

BRITISH GUYANA

REPORT
of the
LANDS & MINES DEPARTMENT
for the year
1959

Lands & Mines Department,
P.O. Box 59,
Georgetown, British Guiana,
July, 1960.

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DEPARTMENT OF LANDS AND MINES,

Georgetown, Demerara.

25th July, 1960.

The Honourable Minister
of Natural Resources.

Sir,

I have the honour to submit the following report on the work of the Lands and Mines Department for the year ended 31st December, 1959.

2. Revenue collected during the year under review totalled \$823,893, representing an increase of \$24,568 on the collection for 1958.

3. The following table is a comparative statement of the revenue and expenditure during the last seven years:

	Revenue	Expenditure
1953	591,540	453,279
1954	726,490	432,736
1955	800,669	454,225
1956	912,943	561,369
1957	922,484	472,241
1958	799,325	563,231
1959	823,893	501,853

The expenditure for 1959 includes the sum of \$59,583, "Aerial Photography of British Guiana" - Colonial Development and Welfare Scheme - D 3824, which is under the control of this Department, the nett expenditure on Services for the Department being \$442,270.

4. Details of revenue and expenditure for 1959 are given in Appendices I and II to the report.

I and II

SECTION ILANDSCROWN LANDS

5. Administration: Crown Lands are administered under the provisions of the Crown Lands Ordinance, Chapter 175, and the Crown Lands Regulations made under that Ordinance. The issue of grants of Crown Lands which became freehold property after five years, with mineral rights reserved to the Crown, was discontinued in 1938. Crown Lands are now only alienated under leases for periods not exceeding twenty-one years with the right of renewal for a further period of twenty-one years. In special circumstances, however, the Governor may issue a grant, licence of occupancy, or increase the term of a lease.

New draft leases for agricultural and cattle grazing purposes over undeveloped Crown Land prepared during 1958 by the Land Adviser to the Government, in consultation with the Agriculture Department, the Land Development Department and this Department, were considered by Government and after certain amendments had been made, the drafts were referred to the Law Officers of the Crown for such amendments as were necessary to the Crown Lands Regulations.

6. Permissions to occupy Crown Lands for periods of one to ten years are issued for the purpose of testing the land. This privilege has been greatly abused by small farmers, however, who, because of the nominal charges, took up a considerable amount of land most of which they abandoned after a year or two without surrendering their titles. The present policy is therefore aimed at curtailing this privilege as much as possible by reducing the maximum term to five years and the size of the plot to be occupied, after which the permittee is required to lease the area if the land proves to be suitable, or to vacate it if otherwise. Ad hoc permissions to permit removal of specified articles from Crown Land are also issued for short periods.

7. During 1959, the total number of applications approved for various titles over Crown Land was 766. This represents an increase of 68 over the total for 1958, and embraces an aggregate of 16,741 acres. Details showing the various types of applications approved are to be found at Appendix III.

8. Issue of Titles: During the year under review, 589 titles for agricultural, grazing, residential and business purposes over a total of 12,463 acres of Crown Lands were issued. Of these, 151 covering a total area of 4,362 acres were re-issues of expired titles. In addition to this, ten permissions to graze cattle over 405 square miles in the hinterland savannahs were renewed.

A comparative statement of titles issued during the years 1957 -1959 is to be found at Appendix IV.

9. The systematic inspection of Crown Lands held under title from the Crown which was commenced in 1956, was continued by the ad hoc Working Party, staffed by two former Lands and Mines Officers with considerable experience in land matters, and by two surveyors of this Department seconded for duty with the Party. In cases where the conditions of the titles are not being complied with, cancellation is recommended. If accepted by Government, possession of the land is resumed on behalf of the Crown. Areas so resumed are made available either for land settlement or for occupation by those in need of land.

10. Mr. C. Cole, Member of the Party was absent from the colony on vacation leave from 15th May to 20th October, 1959 and as a consequence the Party released one surveyor, temporarily, for regular survey duty. The vacancy thus created was filled by an apprentice.

11. In order to relieve a difficult situation due to shortage of senior officers, on this occasion in the clerical branch, the Chairman of the Party took over administrative charge of the Lands section in addition to his normal duties for a period of three months from 1st April, 1959.

12. The inspection of the estates and villages from Plantation Ogle to the Mahaica River, on the West Coast of Demerara, for the Land Utilisation Committee, on which a start had been made late in 1958, was completed early in 1959. A full report, illustrated by plans, was submitted to Government on 31st January 1959. The area inspected was approximately 35,615 acres, utilised as follows:-

cane cultivation	23,600	acres	
rice cultivation	2,270	"	
ground provisions	620	"	
coconuts	1,000	"	
pasturage	4,300	"	
housing	3,300	"	
unoccupied	525	"	= 35,615 acres

13. The inspection of the area on the West Bank of the Demerara River - from Plantation Vreed-en-Hoop to Plantation Georgia, both inclusive - was next undertaken. The report on this section, together with plans, was forwarded to Government on 2nd March, 1959 and this disclosed that the area inspected was approximately 51,000, of which some 26,500 acres were under beneficial occupation as follows:-

cane cultivation	10,246	acres	
rice cultivation	3,243	"	
ground provisions (mixed)	3,019	"	
- do - (chiefly cassava)	2,977	"	
- do - (" plantains)	700	"	
pasturage	3,182	"	
cocoa	160	"	
coffee	778	"	
citrus	22	"	
housing	2,173	"	

The area not cultivated or beneficially occupied was approximately 24,400 acres, or just under 50% of the area inspected.

14. Most of the abandoned area extended from Plantation Wales (cum annexis) to Plantation Georgia. Owing largely to difficulty in regard to title, little or no development has taken place within recent years. For this reason Government selected this area for the first investigation under the Land Registry Ordinance, 1959, an Ordinance enacted by the Legislative Council, which seeks to implement the recommendation of the Land Registration Committee, appointed by the Executive Council to consider and report on the desirability of the introduction of a modern land registration system in the Colony, and the form which such system should take. The system sought to be introduced by the Ordinance is based on the Torrens system of land registration, with suitable modifications to meet local conditions.

15. The other large scale inspection undertaken during the year was the settlements on the banks of the Mahaica River, extending from the public road up river to St. Cuthbert's Mission, approximately 48 miles from its mouth. The area inspected on this occasion was 34,175 acres, the majority of which

was being utilised for rice cultivation. Cattle were being grazed on the open savannah lands.

16. The grazing areas of 36,457 acres on the Abary River held by Messrs Berbice Development Co. Ltd. and by Messrs The Kubawer Cattle Ranch Co. Ltd. were also inspected.

17. In addition to these large scale inspections "spot inspections" were undertaken as and when required by Government.

18. All applications for issue of title continue to be "screened" by the Working Party before transmission to Government for consideration. Applications for transfer are similarly "screened" prior to my approval.

19. The total number of tracts inspected during 1959 was 754 covering an area of 178,166 acres, approximately 278 square miles. The following table shows the work done during the years 1957, 1958 and 1959:

Locality	1957		1958		1959	
	No. of tracts inspected	Area (Acres)	No. of tracts inspected	Area (Acres)	No. of tracts inspected	Area (Acres)
<u>County of Demerara</u>						
West Coast	-		-		1	500
West Bank	-		-		120	51,000
East Bank	7	21,297	4	1,246	-	
East Coast	80	27,043	2	3,036	176	43,777
Mahaica River	30	15,000	-		403	34,175
Mahaicony River	96	4,261	350	25,784	16	9,086
Abary River	4	2,732	649	85,582	19	38,400
<u>County of Essequibo</u>						
Essequibo Coast	180	15,824	1	3,100	2	500
Essequibo River, inclusive of islands	7	67	370	17,508	-	
Pomeroon River	6	298	-		-	
Mazaruni River	-		-		16	353
<u>County of Berbice</u>						
East Coast	2	613	-		-	
West Coast	92	49,411	2	854	1	375
Berbice River	-		1	615	-	
Canje River	-		26	8,204	-	
Courantyne Coast	-		-		-	
Courantyne River	93	4,052	-		-	
	597	140,598	1,405	145,929	754	178,166

20. As a result of failure on the part of the holders to comply with

the warnings served on them from time to time, eighty titles, covering 3,043.5 acres, were cancelled during the year on the recommendations of the working Party, viz:-

	<u>No.</u>	<u>Area - Acres</u>
Conditional Grants	34	150
Leases	38	1,910
Quarry Licences	1	1.5
Permissions	7	982
	80	<u>3,043.5</u>

21. Recent trends: Like the previous year, 1959 was a comparatively dry year and the weather affected crops both on the coast and on the banks of the main rivers, resulting in many cases in loss of the rice crop. Nevertheless, more Crown Land on the Alluvial Coastal Belt and on the lower reaches of the larger rivers is being empoldered and put under rice. Throughout the year there has continued a steady increase in the number of applications to mortgage the right, title and interest in and to Crown Land titles, the majority of these mortgages being given by the British Guiana Credit Corporation, who thereby assisted small farmers to develop their holdings.

22. Project Schemes: The Crown Lands embraced by large scale development schemes at Boerasirie, on the West Coast Demerara, and the Black Bush Polder (formerly known as Blocks I and II) Courantyne Coast, remained closed to applications during the year, as well as the unalienated Crown Lands within the proposed Tapakuma Scheme on the Essequibo Coast. Operations for the establishment of the works for both Boerasirie Extension Project and Black Bush Polder continued during the year. Both these schemes are nearing completion.

COLONY LANDS.

23. Administration: This Department administers all Colony Lands including those held under title for various purposes as provided for by the Lands and Mines Ordinance, Chapter 170. Where buildings have been erected and are used for purposes of Government, the Director of Public Works exercises control over such lands.

Colony Lands are the property of the inhabitants of British Guiana having been acquired by the Colony from private owners or from the Crown under absolute grants, for the purposes of Government.

24. Property acquired during 1959 is as follows:

<u>County</u>	<u>Area (Acres)</u>	<u>Description</u>	<u>Purchase Price</u>
Demerara	1,347	Lots 1 and 2, Pln. Endeavour, West Bank Demerara.	\$ 1,000
do.	1.495	Lot 3, Section 6, Blenheim, East Coast, Demerara.	5,000
do.	.250	Lot N, Pln. John, East Coast Demerara	1,250
do.	.358	Pln. Goedverwagting, Wales, West Bank Demerara.	311.89
do.	1.566	Lot A, Section C, Blenheim, East Coast Demerara.	4,500

<u>County</u>	<u>Area (Acres)</u>	<u>Description</u>	<u>Purchase Price</u>
Essequibo	1	Left Bank Bonäsika River, Essequibo	Free Grant
Berbice		Plns. Mara, Germania and Vryberg, Berbice River	do.
Berbice	88.74	Pln. Adventure, Courantyne Coast, Berbice.	\$ 28,622

25. Sports Grounds: At Thomas Lands and in and around Georgetown, a number of athletic clubs and institutions lease Colony Lands for recreational purposes, viz., the playing of cricket, football, hockey, tennis, golf, rifle shooting and athletics. The terms of the leases are generous, not only because they provide healthy recreation for the inhabitants of the city and the suburbs, but use of the land for recreational purposes ensure free passage of sea air to Georgetown or serve as lung spaces. The grounds are well kept and the facilities for games and sports are considered to be better than in any of the West Indian colonies.

FORESTS

26. Administration: This department continues to administer forest activities over Crown Lands outside the boundaries of that portion of the Colony which, under the Crown Forest Ordinance as from 1st January, 1954, was declared to be Crown Forest, and which has since been under the control of the Forest Department. Revenue from all forest products extracted from both the Crown Forest and Crown Lands is still, however, collectible by this Department, which accounts for revenue on forest products.

About four-fifths of the land area of the Colony is forested, but it is estimated that only about 20 per cent of this is reasonably accessible for the exploitation of timber on an economical basis. All large-scale extraction of timber, etc., is from the Crown Forest.

27. Forest Products: The following is a comparative statement of the output of main forest products, exclusive of balata, for the years 1958 and 1959:

Product	Unit	1958	1959	Increase	Decrease
Timber					
Class I	cu.ft	3,805,742	4,063,428	257,686	-
Class II	"	1,122,752	914,046	-	208,706
Class III	"	182,195	214,214	32,019	-
Lumber					
Class I	ft. B.M.	84,118	107,615	23,497	-
Class II	"	436,178	321,556	-	114,622
Class III	"	7,117	14,243	7,126	-
Firewood	Cords	27,747	22,548	-	5,199
Charcoal	pounds	12,196,308	13,572,355	1,376,047	-
Shingles	units	1,119,881	696,425	-	423,456
Paling Staves	"	435,552	521,175	85,623	-
Wallaba Poles	cu.ft.	94,112	94,998	886	-
Vat Staves	feet	35,813	13,632	-	22,181
Paling Posts	"	827,993	689,624	-	138,369
Spars & Beams	"	32,675	18,571	-	14,104
Manicole	Units	3,500	36	-	3,464
Wattles	"	9,204	24,974	15,770	-

28. At Appendix V is to be found details of the production by the principal producers of forest products.

29. Particulars of timber, firewood, etc. cut and used by Mining Companies on their mining concessions in connection with their mining operations will be found at Appendix VI. No royalty is collectible on such forest products.

30. Forest Revenue: A comparative statement of revenue derived from forest products for the years 1958 and 1959 is as follows:-

Nature of Revenue

	<u>1958</u>	
<u>Rents:</u>		
Woodcutting Licences	26.01	\$ 385.30
Balata Licences	7,680.00	3,920.00
Permissions	22.51	4.00
 <u>Royalty:</u>		
Timber	409,427.66	411,834.47
Balata, Rubber, etc.	7,939.84	9,936.50
Miscellaneous	456.06	468.56

31. Woodcutting and other forest titles: 14 new woodcutting licences over Crown Lands covering an area of 2,437 acres were issued during 1959, and 62 renewals of expired titles were granted covering a total area of 12,175 acres. In addition to this, 114 permissions for the felling and extraction of scattered trees and to burn charcoal, etc. were issued.

Details of the applications approved are given at Appendix VII.

32. Quarries: Twelve quarries were operated during the year and the total production of stone amounted to 67,287 tons. This represents a decrease of 1,642 tons from the amount of 68,929 tons produced during the year 1958 and was occasioned by the steady falling off of demand as a result of the slowing down of the building trade.

33. Miscellaneous: During the year under review, the total production of bark was 355,260 pounds as compared with 595,760 pounds produced during 1958. The decrease of 240,500 pounds was due to a falling demand both export and local.

34. Seizures and Prosecutions: One seizure was made of forest products (timber) illegally removed from Crown Lands. The logs were sold by the magistrate under the provisions of the Crown Lands Regulations.

SECTION II

MINES

GENERAL:

35. Concessions and Leases: Mining Titles in existence during 1959 are shown at Appendix VIII.

Licences: 1557 claim licences and 127 River location licences were in existence at 31st December, 1959.

IX

Exclusive Permissions: Exclusive Permissions in force during 1959 are listed in Appendix IX.

Prospecting Licences: 890 prospecting licences were issued during the year. The licence to prospect for radio-active minerals which was issued in 1958 was not renewed and no new licences were issued during the year.

Trading Licences: 90 licences to trade in gold and/or diamonds were issued while 77 licences to purchase gold for the manufacture of jewellery were issued.

Mineral production and Export: The quantity and value f.o.b. of minerals exported are kindly furnished by the Comptroller of Customs and Excise.

Mineral	Produced	Exported	Value of Export
Gold (Troy ounces)	3,448	712	\$ 39,302
Diamonds (Metric carats)	62,328	60,992 *	3,026,760
Bauxite (Long tons)	1,674,416	1,514,686 **	24,789,280
		Total	27,855,342

* Uncut

** 272,305 tons calcined.

36. Revenue: Revenue from mining amounted to \$209,045 which is \$23,499 less than that for 1958, the decrease being due to a great extent to the decline in royalty collected on bauxite exported during the year.

37. Legislation: No new legislation affecting the Mining Laws administered by the Lands and Mines Department was enacted during 1959.

38. Seizures: Of ten seizures made during the year, five were released. Prosecutions were instituted in four cases of the seizures, while one is still receiving attention. Of the four prosecutions, one was withdrawn and the diamonds sold under Section 86(3) of the Mining Ordinance, Chapter 196, while another was dismissed and the diamonds returned to the owner and convictions were obtained in the other two.

39. Sales on behalf of Amerindians: The Lands and Mines Department continued to dispose of gold and diamonds won by Amerindians within declared Amerindian districts and during the year, 1,166 carats of diamonds and half an ounce of gold were sold on their behalf.

40. Labour: 3,538 mining privileges and 136 registration certificates were issued. The average labour force employed directly on mining was as follows:

<u>Mineral</u>	<u>No. of workers employed</u>	<u>No. of persons working on their own behalf.</u>
Gold	10	500
Diamonds	40	4,000
Bauxite	1,985	
Columbite	36	
Manganese	387	
	2,458	4,500

41. Accidents: A classification of the 29 reportable accidents occurring in connection with Mining operations is given below:

<u>Cause</u>	<u>Fatal</u>	<u>Serious Injury</u>	<u>Temporary Incapacity</u>	<u>Minor</u>
Electricity				
Explosives				
Machinery	1	1	12	1
Handling Tools				2
Falling or struck by falling body			2	3
Diving				
Miscellaneous			2	5
	1	1	16	11 Total 29

* Naraine Ball, general mechanic, Demerara Bauxite Company Limited, was working in the vicinity of the rear end of a stationary D - W 21 Tournapull when a second machine reversed into the first one, crushing him between the buffer - he sustained fractures of the pelvis and left femur.

42. Use of Explosives: 7 blasting certificates were issued by the Commissioner of Lands and Mines.

43. Mine and Quarry Inspections: The Inspector of Mines spent 35 days in the field on inspection covering quarry and mine operations.

The Commissioner of Lands and Mines inspected the operations of Reynolds Metals Limited, Demerara Bauxite Company Limited and North West Guiana Mining Company Limited.

44. Hydro-Electric Power Development: The Tumatumari Hydro-Electric power station continued on a care and maintenance basis.

Demerara Bauxite Company Limited continued routine measurements of river stage in the main rivers of the Colony.

A new gauging station is being erected at Hillfoot in the Mazaruni River on behalf of the Government of British Guiana and is expected to be put into use during 1960.

45. Mining Disputes: Two complaints were filed during the year and they were both disposed of by the Inspector of Mines.

46. New Bauxite Area: During the course of a Geological Survey of the Kopinang Valley in the Potaro district, bauxitic material was found occurring as a crust capping the higher ground over an area of about 900 square miles.

47. Conference: The Commissioner of Lands and Mines and Inspector of Mines were official delegates to the 5th Inter Guiana Geological Conference held between 28th October and 5th November, and presented a joint paper entitled " Mining Development (Legislation and Taxation) in British Guiana".

EXPLORATION

48. A total area of 7,509,541 acres was covered by Exclusive Permissions details of which re given at Appendix IX.

49. Demerara Bauxite Company Limited were forced by adverse conditions in the bauxite industry and low bauxite sales to reduce the expenditure on exploration. This led to a reduction in the size of their exploration parties and the concentration of activities in certain areas.

Prospecting operations were confined to Exclusive Permissions 561 and 564. In both of these areas extensive surface exploration was carried out together with topographic mapping.

At Deriri, in Permission 561 where lateritic material had been encountered which occasionally appeared to be aluminous, 7 drill holes were put down by Solite drill totalling 282 feet but no bauxite of commercial grade was discovered.

In Permission 564, low grade bauxite outcrops were found on the Cattle Trail near Iron Mountain. In order to investigate this occurrence, some 14 holes were put down totalling 663 feet. The results, however, were disappointing, no bauxite of commercial significance was found.

East of the Cattle Trail near mile - 60, a fair sized hill with a laterite capping was located and to the East of this hill some outcrops and boulders of good grade bauxite were found. In this area 4 holes were put down totalling 280 feet. The results indicated that the occurrence is of a very local nature and that there has been no bauxitization on a large scale.

50. Reynolds Metals Company did no surface prospecting during the first half of the year, work being confined to drilling. A 21-man crew operated from Kwakwani and a 20-man crew from the bush camp at Canje Creek. The two crews were under the supervision of the resident geologist.

A solite rotary drill commenced operation in February and completed 11 exploration holes along the new Bissaruni haul road and 20 holes in the area north of 24 - Green creek. At the end of the period this unit was drilling at 800 ft. intervals along a South to North line from 24-Green creek to Kurubuka.

The limited capacity (250 ft. approx.) of the Solite is inadequate as the depth to basement has proved to be greater than 250 ft. in 13 of the 20 holes drilled to date in the area north of 24-Green creek. A more powerful drill is needed for this and other deep drilling and funds have been provided for the purchase of a suitable drill which is expected to be delivered within the next six months.

Development drilling was done by 2 Empire Drill crews in 27 Manaka and 24-Green creek where an overburden of 70 to 100 ft. in many of these holes was found to be beyond the efficient drilling limit of the Empire. To improve efficiency the Midget drill (also the Solite) was used to reach top of ore and after setting casing, sampling was completed by the Empire. Unfortunately it has not been possible to recover satisfactory samples using the Midget or Solite drills.

Development drilling on the Canje grid around the discovery hole CK-33 continued throughout the period. A total of 30 holes were drilled with the Mayhew drill and of these 18 were ore holes in which some core was recovered. Analyses on some of these cores show the deposit contains bauxite of satisfactory grade, but too few samples have been collected to permit reliable estimates at this time.

Road and bridge maintenance and the operation of the store and service camp at Flat Landing were the only activities in Exclusive Permissions 557 and 558 during this period.

During the second half of the year drilling was continued with three mechanical drills and two hand operated Empire drills. Operations were based at Kwakwani (23 men) and at the Canje base camp (18 men). The store at Flat Landing was discontinued at the end of August and all operations are now supplied through Kwakwani.

Kwakwani Section. Development drilling at 24-Green creek was completed in July and the crews moved to 22- Kurubuka about 5 miles north east of Kwakwani, where Drilling was continued on a 400 ft. grid. One solite rig was used to drill down to the top of ore and to set casing, while sampling was done by Empire drill.

Development drilling with a single drill continued throughout the period. No samples were collected as the Solite drill used does not permit satisfactory samples to be taken. The drilling completed was somewhat more encouraging than previously as depths of overburden proved to be slightly less than in other parts of the Canje area. Efforts were concentrated in the north western section where the plateau surface is inclined to the north. The bauxite horizon appears to remain almost horizontal so that lesser depths of overburden are found in the holes as progress is made to the northwest. The majority of holes drilled were in the 175 to 200 ft. range with a few of 120 to 150 ft. and four between 97 and 119 ft.

BAUXITE

51. Petromina (British Guiana) Ltd. During 1959 exploration activity was sustained and progressive particularly in respect of bauxite, which has attracted a new company, Petromina (British Guiana) Limited, to explore the extensive lateritic shelf surrounding the Ebini and Itaki hills in the Mazaruni district, for commercial bauxite deposits.

The exploration was confined to two parts of the Permission, the Southern Ebini Hills, which lie immediately to the west of the Kaburi River, and the Itaki Hills, situated near the right bank of the Mazaruni River at Karawarambo Stillwater and Itaki Creek.

The Southern Ebini Hills were explored between June 27 and October 31, 1959. During this period the following work was completed:-

Lines cut and surveyed	. . . .	35 miles
Empire drill holes put down	. . . .	29
Total depth of drill holes		529.8 feet
Total samples taken ($\frac{1}{2}$ M intervals)	. . . .	323
Pits dug or partly dug	. . . .	8
Total depth of pits	. . . .	33.79 feet
No. of pit samples (only 2 pits)	. . . .	7

Work on pits was discontinued in favour of Empire drill holes which were found to be a faster method of sampling.

The Itaki Hills survey was carried out between November 16 and December 18, 1959. During this period the following work was done:

Lines cut and surveyed	. . . .	72.5 miles
Empire drill holes put down	. . . .	35
Total depth of holes	. . . .	620 feet
Total drill samples taken	. . . .	378
Pits dug or partly dug	. . . .	8
Total depth of pits	. . . .	33.79 feet
No. of pit samples taken	. . . .	7

52. Harvey Aluminum of America. This Company who carried out an extensive exploration programme between 1953 and 1957 when they suspended operations, again became interested and at the year end were making preparations to continue prospecting for bauxite ores.

MANGANESE

53. North West Guiana Mining Company Limited: Exploration for manganese by African Manganese Company on behalf of the above Company was continued in the area west of Matthews Ridge to the Venezuelan Border, and completed in 1959. Approximately 320 miles of lines were cut and an area of about 300 square miles examined. The end of the year saw the exploration party completing arrangements and preparations for resuming work on the remote Exclusive Permission 543.

Throughout the first six months of 1959, an exploration party consisting of the Mine Geologist and fifteen men was engaged in searching for manganese ores solely on Exclusive Permission 488.

The base line was cut from a point six miles South of Five Stars due west to the Venezuelan border and then South East, parallel to and several miles distant from the border. The examination was carried out along parallel lines cut at one mile intervals from the base line.

OIL

54. No field operations were conducted on California Oil Company on their offshore exploration licence. The only work carried out during 1959 was an analysis of geophysical data recorded from the marine seismic survey completed in 1958.

RADIO-ACTIVE MINERALS

55. During the year the United Kingdom Atomic Energy Authority closed their office in Georgetown and withdrew their resident geologist from the Colony.

56. On the other Exclusive Permission titles mentioned in Appendix IX no work was done and therefore no reports are possible.

PRODUCTION AND DEVELOPMENT

57. As in previous years, gold, diamonds and bauxite were the only minerals exported, the total value amounting to W.I. \$ 27,855,342.

BAUXITE

58. Two companies continued to mine and ship bauxite, Demerara Bauxite Limited and Reynolds Metals Company.

The total amount of bauxite produced was 1,674,416 tons as compared with 1,585,879 tons in 1958.

Although the increase is not spectacular, the latter half of 1959 showed improvement and there are indications that production for 1960 will be substantially above the figure recorded for 1959. The improvement was due to increased production of metallurgical and calcined grades of bauxite by Demerara Bauxite Company Limited. As regards the metallurgical grade the Company were fortunate in being able to ship an extra 107,700 tons for the United States Government stockpile. The improvement on calcined shipments could have been better, had not the consumer situation been adversely affected by the recent United States steel strike. Shipments of chemical grade decreased slightly.

59. Demerara Bauxite Company Limited. Mining activities continued on a reduced scale in the Mackenzie and Ituni areas. Total production amounted to 1,511,077 long tons (dried basis) as compared with 1,397,340 tons in 1958. 356,310 tons came from Crown land leases and 1,154,767 tons from private property.

In order to meet quality and grade specifications and also to reduce the heavy cost of stripping and transportation under the prevailing difficult conditions, a new deposit designated "Dorabece" was prepared for mining early in the year. Total production from this mine was 309,510 tons.

Mining at Maria Elizabeth was discontinued although the renewal of overburden by hydraulic methods was continued.

Mine development drilling was carried out under contract by Boyles Brothers Drilling Company Limited, at the deposits Warababaru No. 1 (Ituni) and Yararibo (Mackenzie area). A total of 96 holes amounting to 6,782 feet were drilled.

The construction schedule for the alumina plant has remained unaltered and the plant is expected to commence operations early in 1961. Three-quarters of the concrete structures and all major tanks are now completed. Activities during 1960 will be on an increased scale when the mechanical and electrical equipment will be installed.

The Company's total employment force at December, 1959, was 1,685, of which 70 were staff. The slightly improved business conditions later in the year enabled the company to re-employ some of the men laid off during 1958. The total increase in payroll strength during the year amounted to 121 men. Notwithstanding the difficult times, industrial relations were good.

The Collective Labour Agreement which was signed in December, 1956, with the British Guiana Mine Workers Union for a period of 3 years, came to an end and a new agreement was signed which went into effect on January 1st, 1960. The new agreement covers a two and a half year period and provides for a 12% increase in wages. Other provisions include a severance pay scheme, a Sickness and Accident Indemnity Plan and an improved vacation programme.

The Company continued its programme aimed at improving living conditions and educational facilities in the Mackenzie area. On April 17th a new Nursing School was opened by the Honourable Janet Jagan, Minister of Labour, Health and Housing. The school is to be maintained by the company and will train nurses as laid down by the General Nursing Council of British Guiana. The present enrolment is 16.

On September 11th, the Mackenzie High School, completed and equipped at a total cost of \$165,000 was opened by the Honourable Balram Singh Rai, Minister of Community Development and Education. The enrolment at the end of the year amounted to 150 pupils.

The Trade School which was opened in May 1958 has made satisfactory progress. The School has now been officially registered with the Board of Industrial Training as "Master" for the purpose of training certificates and has also received authority to act as an examination centre for the City and Guilds of London Examination Board. A second enrolment of 19 students was admitted in September, and in December a vice principal was added to the Staff. At present a total of 28 students are attending the courses.

60. Reynolds Metals Company: 1959 was a year of adjustment to operation of the Mombaka Mine instead of the Wong Mine which has resulted in a decreased rate of production.

Total production for the year was 157,307 long dry tons of which Mombaka Lease area produced 143,454 tons and Wong Lease 13,853 tons. This shows a decline of 31,232 tons from the figure of 188,359 tons produced in 1958. All of this ore was direct shipping grade and the beneficiation plant was used for dry crushing only.

The total personnel remained nearly constant for the year 1959 at approximately 300 whereas in 1958 it had varied from 700 to 300.

Work was done on six capital projects during 1959. These projects consist primarily of improvements to bulk materials handling facilities at Kwakwani and Everton. They were not completed and work on them will continue during 1960.

From an operating standpoint, the year's work consisted mainly of small improvements and adjustments to the new conditions.

The production of bauxite over the past 5 years is shown in Appendix X.

GOLD

61. Only 3,448 ounces of gold were produced during 1959. The downward trend of gold production since 1956 was suddenly aggravated by the closing down of dredging operations in the Potaro district by British Guiana Consolidated Goldfields Limited, at the end of 1958.

XI. Production for the last 5 years is shown in Appendix XI.

An examination of the Konawaruk river was carried out by Pato Consolidated Gold Dredging Limited under option agreement with British Guiana Consolidated but no offer was made for the undertaking because it was concluded that the greater part of the gold bearing reserves on the Konawaruk are not economically dredgeable due not so much to the value of the gravels as to the physical characteristics of the river.

62. R.G. Humphrey continued to work stringers in the Kaburi by sinking pits on the hillsides but during the very heavy mid-year rains, the sidewalls caved in due to the plastic nature of the surface clays through which the pits were dug, and altogether only 55 ounces of gold were recovered.

63. W.A. Baird recovered 820 ounces from a quartz milling operation in the Barima, North West District.

The remainder of gold production came from small surface washing operations on claims scattered throughout the mining districts.

64. L. Rafferty's claims on Tiger Creek on which the old Growler Mine is believed to be located remained unworked throughout the year. A Mining consultant from the United States of America arrived in Georgetown to visit the property but had to leave without doing so due to the breakdown of negotiations for an option agreement.

65. R.G. Humphrey Gold Mines Ltd. No work of any kind was done by R.G. Humphrey or by Barima Minerals Limited on their concessions at Aurora in the Cuyuni District and Arakaka, North West District, respectively.

DIAMONDS

66. Total production was 62,328 metric carats which represents the highest output of the industry for any year since 1932. This remarkable increase is more than twice the average production for the past 5 years and is due entirely to activity in the Kurupung River and its tributaries in the Mazaruni district above the Kumerau Falls. This production has completely overshadowed that from other districts, and at the end of the year, nearly 5000 men from all parts of the country were engaged in this operation.

The bulk of the recovery so far has been from diving on the alluvial gravels in the bed of the East Kurupung river.

A considerable amount of blasting is required to dislodge the boulders overlying the gravels and there has been cause for some official anxiety concerning the modes of transportation, handling and storage of explosives and blasting accessories in the area.

Mining disputes as to what land has been lawfully located have inevitably followed in the wake of these discoveries, and these have been dealt with in the field by the Wardens in the normal way.

67. Neither of the companies, British Guiana Diamond Mining Corporation Limited and Central Guiana Exploration Company Limited, did any work during the year as they are both reported trying to raise further capital for the installation of larger dredging machinery on their holding in the Mazaruni district.

68. E.B. Winter did very little work on his concession in the Kopinang, Potaro district and the same is true of J.A. Eytte in the Tacouba, Mazaruni district.

69. Following on representations by the British Guiana Miners Association, which represents the porknockers or diamond miner, Government decided to vary the boundaries of the Upper Mazaruni Amerindian reservation to permit of prospecting/mining in the upper reaches of the Mazaruni district over an area of 975 square miles. Interest centred on the area around Imbaimadai where there is an airstrip capable of landing Dakota-type aircraft and several expeditions were sent in to this area by various diamond traders foremost among whom was M.C. Correia.

A feature of the decision to open this area in an attempt to halt the drift of porknockers back to the coastlands is the restrictions to six of the number of mining claims which can be located under an individual prospecting licence. It was also decided not to grant blanket prospecting rights in the form of exclusive permission over any part of this area. The area was declared open as from the 15th November and only 41 claims have been located and 13 carats of diamonds produced. The high hopes of the porknocker have so far not materialised.

XII

The production of diamonds by district is shown in Appendix XII.

MANGANESE

70. Overland transportation difficulties seriously held up the supply of materials during the early part of 1959, when construction progress almost ceased. Throughout the remainder of the year, however, communications steadily improved, speed of construction quickly recovered and good results were achieved.

The Mine Offices, General Stores and Garage were completed and occupied. The Power Station building was completed, and the machinery foundations prepared and all main engines and associated auxiliaries, including a 60,000 gallon bulk fuel oil storage system and a large water cooling plant, for the operation of three 800 K.W. and one 375 K.W. Diesel electric generating sets, were installed and tested.

Three large electric motor driven pump Units, each capable of displacing 2250 gallons of water per minute, were installed at the junction of the Pakera and Alligator Creeks, together with all the equipment for a 6600/400/230 volt, 1800 K.V.A. electric sub-station in the same buildings.

Approximately $2\frac{1}{2}$ miles of 16"/18" diameter pipe line was laid between the pumping station and the plant area at Matthews' Ridge, together with a similar length of high tension underground cable to the main power station.

All the concrete retaining walls, floors, building column footings and machinery foundation blocks were poured for Washing Plant Nos. 1 and 2. All structural steelwork, together with roof and side cladding, for the Washing Plant building were erected and 95% of all the machinery and associated equipment for Washing Plant No. 1 installed.

A suitable site was cleared and levelled in the plant area for the 200' x 100' 'fine Workshops' building. All column footings, machinery foundation blocks, locomotive service pit and floors were poured, all sandcrete block work completed, all structural steelwork erected and 90% of the roof and side cladding erected.

A good start was made on the new village and the initial contract for 50 blocks of married quarters and 35 blocks of bachelors quarters was approximately 20% completed. The Village retail store was completed and in use during the early part of the year.

Six blocks of married quarters were completed on the staff camp site during the early part of the year and all but one occupied by the end of the year.

All the original roads have called for considerable quantities of road surfacing material to be quarried and spread throughout the year to maintain these in condition to withstand the passage of heavy vehicles and loads. A number of new permanent roads were built during the year while a number of temporary ones were cut in preparation for future mining operations.

Very little use was made of the Barima river for river transportation during 1959, but the Company's Barge, "Pakera", was in constant service operating primarily between Georgetown and Port Kaituma, transporting materials, equipment, fuel, provisions, etc. for the Company and railway ties, track and equipment for the railway contractors.

Considerable road hauling was possible over the railway trace during the early part of the year but as railroad construction advanced, an increasing use of the permanent railway equipment was possible. By the end of the year, with track laying completed through to Matthews' Ridge, all freight and personnel movements were concentrated on the railway.

Messrs Pomeroy International Limited, made excellent progress on their various construction operations throughout 1959, and by the end of year had completed all earthworks for the railroad, spanned the Barima River above Arakaka Landing, and completed track laying and ballasting through to the plant site at Matthews' Ridge.

Good progress was made on the erection of the ore handling installation at Port Kaituma and the permanent housing layouts for both staff and workers in this area were completed and partially occupied.

Dredging of the ship canal and turning basin at Kaituma as well as the straightening of many bends in the Kaituma river continued without pause throughout the year.

The number of labourers employed varied during the year but the average has been approximately 387.

Good relations were maintained with the workers throughout the year with the exception of a brief period in mid 1959 when a general stoppage of work was called by the officials of the British Guiana Mine Workers' Union demanding a general increase on wage rates and formal recognition of the Union. A settlement was eventually reached.

Early 1960 should see the start of mining operations and the completion of the railway, ore handling installation and waterway. Shipping of manganese ore from Port Kaituma is anticipated to commence about the third quarter of the year. Still further construction work necessary to attain full production from the mine will continue to completion.

71. ColumbiuM Corporation suspended their pilot dredging operation in the Kunuballi area early in the year and placed the property on a care and maintenance basis. The Company then turned their attention to the Oko area on the Cuyuni river where old gold workings were located.

72. San Francis Metals Company Limited continued with the building locally of their pilot suction dredge for use on the upper Berbice river. At the end of the year the machine was complete except for the installation of the main recovery unit consisting of a hopper, a trommel and a diamond pan manufactured by Fairleede Engineering Company.

SECTION III

SURVEYS

73. The Survey Section was faced with the dual problem of a steadily increasing volume of field work coupled with a continuing shortage of surveyors. During the year under review 216 routine surveys were executed embracing a total area of 28, 873 acres while the number of outstanding surveys continued on the increase owing to the further allocation of Crown land for agricultural and grazing purposes.

The comparative table below shows the position during the past five years:

	1955	1956	1957	1958	1959
Ripe for survey during the year.	377	354	322	251	790
Total number to be executed	818	938	962	813	1,251
Number of Surveys executed	234	298	400	352	216
Number of surveys outstanding	584	640	562	461	1,035

74. Of the 216 surveys completed during the year, 11 were executed with compass and chain and embraced an area of 795 acres. The remaining 205 were executed with theodolite and tape and are exclusive of 20 verifications of Mining Claims.

75. The demand for copies of plans for the various development projects in hand such as soil surveys, Land registration, population Census and Local Government Reform continued to impose a heavy strain on the time and energies of the much over-worked staff, which has been for years now far below full strength.

In addition to its normal duties, the Section continued to render special services to other Government Departments and agencies by

supplying maps, tracings and ammonia prints to the total value of \$5,535.00 of which \$728.72 was for actual survey work.

76. By arrangement with other departments of Government, the Section supplied Licensed Surveyors to the following departments:-

- (a) Local Government for Partition Surveys
- (b) Land Development Department for surveys of Agricultural and Residential holdings.
- (c) Interior Department for surveys of Agricultural Holdings.

77. The list below gives the more important surveys executed during the year:

- (a) Survey of Blocks 30,31,32,33,34 and 35 for the Demerara Bauxite Company, Limited (21,150.05 acres).
- (b) Partition Survey of Bachelor's Adventure, East Coast Demerara (245 acres).
- (c) Partition Survey of Ithaca and Zong-en-Hoop, West Bank, Berbice (750 Acres).
- (d) Partition Survey of No. 51 Village, Courantyne River (500 Acres).
- (e) Partition Survey of Arcadia Village, East Bank Demerara.
- (f) Survey of Lesbeholden Settlement, Black Bush Polder Courantyne (Incomplete).
- (g) Surveys at Vergenoegen and Anna Regina.
- (h) Engineering survey of the proposed Kaieteur Airstrip.

78. During the year, 460 plans prepared by licensed Surveyors were recorded, exclusive of those for issue of leases over Crown and Colony land.

CARTOGRAPHIC SECTION

79. During 1959, ground control for Aerial photography was continued mainly in the North West District as listed below:

- | | | | |
|-------|-----|---|--|
| Astro | 611 | - | Issororo, Left Bank Pomeroon River |
| " | 612 | - | Patuau, Left Bank Pomeroon River |
| " | 613 | | Kamaira, Right Bank Arapiako River |
| " | 603 | | Aruau - Aruka Junction |
| " | 614 | | Imotai River Mouth, Left Bank Waini River |
| " | 615 | - | Calabash Landing, Left Bank Barama River |
| " | 616 | - | Maze Mini Landing, Left Bank Barama River. |

80. The Admiralty Survey Ship "Vidal" arrived here during November for a tour of duty in our coastal waters and officers of this section undertook the co-ordination of twenty beacons between Georgetown and

Port Wellington to provide the necessary control; the actual construction of the beacons being done by the Public Works Department.

81. Consequently, no new areas were mapped but the 1.25,000 sheets of the Rupununi North Savannahs and the Upper Demerara/Essequibo area were reduced to half scale and composite plans produced.

82. The final fair drawings of large scale sheets of New Amsterdam and its environs were received from Hunting Aerosurveys Limited.

83. The Ammonia Printer continued to give satisfactory service throughout the year and a total of 4800 prints of various sizes valued at \$5,200.00 were produced

84. Fairey Air Survey Company returned under contract during the latter part of the year and despite unfavourable weather conditions, were able to photograph approximately 5400 square miles mostly in the Upper Mazaruni and Cuyuni Rivers. The employment of four interior weather-reporting stations has justified the expenditure incurred and should be persevered with in future contracts.

S T A F F

85. The Deputy Commissioner of Lands and Mines left the Colony on vacation leave on 8th December, 1958 and resumed duties on 13th May, 1959. The consequential acting appointments were as follows:-

Mr. J.L. Yhap	Superintendent of Surveys, to act as Deputy Commissioner <u>vice</u> Mr. A. Lee-Own.
Mr. J.A. Sweetnam	Cartographer, to act as Superintendent of Surveys <u>vice</u> Mr. J.L. Yhap.

The following were the other acting appointments:-

Mr. R. Jagernauth	Senior Surveyor, to act as Superintendent of Lands <u>vice</u> Mr. J.B. Davis on vacation leave.
Mr. G.G. Greenidge	- Surveyor, to act as Senior Surveyor <u>vice</u> Mr. R. Jagernauth.
Mr. B.A. Bannister	Surveyor, to act as Senior Surveyor <u>vice</u> Mr. H.A. Howard, on vacation leave.
Mr. R. Dinally	Surveyor, to act as Senior Surveyor <u>vice</u> Mr. C.S. Spence, on pre-retirement leave.
Mr. A.I. Kranenburg	Class I Clerk, to act as Senior Accounting Officer <u>vice</u> Mr. M.M. Dial, on secondment.
Mr. L.O. Kailan	- Class I Clerk, to act as Mining Claims Officer <u>vice</u> Mr. J.A. Leila, Acting Administrative Assistant, Central Secretariat (Departmental Secretariats) Communications and Works.
Mr. E.N. Singh	- Class I Clerk, to act as Senior Lands Officer <u>vice</u> Mr. C.C. Cumberbatch, on Study Leave.
Miss E.I. Ellis	Senior Clerical Assistant, to act as Secretary <u>vice</u> Miss E.I. Spencer, on secondment to Geological Survey Department.

86. Additions to the Staff were as follows:-

Senior Accounting Officer	-	Mr. L.A. Barrow (Acting)
Surveyor Apprentice	-	Mr. C.V. Collymore
Class II Clerks	-	Messrs H. Rajkumar, H. Gangaram, G.O. Daniels and H. Dhanna.
Clerical Assistants	-	Misses L.A. Holder and K.K. Ally
Engineer	-	F. Simon
Boathand	-	J. Sebastian

The reductions in the staff were as follows:-

Mr. C.S. Spence, Senior Surveyor	..	Retired
Mr. R. Warren, Surveyor	..	Resigned
Mr. N. Wintz, Surveyor Apprentice	..	Resigned
Mr. E.M. Agostini, Class II Clerk	..	Transferred
Mr. R.E. Philadelphia, Class II Clerk	..	Transferred
Mr. L.A. Gopie, Surveyor Apprentice	..	Transferred
Miss Y. Mayers, Clerical Assistant	..	Transferred
Mr. E. Forbes, Engineer	..	Dismissed
Mr. H.T. Daniels, Boathand	..	Resigned.

87. Sick Leave: The total number of days off duty on account of ill health (as apart from vacation and casual leave) was as follows:-

Clerical Staff	..	..	340½ days
Technical Staff	..	..	134½ days
Total	..	..	<u>525 days</u>

an increase of 6½ days as compared with last year.

88. Vacation Leave: Below is appended a list of the officers who were on vacation leave during the year:

<u>Name of Officer</u>	<u>Post</u>	<u>From</u>	<u>To</u>	<u>Total No. of Months</u>
A. Lee-Own	Deputy Commissioner	1. 1.59	12. 5.59	4 months
C.C. Cumberbatch	Senior Lands Officer (On study Leave)	1. 1.59	11. 8.59	11 months
R.L. Dewar	Senior Surveyor	20. 1.59	19. 7.59	6 months
E. Martin	Messenger	15. 1.59	8. 4.59	84 days

<u>Name of Officer</u>	<u>Post</u>	<u>From</u>	<u>To</u>	<u>Total No. of months.</u>
N. Wintz	Surveyor Apprentice	20. 1.59	19. 7.59	6 months
G.G. Greenidge	Surveyor	2. 2.59	2. 8.59	6 months
E.G. Hopkinson	Surveyor	8. 2.59	7. 8.59	6 months
H. Mahon	Messenger	9. 4.59	1. 7.59	84 days
N.D. Ford	Surveyor	1. 5.59	31.10.59	6 months
C.A. Cole	Member, Working Party.	15. 5.59	20.10.59	120 days
J.L. Yhap	Superintendent of Surveys	18. 5.59	31.12.59	6 months plus 93 days deferred leave.
H.A. Howard	Senior Surveyor	22. 5.59	21.11.59	6 months
A. Rogers	Engineer	1. 6.59	30.11.59	6 months
V.M. Rhodius(Miss)	Drawing Office Assistant	24. 6.59	23.12.59	6 months
J.E. Davis	Superintendent of Lands	1. 7.59	31.12.59	6 months
J. Fredericks	Boathand	1. 7.59	22.9 .59	84 days
F.O. Pollard	Surveyor	2. 7.59	31.12.59	6 months
H.E. Murray	Boathand	27. 7.59	18.10.59	84 days
L.V. Cumberbatch(Miss)	Clerical Assistant	7. 8.59	31.12.59	6 months
P.S. Chan	Surveyor	27. 9.59	31.12.59	6 months
A.I. Kranenburg	Class I Clerk	1.10.59	31.12.59	6 months
F.H. Yhap	Surveyor	16.10.59	31.12.59	6 months

S T A F F as at 31st December, 1959.

Commissioner	• •	Mr. T.C. Stibbs
Deputy Commissioner		" A. Lee-Own
Superintendent of Surveys		" J.L. Yhap
Cartographer		" J.A. Sweetnam
Superintendent of Lands		" J.E. Davis
Inspector of Mines		" C.S. Cole
Senior Accounting Officer		" L.A. Barrow (Acting)
Mining Claims Officer		" J.R. A. Leila
Senior Lands Officer		" C.C. Cumberbatch
Secretaries (2)	• •	Miss V.M. Shaw
		" H.I. Spencer

Senior Clerical Assistant (1)	. . Miss L.I. Ellis
Clerical Assistants (8)	. . Miss M.O. Burrowes " L.V. Cumberbatch " G.R. Gibbs " R. Burch-Smith " E. Beharry- Singh " J. Jordan " L.A. Holder " K.K. Ally
Senior Drawing Office Assistant (1)	. . Miss S. Fernandes
Drawing Office Assistants (3)	. . Miss R. Forte " V.M. Rhodius " F. Small
Class I Clerks (4)	Mr. A.I. Kranenburg " L.O. Kailan " E.N. Singh " W.C. Nichols
Class II Clerks (14)	Mr. D.A. Fraser " R.J. Dasrath " D.M. Benn " M.A. Cole " J.K. Sagar " B.R. Persaud " R. Stewart " P.A. Albert " I. Matthews " G.S. Hinds " H. Gangaram " H. Rajkumar " G.O. Daniels " H. Dhanna
Senior Surveyors (6)	Mr. C.S. Mc Lean " R. Jagernauth " R.L. Dewar " D.M. Edghill " H.A. Howard One Vacancy
Sub-Wardens (3)	Mr. M.J. Greaves " T.A. Graham " M.E. Lee
Land Officers (3)	Mr. R.B. Ying " I.S. Savory " G.B. Matthews
Surveyors and Surveyor Apprentices (32)	Mr. G.G. Greenidge " B.A. Bannister " F.O.H.R. Pollard " R. Dinally " O. Fung-On " N.D. Ford " R.E. Manson-Hing " B.G. Hopkinson " L.G. Small " D.M. Christian " M.A. Phang " P.S. Chan " A.G. Robella

Surveyors and Surveyor Apprentices (cont'd)	. .	Mr. G.M.F. Rayman " F. Yhap " L.A. Deane " T. Shivkumar " P.A. Woolford " W.E.A. Rhodius " C.V. Collymore " W.A. Swain " M.A. Boodram
		Ten Vacancies
Messengers (3)		F. Browne E. Grant E. Martin
Captains (4)		A. Moseley C. Roland C. Colinet G. Phang
Engineers (3)		A. Rogers (Grade I) G. Shako P. Simon
Boathands (10)		J. Fredericks T. Gibson H. Hernandez E. Johnson R. Justice E. Murray E. Cadogan W. Jordan T. Seaubalak F. Sebastian

Ad Hoc Working Party Section

Chairman	. .	.G.F. Messervy
Member		" C.A. Cole
Typist		Miss L. Dillon
Messenger	. .	. . H. Mahon

89. I have to record my appreciation of the co-operation and loyalty of the staff, who, despite the changes recorded in this report, maintained the existing services of the department at a satisfactory level throughout.

I have the honour to be,
Sir,
Your obedient servant,



Commissioner of Lands and Mines