	83	.	.	" "	" "	" "	156	2	2	
			184	1	7	" "	A.O.K. & J. Jones					
Apr 1	135339 19 3		1323	5	14		Loan A/C	16	546	19	.	
	Interest on Loan		2735	16	9		Interest due A/C	17	18	4	6	
July 31	Loan fees	14	28	7	.		Balance f/d		129182	9	2	
July 31	137510 15 9	15	141092	17	10							
	Interest fees		54	.	.							
	Blue Water Exp	17	770	7	.							
	Country Tax	"	750	.	.							
	Donna & Will Exp	"	228	4	3							
	Depreciation	"	678	7	11							
	Excelsior Road Tax	"	5	1	9							
	Seave Exp	"	301	10	4							
	Iron & Heavy Exp	"	4280	1	7							
	Insurance & Power	"	47	5	.							
	Interest on Loan	"	1185	10	6							
	Repairs & Exp	"	13	6	.							
	Motor Exp	"	509	15	8							
	Office Exp	"	579	14	6							
	Utility Cash	"	60	4	5							
	Forward		150516	6	9				Forward			
									172059	14	9	

1961		1962	
July 2	Forward	150 5 6	173 029 14 9
	To Pay Roll Tax	109 8 4	
	Professing fees	315 8 6	
	Queensland Library	1274 19 2	
	Hand	1225 5 .	
	Repairs & maintenance	385 10 10	
	Printing Allowance	3000	
		4270	
	Balance	9689 2 6	
	Traveling	1703 13 8	
	misc. exp.	490 . .	
		173 029 14 9	173 029 14 9
Aug 1	To Balance f/d	129 182 9 2	Jan 31 By Statement Bill for
1962			Balance f/d
Jan 31	By Statement Bill for	85 . .	173 020 8 6
	By Balance f/d		
	By Receipts	6 6 .	
	Blue Metal Exp.	250 . .	
	Backlog	6 14 6	
	General Exp.	50 2 4	
	Insurance	14 1 9	
	Material Exp.	10 . .	
	Office Exp.	65 . .	
	Libby book	14 10 1	
	Rent	290 . .	
	Repairs - hardware	87 15 .	
	Salaries	182 . .	
	Traveling	161 2 2	
	Blue Metal Office	1 150 . .	
	General Office	1 250 . .	
	Repairs Office	1 250 . .	
	Hand	1942 2 6	
	misc. exp.	69 . .	
		173 020 8 6	173 020 8 6
Feb 1	To Balance f/d	173 020 8 6	By Statement Bill for
			2 500 . .
July 31	By Statement Bill for	80 . .	July 31 By Statement Bill for
			10 2 1
		173 100 8 6	2 510 2 1

x  
2

Mine Development of - Rodmans

1962

1962

1962			1962			1962			1963		
	Forward:-		178,100	8	6		Forward:-		2,510	3	1
July 31	Salary & Pension etc	f 20	265	3	6	July 31	By Blue Book	f 200	7		
	Hydroxy	f 21	291	15	4		Payment	f 20	7		
	hire & fuel	f 22	1,810	16	4		Balance c/d		176,922	5	5
	Station bulk oil	f 23	1	15	6						
	Consulting fees		144	12	4						
	Depreciation		284	15	3						
	Exchange Bank fees		1	15							
	Annual expenses		249	11	10						
	Insurance		12	5	9						
	Interest on Loans		2501	18	7						
	Income tax fees		10	10							
	Legal expenses		76	11							
	Management fees		252	10							
	Office expenses		27	1	2						
	Rent		260								
	Salaries		197	19	2						
	audit fees	f 24	40								
	Traveling expenses	f 25	216		4						
			181,169	15	9				181,169	15	9
Aug 1	To Balance b/d		176,922	5	5	July 31	By Sydney Sale of				
Jan 31	Interest on Loans	f 25	1,250	19	4		Store sheet	f 26	200		
	Depreciation		142	9	1		Consulting fees	f 27	585	6	8
July 31	Loss sale of plant	f 29	2,703	10	11		Payment of Provision				
	Insurance		112	2	9		Sale of Drums				
	oil fuel		180	14	7		Drill Equipment	f 28	300		
	Water Bill	f 30	5				Hotel	f 29	86	16	5
	Office building		96	12	9		Insurance	f 30	9	16	10
	Consulting fees		250				Balance c/d		185,292	18	3
	Depreciation		60	6	2						
	Bank fees		1								
	Annual expenses		251	5	6						
	Interest on Loans		1,250	19	4						
	Legal expenses		106	14	6						
	Management fees		290								
	Forward:-		185,292	12	4						

# In Industry Investigation Expenses

1960				1961			
Mar 15	AS Palmer Westland + Tasmania	CB7	1	487	18	7	
							By Department Development /9 1 21 4 9
May 23	New Zealand Cps	..	1	100			1252 1 10
May 16	.. ..	..	1	1	2	6	
Jun 14	.. ..	CAS	1	405	10		
Jul 22	.. 1252-1-10	..	1	278	15	6	
				1273	6	7	
				1273	6	7	
1960							1273 6 7
Jul 6	New Zealand Cps Coffee	CB10	1	418	4	6	
		..		70			By New Zealand /17 4250 1 7
Jul 19	Robertson	CB11		70			
Mar 30	Sydney	/12		320	2	8	
	New Zealand	/13		1620	4	5	
	Tasman	..		1348	10	5	
July 2	Tasmania Cps	/14		412	15	2	
				4250	1	7	4250 1 7

*Mine Development F - Auditors*

1968

1968			1968			1968					
	Forward		186,272	18	2	Forward		186,272	18	2	
July 31	To Office Expenses	f 20	29	7	2						
	Post		149								
	Balance		144	5	7						
	Travelling		11	18							
	2052.189		186,272	18	2						
	Audit Fee		60								
			186,272	18	2			186,272	18	2	
Aug 1	to Balance b/d		185,112	18	9	Aug 21	Forward Dial (D1)	227			
Jan 31	to Balance b/d	f 01	104	6	9	July 31	to Lease Fees	133			
July 31	undry balances	1344	185,217	18	7	July 31	Balance	o/d	189,614	14	4
			4501	15	7				189,719	-	4
			189,719	-	4				189,719	-	4
Aug 31	Balance	b/d	189,614	14	4	Dec 31	By Balance		191,560	19	1
Dec 31	To Journal										
	Audit fee	37	25								
	Travelling fee	-	85								
	By Bank fee	-	18								
	Exchange	-	5								
	Printing	-	2	4	-						
	Interest on loan	-	1,459	2	8						
	Lease fee	-	229	13	1						
	Management fee	-	110								
	Rent	-	42								
			191,560	19	1				191,560	19	1
			191,560	19	1				191,560	19	1
1965			1965			1965					
Jan 1	To Balance		191,560	19	1	Dec 31	By Journal - Trans.	29	22	16	2
Dec 31	Journal						Balance		192,746	3	6
	Audit fee	40	60								
	Travelling fee	-	260								
	Post, phone	-	19	4							
	Interest on loan	-	120	16	3						
	Lease fee	-	377	7	2						
	Management fee	-	100								
	Management fee	-	175								
	P.S.	-	17	10							
	Rent	-	90								
			192,746	3	6				192,746	3	6
			192,746	3	6				192,746	3	6

Account No.

171

Sheet No.

Account No.

Sheet No.

Mines Development Co - Buderong

1966										
Jan	1	To Balance		1932244	3	67				
				25,411	35					
		Tf to new ledge - A/C # 1201								

Account No.

*Shale Lease*

*S1*

Account No.

Sheet No.

Sheet No.

1959

May 5	To Cash	C/S	10000						
1966									
Jan 1	By Balance		20,000						
	A/c to new leases								
	at # 1112								

1959			1960			1961			1962			1963			1964			1965			1966		
Dec 31	To Cash	CB5	1	6644	.	Jan 31	By Balance f/d							17775	13	9							
	M Ina	5	1	232	8																		
Jan 31	Cash	CB6	1	6876	8																		
May 31		CB7	1	7079	5																		
"    16	M Ina	CB8	1	5453																			
July 31		9	1	624	1																		
"    31	Cash	CB9	1	609	16																		
"    31	M Ina	10	1	246	5																		
				46	2																		
				17775	13																		
1960				17775	13									17775	13	9							
Aug 1	To Balance b/d			17775	13		July 31	By Balance f/d						18229	6	9							
Dec 31	M Ina	12	1	480	10																		
Jan 31	M Ina	14	1	23																			
1961				18229	6									18229	6	9							
Aug 1	To Balance b/d			18229	6																		
1965							Dec 31	By Balance						18309	3	5							
Jan 30	To bal. of Ridgway																						
	Expns. tunnelling																						
	adjoining shal	19		79	16																		
				18309	3									18309	3	5							
				18309	3																		
1966																							
Jan 1	To Balance			18309	3																		
	"			36	6																		
	Tr. to new ledger																						
	sh = 1000																						











AMOUNTS DUE: ASSOCIATED COYS - AUSTRALIAN OIL EXPLORATION LTD. ADVANCE  
 Account No. A. O. L. : Loan A/C 73 Account No.  
 Sheet No. Sheet No.

1959			1959			1959		
July 31	To Balance c/d		5900		July 31	By House	1/2	5000
						movable fund		900
								5900
1960			5900		July 31			5900
July 31	To Balance c/d		17452 13 5		Aug 1	By Balance f/d		5900
					Oct 5	Cash	08/3	5000
						House	1/5	2500
					Jan 31	Plant	1/7	13400
					Mar 24	Cash	08/7	2500
					July 31	Interest	1/10	16145
								1507 11 5
1961			17452 13 5		July 31			17452 13 5
July 31	To Developm	1/17	290 13		Aug 1	By Balance f/d		17452 13 5
	Balance c/d		18616 8		Apr 1	.. Developm	1/14	1454 7 7
								18907 1
July 31	Sp to C/A	1/33	214 6		Aug 1	By Balance f/d		18616 8
July 31	Balance	c/d	18616 8		Jan 31	Lease Rental	1/31	104 6
						Managerial Exp		110
								15830 14
			18630 14		Aug 1	Balance	0/16	18616 8
					1966			
					Jan 1	By Balance		37232 50
						TF to new ledge		
						of N. 1741		

Petty Cash

P 2

1958				1960								
June	10	To Cash	CB2	10	00	00	July 31	By Development	/11	92	4	2
July	31	..	CB3	11	12	1	..	.. Balance c/d		10		
Oct	26	..	CB4	16	15	3						
Dec	31	..	CB5	17	4	2						
Mar	15	..	CB7	5	11	6						
"	31	..	..	10	9	2						
"	31	..	..	7	10	11						
May	16	..	..	9	11	6						
June	14	..	CB8	3	6	5						
July	22	..	..	10	8	8						
"	27	..	CB9	5	6	2						
				102	4	2						
1960				1961								
July	1	To Balance b/d		10	00	00	July 31	By Devlopment	/17	60	4	5
Oct	6	Cash	CA10	13	19	11		.. Balance c/d		10		
Dec	23	..	..	6	14	0						
Feb	17	..	CA11	6	14	0						
"	..	..	CA11	1	8	7						
"	..	..	..	5	2	0						
Mar	10	..	..	4	7	2						
"	29	By devlop	/12	6	17	0						
July	21	By devlop	/14	15	1	9						
1961				1962								
Aug	1	To Balance b/d		70	4	5	Jan 31	By Devlopment	/19	4	10	1
1962	Jan	By devlop	/18	4	10	1		.. Balance c/d		10		
1962				1963								
Feb	1	To Balance b/d		14	10	1	July 31	By Devlopment	/20	10		

Account No.

E.R. Hudson Loan Ac

Account No. 111

Sheet No.

Sheet No.

1954				1958			
July 10	To Cash	£5	80	July 11	By Balance	£5	80

# Bank of New South Wales

Melbourne.

1959

1959

Apr 10	To Cash	CB1	29151 15 0	Apr 10	By Cash	CB1	29071 1 11
July 2.	.. 367 10 10	CB1	87600 0 0	July 31	..	CB2	87979 7 4
	.. Balance c/d		305 14 3		505 14 3		117057 9 3
			117057 9 3				117057 9 3
Dec 31	Cash	CB3	48486 13 7	July 1	By Balance b/d		305 14 3
Jan 31	..	CB6	21543 18 9	Dec 31	Cash	CB5	51048 4 5
May 31	.. 3773 0 5	CB9	70330 14 4	Jan 31	2567 5 1	CB6	51353 18 8
July 31	Cash	CB4	19568 ..	July 31	Cash	CB7	15203 13 3
July 31	..	CB9	87598 14 4	May 31	..	CB7	66557 11 11
	..		21250 ..	July 31	..	CB9	20716 16 8
	.. Balance c/d		11148 12 4		1274 11 8		25224 8 7
			1274 11 5				25149 15 2
			112413 3 9				112413 3 9
Jan 31	Cash	CB10	17000 ..	Jan 1	By Balance b/d		1274 11 5
July 31	..	CB15	5537 14 6	Jan 11	Cash	CB12	16875 1 8
				July 31	..	CB15	4832 0 ..
					.. Balance c/d		15 1 8
			22537 14 6				22537 14 6
Aug 1	To Balance b/d		65 1 8	Aug 31	By Bank b/c	CB13	10 ..
Jan 31	..		65 1 8		.. Balance c/d		64 11 8
			65 1 8				65 1 8
Feb 1	To Balance b/d		64 11 8	July 31	By bank	14	2072 11 6
July 31	Cash	CB14	4065 ..		.. Balance c/d		2017 .. 2
	..		4089 11 8				4089 11 8
			2017 .. 2				2017 .. 2
Aug 1	To Balance b/d		2017 .. 2	July 31	By bank	15	124 17 6
Jan 31	..		1882 2 8		.. Balance c/d		1882 2 8
			2017 .. 2				2017 .. 2
Aug 1	To Balance b/d		1882 2 8	Apr 30	By bank	16	173 12 6
Apr 30	Cash	16	1725 7 9	June 30	Expenditure	CB16	1759 16 11
	..		1953 10 5				1963 10 5



June 2	To Cash	CH1	500		July 31	By Balance c/a		4000	
8	..	..	1500						
July 10	..	CH2	2000						
			4000						
1959			4000		1960			4000	
Aug 1	To Balance b/d		4000		July 31	By Balance b/d		5000	
Nov 27	Cash	CH4	1000						
			5000						
1960			5000		1961			5000	
Aug 1	To Balance b/d		5000		Jan 31	By Sydney Interest	12	1070	12
July 19	Cash	CH3	350		July 31	..	14	321	3 6
29	..	..	650		..	Cash	CH2	3737	14 6
			6000			Balance c/d		870	10
			6000		1962			6000	
Aug 1	To Balance b/d		870 10		Jan 31	By Sydney adj	18	863	6 7
			870 10			Balance c/d		7 2 5	
1962			870 10		July 31	By Sydney adj	12	870	10
Feb 1	To Balance b/d		7 2 5			Balance c/d		1012	2 12
	Cash	CR14	225					919	1
15	..	..	1225						
Feb 18	..	..	500						
			1957 2 5		1963			1957 2 5	
Aug 1	To Balance b/d		919 1		July 31	By Balance c/d		2199	14 10
July 31	By Sydney Adj	126	1280	14 9 6					
			2199	14 10					
1963			2199 14 10		1964			2199 14 10	
Aug 1	To Balance b/d		2199 14 10		July 31	Expenditure	CB17	5023	-
July 31	Receipts	CB17	3329 9 5			Balance	c/d	2506	4 3
			5529 4 3					5529	4 3
Aug 31	Balance	b/d	2506 4 3		1964			2506 4 3	
			2500	4 3	Dec 31	Expenditure	CB18	232	7 1
			2506	4 3		By Balance		2273	17 2
								2506	4 3
1965					1965				
Jan 1	To Balance		2273 17 2		Jan 30	By Cash	19	2590	16 7
Jan 30	Cash	19	2590 5 2		Dec 31	Balance		2590	5 2
			2590	2 2					

B2

Bank of New South Wales

Sheet No.

Sheet No.

1965

Sydney 1965

Dec 31	To Cash	19	1 10 8	Dec 31	By Cash	20	479 - 7
	1,870/15/8		2,624 12 10		By Bal		763 17 2
			2,634 12 10				1,870 15 8
							2,634 12 10
1966							
Jan 1	To Bal		3,187 15 8				
	By Bal		3,741 56				
	IF to new ledger						
	of \$ 1521						





# Lapsed Account M/L Ka

1954				1959			
July 21	To Cash	CB2	800. .	July 31	By Expense	1/2	1000 7 1
.. ..	- Sales tickets	1/3	2. .				
	.. Balance c/d		198 7 1				
			1000 7 1				1000 7 1
Aug 11	To Cash	CB3	1277 5 1	Aug 1	By Balance b/d		198 7 1 2
Oct 3	..	CB3	1746 5 6	Dec 31	By Expense	1/5	9281 10 5
Nov 6	..	CB4	1472 12 1	July 16	..	1/8	1077 17 6
.. 24	..	..	1172 9 7	July 22	..	1/9	6692 19 1
Dec ..	..	..	1414 5 6	..	..	1/10	7846 8 4
Nov 6	..	..	561 11 .	..	Balance c/d		21016 1 4
Dec 24	..	CB5	1868 5 .				19 2
Dec 31	9-3-14-6-8 Handy Receipt	1/6	9512 13 9				
Jan 30	77-13-9 Cash	CB6	44 27 6				
Jan 15	2359-15 "	CB7	9557 11 3				
.. 23	..	..	2282 2 2				
	..	..	11239 13 5				
	..	..	715 10 4				
	..	..	500				
	..	..	1442 11 .				
May 16	..	..	1841 6 5				
June 14	..	CB8	2737 16 10				
July 22	..	..	895 6 9				
Aug 16	Handy Receipt	1/7	80 19 1				
July 31	Car	CB9	277 11 8				
.. .	Expense	1/9	685 16 5				
	19/7		21017 . "				
			21017 . "				21017 . "
Aug 1	To Balance b/d		19 7	Mar 10	By Expense	1/13	4639 6 7
Oct 6	To Cash	CB10	2909 18 5		..		1436 19 5
Dec 23	..	..	809 10 .	July 21	..	1/14	535 3 3
Feb 17	..	..	460 11 8		Balance c/d		632 12 4
	..	CB11	468 17 5				
	..	..	499 9 6				
	..	..	532 13 7				
Mar 10	..	..	150 . .				
.. 20	Archer	1/12	300 . .				
	Forward		6122 . 8		Forward		6122 17

1961		1962		1963	
		6122 . 2		Sanwardi	6623 17
Mar 21	Mtd for Cont. Acct	/13	6 16 10		
July 21	Mtd for con. Acct	/13	5 .		
	By drawing	/14	500		
		6623 17	1962		6623 17
Aug 1	To Balance b/d		25 13 .	Jan 21	By business
1962				By	618
Jan 21	By drawing	10 15 10	500 .		Balance b/d
			525 13 .		10 15 10
Feb 1	To Balance b/d		10 15 10	July 21	By Bank Chq
				By	611
					Balance b/d
			10 15 10		10 15 10
Aug 1	To Balance b/d		10 5 10	July 31	By Transfer Sydney
			4		120
			10 5 10		By expenses/retail
					615
					16 3 6
					10 5 10

# Sundry Debits

81

1957				1958			
June 24	To Balance overpaid	C61	9 13 11	July 31	By Balance	J3	9 13 11
July 31	To Balance	J46	293 18 9	.. ..	.. Balance of a		293 18 9
1957			303 12 8	1958			303 12 8
Aug 1	To Balance		293 18 9	June 30	By Balance	C66	293 18 9
1958				1958			
July 17	To E. H. Gregory	M00	300 . .	Jan 21	By A. H. H. H. H.	J19	200 . .
July 31	To A. H. H. H. H.	J21	172 25 . .	July 31	.. Balance of a		1572 8 4
1963	.. Overpayment	J26	146 13 4				
July 21	Con. Fees E. H. H. H.						
	.. A. H. H. H. H.	J28	10 . .				
	.. Petty Cash		10 . .				
	.. E. H. H. H. H.		110 . .				
	.. A. H. H. H. H.		250 . .				
	.. Office Building		240 . .				
	.. Water Supply		100 . .				
	.. Insurance	J28	300 . .				
	.. Prepaid Rent	J29	33 . .				
			1572 8 4				1572 8 4
			1572 8 4				1572 8 4
Aug 1	To Balance		1572 8 4	Aug 21	Diamond Drill	C617	300 - -
				Sept 27	By Cash - MFE	17	10 - -
					.. Elec. Defect	17	10 - -
					.. Office Equipmt	17	340 - -
					.. " "	17	350 - -
					.. Office Furniture	17	110 - -
					.. Austin Champ 4x4 fuel	17	100 - -
				July 31	Reversal Prepayment	J32	33 - -
				31	.. Coal. Co. - E. H. H. H.	32	65 - -
				31	.. " " "	33	25 - -
				31	.. Balance	C61	229 5 4
			1572 8 4				1572 8 4
1966	Balance		229 5 4	Aug 31	.. Coal. Co. - E. H. H. H.	J36	45 - -
Aug 1	Balance		229 5 4		.. By Balance		274 1 4
Dec 31	Reversal E. H. H. H. Co. Fees		90 - -				274 1 4
			274 1 4				274 1 4

SRH 2116.15.0  
101 172.16.0

Sundry A/c

1965

1965

Jan 1	To Balance		274	P 4	Jan 30	By bal	19	319	P 4
Dec 31	Journal	38	45	:			<del>45</del>		
			319	P 4				319	P 4
			319	P 4					



Account No.

# Deposits Paid Electricity

82

Account No.

Sheet No.

Sheet No.

1959

Year	Month	Description	Debit	Credit	Year	Month	Description	Debit	Credit
1959	July	To Mt Isa	10		1960	July	By Balance b/d	20	
	Nov	By day	10			Aug	To Balance b/d	20	
			20						
			20		1961	July	By Mt Isa	5	
							By Balance b/d	15	
					1962	July	By Clearing Mt Isa	3	19
							By Office expenses	1	1
							By Office exp.	10	
								15	



Account No.

Repairs & Maintenance

A3 Account No.

Sheet No.

Sheet No.

1960

1961

May 16	Painting Mt Len	CR7	1	103	16	6	July 31	By Development	J11	261	1	8
16	Stanley St House	J8	1	105	2	.						
	Hilary St House	J9	1	26	16	3						
July 31	Stanley siltus	J10	1	25	6	11						
				261	1	8						
				261	1	8						
1961				169	3	11	1961			261	1	8
June 10	To Cash	CR4		169	3	11	July 31	By Development	J17	385	10	10
	Painting Hilary St	J13		90	.	.						
	Gardening Hilary St			15	9	.						
	Rates			100	3	.						
July 2	Mt Len	J14		10	14	.						
1962				385	10	10	1962			385	10	10
Jan 31	To Mt Len	J18		9	15	.	Jan 31	By Development	J19	9	15	.

1959

Nov 24	To (1) Coning Drilling	C/11	1000	1960	July 31	To Balance b/d	1946	2	6		
Jan 31	To Drills one hits										
	Safety knife Dopsch	1/6	504	7							
	To HOR Drilling	1/7	15								
	Automatic Gage Crane		45								
	C&E Seatollometer		150								
1960	Panel Patented		35								
May 16	Mesa Drill Rods	1/8	1749	7							
			196	15							
			1946	2							
1960			1946	2			1946	2	6		
Aug 1	To Balance b/d		1946	2	1962	Jan 31	By Line Development	919	1946	2	6

Account No.

# Profructing Fee

Ps Account No.

Sheet No.

Sheet No.

1960				1960										
Mar 31	To Cash	f9	1	350			July 11	By Profructing Fee	f11			1549	1	2
May 16	Mr Soa	f8	1	792	2	5								
July 22	-	f9	1	84	2	6								
" 31	Mr Soa	f10	1	103	13	1								
" "	Profructing Fee	f10	1	1329	12									
				219	3	2								
				1549	1	2								
1961				1961										
Mar 31	To Mr Soa	f13	1	315	8	6	July 31	By Mine Development	f17			1549	1	2
												315	8	6

# Travelling & Accommodation T1

1959

April 30	To Cash	CA1	560	1	3	July 31	By Development	13	2557	12	6
June 30	"	CA2	553	16	5						
July -	"	"	1351	19	5						
July 31	.. M tea	1/2	2465	17	1						
	.. f. hand	1/2	90	1	5						
			2557	12	6						
1959			2557	12	6	1960			2557	12	6
Dec 31	To Cash	CA5	2742	.	.	July 31	By Development	11	4697	6	2
	.. M tea	1/5	262	10	10						
1960			2994	10	10						
Jan 31	Cash	CA6	70	3	3						
May 31	"	CA7	3064	14	1						
	.. M tea	1/8	415	10	10						
July 16	.. ..	1/9	318	4	10						
July 22	.. ..	1/9	347	14	1						
. 31	Cash	CA9	541	2	4						
			4697	6	2						
1961			4697	6	2	1961			4697	6	2
Mar 31	Cash	CA12	1254	6	6	July 31	By New Development	17	1703	13	8
	.. Sydney	1/12	110	5	6						
	.. M tea	1/13	100	11	.						
	.. ..	"	58	1	6						
July 31	.. Sydney	1/14	180	9	2						
1962			1703	13	8	1962			1703	13	8
Jan 31	To Sydney	1/18	153	11	5	Jan 31	By Bluebird Development	19	161	2	2
	.. M tea	.	7	10	9						
			161	2	2						
July 31	To Sydney	1/21	301	15	1	July 31	By Bluebird Corp.	1/21	85	11	9
							.. Development	1/23	216	.	14
			301	15	1						
1963			301	15	1	1963			301	15	1
July 31	To Sydney	1/26	11	13	.	July 31	By Bluebird Development	1/30	11	13	.
Sept 15	Cash	16	30	10	6	31	.. Development	1/31	30	10	6
1965			301	15	1	1965			301	15	1
Dec 31	To Journal	37	. 14	.	.	Jan 31	By Cash - of Ridgway				
	..	-	1	66	1		.. Report Development	19	39	16	11
	..	39	9	.	5		.. 2/5/1965				
			17	-	6						

Exhibit 22 - Ledger of 1008. Queensland Mines Limited

Travelling And Accommodation

1965

		17		18		29 16 8	
Dec	31	To J. L. Muri	Travel	37			
					22	16	2
					259		16 8
							h

# Salaries

12

1959

1959

June 30	To Cash	CA1	1561	18	July 31	Hand	123	8
June 30	"	CA2	122		" "	Developers	8183	5
July 31	"	-	6620	10				
" "	M Isa	/2	8304	9				
	8383.57		202	5				
			8506	13				
1959			8506	13	1960		8506	13
Dec 31	To Cash	CA5	5221	6	July 11	by Development	18962	15
	M Isa	/5	1518	12				
Jan 31	Cash	CA6	6739	19				
May 31	"	CA7	895	6				
			7635	5				
July 16	M Isa	/8	2422	6				
July 22	"	/9	1917	12				
" 31	Cash	CA9	1088	7				
" "	M Isa	/10	4219					
			591	17				
			18962	15				
1961			18962	15	1961		18962	15
Mar 23	Cash	CA12	5542	10	July 31	by Cash	3	
30	By cheq	/12	111		" "	.. M Isa	9689	2
	M Isa	/13	1718	10				
	"	"	486	12				
July 31	By cheq	/14	74					
	M Isa	"	137					
	Accrued	/15	1522	10				
1962			9492	2	1962		9492	2
Jan 31	To M Isa	/18	132		Jan 31	By Cash Development	132	
July 31	Sydney	/21	197	19	July 31	"	197	19
1963					1963			
July 31	" Sydney	/26	144	5	July 31	"	144	5



1954

1953				1954									
Dec 31	To Min Development	f 1	1	44	2	6	Dec 31	By Cash on A/c	f 1	1	44	2	6
1953							1954						
July 31	To Min Development	f 30		10	2	1	Jan 31	By Bal. b/d	f 18		25	2	1
	Transferred off bal. b/d			25									
				35	2	1					35	2	1
June 30	Melb Exp	CB16		1789	11	11	June 25	Melb Bank - fr	CB17		1789	11	7
							July 31	idemy					4
				1789	11	11					1789	11	11

7.7/60

# Queensland University Pilot Plans Q,

Account No.

Account No.

Sheet No.

Sheet No.

1960

Date	Description	Code	Debit	Credit	Balance	Date	Description	Code	Debit	Credit	Balance
Jun 14	To Cash	CAB	140			July 31	By Adjustment				664 11 8
July 22	"	"	1965	5		" "	Development				1657 10 4
"	"	"	13	2 9							
July 31	Cash	CAB	203	18 10							
	1657.10.4		2322	2							
1960			2322	2							2322 2
						1961					1274 19 2
Oct 6	To Cash	CA 10	660	18		July 31	By Mine Development				
Dec 23	"	"	232	11							
Dec 17	"	CA 4	101	11							
Nov 10	"	"	209	19 2							
July 31	By day	J/12	10								
July 31	By day	J/14	60								
			1274	19 2							1274 19 2

1919

May 21	To Carl	CB1	λ	170	.	.	July 31	By Developer	13	λ	560	17	2
June 24	..	..	λ	43	6	8							
30	..	CB2	λ	43	6	8							
31	..	..	λ	102	6	8							
10	..	..	λ	100	.	.							
July 30	..	..	λ	21	17	2							
31	M Isa	12	λ	440	17	2							
				120	.	.							
				560	17	2							
				560	17	2					560	17	2
Aug 15	To Carl	CB3	λ	202	6	8	July 31	By New Renewal	10		68	.	.
Oct 5	..	CB3	λ	102	6	8	..	..	11		1874	6	8
Nov 6	..	CB4	λ	102	6	8							
24	..	..	λ	319	.	.							
Dec 31	..	CB5	λ	102	6	8							
1920	M Isa	15	λ	306	.	.							
Jan 31	Carl	CB6	λ	1134	6	8							
Mar 15	..	CB7	λ	1186	13	2							
31	..	..	λ	152	6	8							
May 16	..	..	λ	102	6	8							
June 14	..	CB8	λ	102	6	8							
July 22	..	..	λ	102	6	8							
Aug 21	..	..	λ	102	6	8							
Sept 16	M Isa	19	λ	72	.	.							
Oct 31	Carl	19	λ	50	.	.							
Nov 31	M Isa	10	λ	72	.	.							
				1942	6	8							
				1942	6	8					1942	6	8
Dec 6	Carl	CB10	λ	88	5	.	July 31	By New Developer	17		1225	5	.
Dec 23	..	..	λ	50	.	.							
Feb 17	..	CB11	λ	50	.	.							
	..	..	λ	50	.	.							
	..	..	λ	102	.	.							
Mar 10	..	..	λ	50	.	.							
30	M Isa	13	λ	324	.	.							
	..	..	λ	706	.	.							
	Forward			941	5	.		Forward			1225	5	.

1951

1961

1951			1961		
July 31	By draw M Isa	114	911 5 50 . . 234	Standard	1225 5
1962			1225 5	1962	1225 5
Jan 31	To Sydney. M. Isa	118	120	Jan 31	By Mine Development
July 31	Sydney	121	260	July 31	"
1963				1963	
July 31	To M Isa started 149	126	182 . .	July 31	By Prepayment
					Mine Development
			182		182
July 31	Journal	132	76 - -	July 31	Mine Development
Dec 31	Journal	136	14 - -	Dec 31	To M Isa started
	By Cash	146	164 - -		Mine Development
			218		218
1965				1965	
Dec 31	To Cash - M. Isa 90/1/2	20	104 . .	Dec 31	By Journal
			104		Mine Develop
			104		90
			104		104



Account No.

# Pay Roll Tax

B3

Account No.

Sheet No.

Sheet No.

1959				1960			
Aug 18	To Cash	CB3	48 18 9	July 31	By Development	11	221 6 6
Dec 5	"	"	21 4 10				
Dec 31	"	CB45	25 12 .				
June 14	"	CAS	96 3 7				
July 17	"	CB9	66 . "				
			59 2 .				
			221 6 6				
1960			221 6 6				221 6 6
Oct 6	To Cash	CB10	43 16 . 4	July 31	By Auto Development	17	109 8 4
Dec 1	"	"	3 16 8				
23	"	"	61 15 8				
			109 8 4				109 8 4

Account No.

# Office machines

01

Account No.

Sheet No.

Sheet No.

1959

1960

all 970  
in 900  
Sydney  
Sydney  
Sydney  
Sydney

Date	Description	Particulars	Debit	Credit	Balance
Dec 31	To Typewriter	154 . .			154 . .
	- Vela Window	57 18 9			211 18 9
Jan 30	Typewriter	277 18 9			488 37 8
May 16	Duplicator	261 18 9			750 56 7
July 22	Caray Printer	80 12 4			830 69 1
	Copying Machine	17 . 7			847 86 8
		367 18 9			1215 05 7
		727 11 5			488 37 8
1960		727 11 5			727 11 5
Aug 1	To Balance b/d	96 13 9			823 25 4
		727 11 5			1550 36 9
					240 . .
					290 17 8
					639 17 8
					96 13 9
					727 11 5

Account No.

# Office Expense

P2

Account No.

Sheet No.

Sheet No.

1960

1960

July 16	Mt Isa	f 8	543	1	8	July 11	By Development	f 11	572	12	6
	Mt Isa	f 9	9	18	.						
July 2	Mt Isa	f 10	14	12	10						
			572	12	6						
1960			572	12	6				572	12	6
Oct 6	Cash	CA10	27	3	2	July 31	By New Development	f 17	599	14	6
Dec 23	"	"	5	4	6						
Mar 31	-	CA12	106	1	3						
70	To day	f 12	5	15	6						
	Mt Isa	f 13	266	19	9						
			45	19	1						
July 31	Cash	CA15	1	0	.						
July 31	Sydney	f 14	128	6	3						
	Mt Isa	f ..	13	5	.						
1962			599	14	6	1962			599	14	6
Jan 21	To Sydney	f 18	60	.	.	Jan 21	By Mine Development	f 19	65	.	.
	Mt Isa		5	.	.				65	.	.
			65	.	.						
July 21	To Sydney	f 21	27	1	2	July 21	By Mine Development	f 22	27	1	2
1963						1963					
July 31	To Sydney	f 26	16	6	2	July 31		f 20	29	7	2
			12	.	.						
	By Paid/Individual	f 27	1	1	.						
			29	7	2				29	7	2
			20	7	2						



*Printing & Stationery  
Balance*

1959

1959	Apr 30	To Cash	CB1	85	13	2	1959	July 31	By Development	10	297	2	10
	June 30	"	CB2	21	19	2							
	"	"	"	151	10	10							
	July 31	.. M Isaacs	1/2	269	3	7							
		.. By Cash	1/2	23	2	64							
		Telephone	1/3	1	14	.							
				3	2	11							
				297	2	10							
1959		To Cash		297	2	10	1959				297	2	10
1960	Nov 6	To Cash (Part)	CA4	7	.	9	1960	Dec 31	By M Isaacs	1/6			18.
1960	Dec 31	.. Cash	CA5	135	5	3	1960	July 31	By Development	1/11	694	9	7
1960		M Isaacs	1/5	263	9	8							
1960	Jan 31	LOS 0.8	CA6	405	15	8							
1960	May 31	412.9.7	CA7	413	4	7							
1960	July 31	cash	CA9	23	19	6							
		494.9.7		58	.	6							
				495	4	7							
				495	4	7					495	4	7
1965							1965						
1965	Dec 31	To Cash	20	1	3	2	1965	Dec 31	By Gen. Dev. Development	110	1	7	10
		Journal	37	.	4	8							
				1	7	10					1	7	10
				1	7	10							

1959

July 24	To Purchase	Willy's <sup>Lump Sum</sup>	CR1	x	1400	July 31	By Balance c/d		2300
July 25	- 10 1/2 ton Ford <sup>Willy's</sup>	Trailer		/2	450				
		Trailer			100				
		Champion <sup>gas</sup>		x	350				
					2300				
July 31					2300	1961			2300
July 1	To Balance b/d			x	2300	July 31	By Sale of jeep	7/14	350
							By Provision	7/16	560
							New Diesel gas		490
							Balance c/d		900
1961					900	1962			900
Aug 1	To Balance b/d				900	Jan 31	By Land Rover	7/15	280
1962							Trailer		51
Jan 31							Provision	7/20	280
							New Diesel Gas		69
							Balance c/d		350
					900	1962			900
Feb 1	To Balance b/d				350	July 31	By Depreciation loss	7/27	285
							After class: A.P.C.	7/28	100
							New Diesel Gas		5
					350		(Loss)		350

# Motor Expenses

1959

July 10	To Cash	91	2	11	12	7	July 31	By Development	13	2	133	12	40
	.. M Isa	92	3	120	9	8							
	.. f Bawel	93	2	132	2	3							
				131	10	1							
				133	12	4							
1959				133	12	4	1960				133	12	40
Dec 31	To M Isa	95	1	527	17	.	July 31	By Development	911		1246	11	11
May 16	..	98	2	455	12	5							
July 22	..	99	1	257	12	6							
July 31	..	910	1	5	10	.							
				1246	11	11							
1961				1246	11	11	1961				1246	11	11
Nov 30	To M Isa	912		498	17	6	Nov 31	By M Isa	913		6	16	10
July 31	.. W Isa	914		135	.	.	July 31	.. New Development			509	15	8
1962				516	12	6	1962				516	12	6
Jan 31	To M Isa	915		10	.	.	Jan 31	By Mine Development	919		10	.	.

# Legal Expenses

21

Sheet No.

Trachim

FORMATION

Sheet No.

1959			1959			1960			1961			1962			1963			1964		
Apr 21	To Cash	CA1	29	10	.	July 31	By Jewel		1461	2	11									
June 2	"	CA1	41	.	1															
.. 24	"	"	1390	12	10															
			1461	2	11															
			1461	2	11															
July 1	To Balance b/d.		1461	2	11	July 31	By Jewel		1461	2	11									
18	Shony Duby	CA3	36	10	.				304	13	.									
Nov 20	Shony Duby	CA4	80						1461	2	11									
Dec 15	Legal Trudy v/dm	..	62	9	.															
Jan 31	Tully & Wilson	CA1	1660	1	11															
			88	17	3															
	Moulton & Dan	..	36	16	9															
			1765	15	11															
			1765	15	11															
July 1	To Balance b/d		1461	2	11	July 31	By Jewel		1461	2	11									
Mar 23	Legal Exp	CA12	13	6	.															
			1474	8	11															
			1474	8	11															
Aug 1	To Balance b/d		1461	2	11	July 31	By Jewel		1461	2	11									
Feb 15	cash - back - Tully & Wilson	CA11	4	8	.															
	Tully & Wilson	..	5	17	.															
May 14	10.00	..	20	8	.															
July 31	Spanderson - back - Tully & Wilson	J20	8	1	.															
	Hydrazine	J21	57	17	.															
			1557	13	11															
			1557	13	11															
Aug 1	To Balance b/d		1461	2	11	July 31	By Jewel		1461	2	11									
Apr 3	cash - back - Tully & Wilson	CA15	5	3	.															
			10	10	.															
			2	1	.															
			5	8	.															
June 28	Tully & Wilson	J26	21	9	6															
July 31	By Jewel	J26	15	19	.															
	Subsidy - Tully & Wilson	J27	25	9	.															
			1517	17	5															
			1567	17	5															
			1567	17	5															
Aug 1	To Balance b/d		1461	2	11	April 30	By Jewel		1461	2	11									
Apr 3	cash - back - Tully & Wilson	16	7	7	.	July 31	Balance	OK	1437	-	5									
			1437	0	5															
			1468	8	11															
			1468	8	11															

### FORMATION EXPENSES

Date	Description	Dr	Cr						
1964 Dec 1	Balance			1437	- 51				
1966 Jan 1	Dr Balance					2071	08		
	T/F to new ledger								
	at # 43.								

1023. Exhibit 22 - Ledger of Queensland Mines Limited

# Insurance

J3

1960			1960			1960					
Dec 23	To Cash	Ch 7	22	11	7	July 31	By Developer	J 11	139	13	11
May 16	Workers Comp	J 8	29	15	7						
Aug 22	Mt Isa	J 9	87	6	9						
			139	13	11						
			139	13	11				139	13	11
1961			1961			1961			1961		
Nov 71	Mt Isa	J 13	37	1	.	July 31	By Mine Development	J 17	47	5	.
Jan 31	"	J 14	10	4	.						
1962			1962			1962			1962		
Jan 31	To Mt Isa. Eagle Star	J 16	14	1	9	Jan 31	By Mine Development	J 19	14	1	9
July 31	Sydney	J 21	12	5	9	July 31	"	J 22	12	5	9
1963			1963			1963			1963		
July 31	Sydney	J 26	7	13	11	July 31	By Sydney	J 26	17	10	9
	Mine Development	J 30	9	16	10			9 10 10			
			17	10	9						
July 31	Mine Development	J 34	1	18	3	Nov 1	By bank: refund of comp	J 16	1	18	3

# Interest on Loans

1961				1961			
July 31	To POK Kolon	f.6	620 4 6	July 31	By Mine Development	f.17	1185 10 6
			555 6 .				
1962			1185 10 6	1962			1185 10 6
July 31	To Interest Acc a/c	f.22	1861 12 10	July 31	By Mine Development	f.22	3501 18 7
	To Cash		1640 5 9				
1963			3501 18 7	1963			3501 18 7
Jan 31	To Cash	f.25	820 2 11	Jan 31	By Mine Development	f.25	1750 19 4
	To a/c		920 16 5	July 31		f.20	1750 19 4
July 31	To Cash	f.17	820 2 11				
	To a/c		920 16 5				
1964	1750-19 4		3501 18 8				3501 18 8
Jan 31	To Cash	f.21	820 2 11	July 31	Mine Dev		3496 13 10
	To a/c		920 16 5				
Apr 30	To 12-31/4 Cash		404 9 .				
	To Interest 1/2-30/4 a/c	f.31	2155 8 4				
			465 8 3				
July 31	To 1/5-31/7 a/c	f.32	2620 16 7				
	To 1/5-31/7 K1(A)	f.32	465 8 3				
			464 9 .				
			3496 13 10				3496 13 10
1964			3496 13 10	1964			3496 13 10
Dec 31	To Cash	f.35	633 9 .	Dec 31	Mine Development	f.37	1459 2 8
	To a/c		775 13 8				
			11459 2 8				11459 2 8
1965				1965			
Dec 31	To Journal a/c	f.37	1851 12 10	Dec 31	By Journal	f.39	3501 18 8
	To M.I.	f.38	1640 5 10				
			3501 18 8				3501 18 8
			3501 18 8				
			^				^

Account No. *1001*  
 Sheet No.

*Chicago expense*

*C6* Account No.  
 Sheet No.

1960				1960									
May 16	To Cash	18	1	300	2	3	May 16	By Paid	7	1	80	19	1
							May 31	Cash	10	1	219	3	2
				300	2	3					300	2	3



# Crawling Fees

1961				1961			
July 31	To balance	116	750	July 31	By Main Development	117	750
July 31	ER Hudson	122	146 12 14	July 31		122	146 12 14
July 31	To ER Hudson	126	250	July 31	By Main Development	120	250
May 12	ER Hudson			July 31	By Development	134	250
	13.9.63 - 31.12.63	CB17	75 - -				
	1.1.64 - 30.4.64	17	85 - -				
July 31	Balance ER Hudson	132	65 - -				
31		33	25 - -				
			250 - -				250 - -
Dec 31	Dec ER Hudson	136	45 - -	Dec 31	Dec Reverse	136	90 - -
	ER Hudson by - Oct 31 64	CB18	130 - -		Main Development	17	55 - -
			175 - -				175 - -
Dec 31	To Journal ERH	38	172 60	Dec 31	By Jan - Main Development	40	172 60

# Cowdrey Gas Payable Provision

1962		1961				
July 31	to Balance f/d	916 13 4	July 31	By J.E. Hodgson 1/16	583 6 8	
				By E.K. Hudson ..	166 13 4	
					750 : -	
				July 31	By L.R. Hudson 9/22	166 13 4
1963		916 13 4				916 13 4
July 31	to Sydney 1/26	333 6 8	Aug 1	By Balance f/d	916 13 4	
	to Mine Development 9/27	582 6 8				
		916 13 4				
		916 13 4			916 13 4	

# Blue Melae Expenses

*Ag*

1960				1961			
Oct	6	To Cash	CA.10	75	17	2	
Dec	23	"	"	32	18	10	
		"	"	61	3	-	
Feb	17	"	CB11	151	7	-	
		"	"	14	18	2	
		"	"	94	5	9	
Mar	10	"	"	49	17	5	
	21	To Cash	/12	14	2	2	
		Wol Issu	/13	98	3	4	
		"	"	103	12	3	
July	31	To Cash	/14	34	1	11	
1960				1961			
				730	7	-	730 7 -
Jan	31	To Sydney Development	/15	350	-	-	Jan 31 By Sydney Development /19 350
July	31	Sydney!	/20	158	14	6	July 31 Sydney! Made Blue Melae /21 2000
		Sydney!	/21	400	-	-	
		Hard. Inc. Radio		25	13	9	
		270-7.0 - 8/17/61					
		mine. Inc. 2330 - 8/1/62		1230	7	-	
		2150 - 8/1/62					
		Blue Melae Report		100	-	-	
		Traveling exp.		85	14	9	
				2000	-	-	2000
							1

# General Expense

91

1959				1960				
July 31	To Cash	CB2	λ	496	July 31	By Transfer	λ	380
	.. Banking Office	..	λ	4915		.. Development	λ	56175
	.. M Sea	..	λ	5446				
	.. Radio	λ		5				
	.. 56.175	λ		111				
				6055				6055
1959					1960			
Oct 5	To Cash	CB3	λ	241610	July 31	By Development	λ	78127
Nov 6	.. Cash (Advertising)	CB4	λ	16311				
	..	..	λ	2163				
Dec 31	M Sea Rates	λ		17921				
	.. Banking Office	..	λ	182				
1960								
Jan 30	Telephone	CB6	λ	359197				
Feb 15	Cash	CB7	λ	517107				
July 31	Telephone	CB8	λ	11118				
May 16	Freight	λ		43114				
	.. Laundry	λ		4019				
July 22	.. Sunnies	λ		6116				
July 31	Telephone	CB9	λ	152347				
				78127				78127
1961					1961			
Nov 30	To day Telephone	λ		19292	July 31	By Development	λ	301104
Dec 31	To day Telephone	λ		29121				
..	M Sea Telephone	..		7991				
				301104				301104
1962					1962			
Jan 31	To Sydney/High/Lite	λ		224	Jan 31	By High/Lite/Advertising	λ	20
	.. M Sea/Telephone	..		29172		.. M Sea Development	λ	5034
	.. Radio/Baggish	..		2239				
	.. M Sea Advertising	..		5				
				7034				7034
May 14	.. Sydney/High/Lite/Advertising	CB12	λ	31	July 31	By M Sea/High/Lite/Advertising	λ	110
	.. Sydney/High/Lite	..		2126		.. Repud. Cash/High/Lite	λ	1105
July 31	.. Sydney/High/Lite/M Sea	λ		261010		.. Radio	λ	21114
	.. Radio	..		71114		.. M Sea Development	λ	2491110
	.. Telephone	..		251611				
	.. Forward	..		140127				3745

General Expenses

DETAILS

1962							
		<u>Forward -</u>		140	12	7	
July 31		To by phone phone records		232	11		272 12 7
1962				272	3	7	1963
July 31		To by phone phone records		46	2	2	July 31
		Postage		15	12	9	By Refund MISA 166
		Cartage		260			Share Stanley & Carter 927
		Rates		59	19	7	Line Development 950
		Insurance for Tel. Exp. Bank 936		1	3	6	
		SSI. fees		373	3		
1964				272	3		272 3
Jan 22		To bank: SUBSCRIPTION AUSTRALIAN ATOMIC ENERGY COM. PRO. PHILIP ARMY CUMMINGS FIDSON	16	5			July 1
Apr 7		FILED FEES		10	10		31
		Tully. Wilson		2			Refund Stamp duty CB17
		REPT. of MINES. MINING JOURNAL		5	10		Print. Developments 134
1963		Aug 30	Tallyroll - Filing Fees (Sgt)	31	9	6	Refund
		Oct 1	Petty Cash	3	18	9	Bank charges
		Jan 20	Tallyroll - Filing Fees - ADDRESS	4	2	5	Subscriptions
		June 19	Reg. Exp. P.T. - Concrete charges	2			Petty Cash
			✓ ✓ Gls.	1			
		July 31	Bank Exp	1			
		31	✓ ✓	5			
		31	Rent Storage - freight. 70.9.2	7	17	6	
			69.9.2	33			9 6
		31	Stamp Duty 63.9.6	12	14	4	
				103	15		
							103 16 -
							103 18 -
		Dec 31	Long Office Fees	13			1964
			Exchange	5			Dec 31
			Postage etc	2	4		By Int. 87
				21	15		15 9 -
				21	9		21 9 -
		1965					
		Jan 10	To bank - long office fees	19	16	6	
			Freight Postage	32		5	
			Ent. Expenses	7			
		Dec 31	long office fees	11	15	3	
			do	4	13	6	
				21	9		

Exchange & Bank Fees

1959

Apr 20	20 Cash	CB1	2	37	11	0	July 31	By Development	1/3	2	89	11	3			
June 24	"	CB1	2	38	8	0										
		CB2	2		6	3										
		"	2		2	9										
		"	2		10	0										
		"	2		3	11	9									
July 11	"	CB2	2		1	3	3									
31	M Isa	1/2	2		9	3	11									
					6	1	3									
					8	9	13									
					89	13	3									
1959								1960					89	13	3	
Del 5	20 Cash	CB3	1		6	3	0	July 11	By Development	1/11				187	8	2
Nov 6	"	CB4	1		3	3	9									
24	"	"	1		6	17	9									
Dec 21	"	CB5	1		1	3	0									
31	"	CB5	1		10	0	0									
	M Isa	1/5	1		33	11	0									
1960																
Jan 20	Cash	CB6	1		5	1	5	6								
Mar 31	Cash Entry	CB7	1		5	7	13	19								
					6	0	0									
May 16	"	"	1		1	16	9									
Jun 14	"	CB8	1		2	18	0									
July 12	"	"	1		2	18	6									
Oct 6	"	"	1		2	3	0									
10	"	"	1		5	0	3									
Jan 15	"	"	1		15	0	0									
Jan 21	"	CB8	1		74	7	6									
July 31	"	"	1		15	17	6									
Aug 16	M Isa	1/8	1		20	11	5									
Aug 22	"	1/9	1		18	1	0									
Jan	Envelope	CB9	1		3	9	0									
April	"	"	1		3	2	9									
May	"	"	1		2	0	0									
June	Bank Fee	"	1		1	0	0									
July	"	CB9	2		12	0	0									
"	M Isa	1/10	1		1	17	9									
					187	8	2							187	8	2

E1

Enclosure

Year	Date	Description	Debit	Credit	Year	Date	Description	Debit	Credit
1961	March 31	To M Am	13	519	1961	May 31	By M Am Development	17	519
1962	Jan 31	Bydney	912	215	1962	Jan 31		919	646
		Ad. Sta		2196					
		Bank N.S.W	1813	10					
				646					646
	July 31	To Bank N.S.W	11	15		July 31	By Mine Development	923	115
				10					
		Ad. Sta	922	10					
1963				115	1963				115
	July 31	To Bank N.S.W	1815	1		July 31	By Mine Development	930	1
1964	Sept 31		16	15		July 31	By Mine Development	934	15
1965					1965				
	June 30	To Cash	19	10		Dec 31	By Cash	19	1108
	Dec 31		20	210			By Pine Development	40	194
				23					23
				1					1

Account No.

*Deanna Drill Expense*

*83*

Account No.

Sheet No.

Sheet No.

1966

1960

May 16	W. Isa	18	514	15	July 31	By Development	11	1353	11	10
May 22	..	44	708	10						
May 31	..	10	1222	12						
			130	19						
			1353	11						
1961			1353	11				1353	11	10
Nov 31	W. Isa	13	628	4	July 31	By Sydney	14	500	-	
	..		180	.		.. New Development	17	728	4	3
1962			728	4	1962			728	4	3
Jan 31	To Profit Development	19	1	16	Jan 31	By Sydney	18	1	16	
July 31	..	24	507	.	July 31	.. Payment	21	500	.	
			507	.		.. Refund		7	.	3
			507	.				507	.	3



Account No.

# Likings Allowance

R4

Account No.

Sheet No.

J. G. Ridgway

Sheet No.

1961

Date	Description	Debit	Credit	Balance
July 31	To A. Charles	15	3000	
July 31	By Mrs Deallper	17	3000.	.