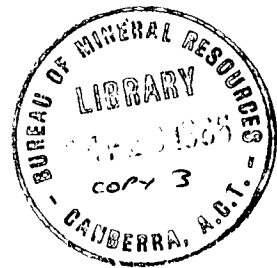


1965/253
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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS

RECORDS:

1965/253



ANNUAL REPORT - RESIDENT GEOLOGICAL SECTION, N.T.
1/7/64 - 30/6/65.

by

R.G. Dodson

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

ANNUAL REPORT
RESIDENT GEOLOGICAL SECTION
NORTHERN TERRITORY

1st JULY, 1964 - 30th JUNE, 1965

by

R. G. Dodson

Records 1965/253

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SUMMARY

Water Supply Investigations

Water supply investigations made up a large proportion of work done by the Resident Geological Section during the year. A total of 109 water bore sites were selected, the bulk of this work being done at the request of the Water Resources Branch. Investigations into town water supplies were made in the Alice Springs, Tennant Creek and Darwin areas, and included the assessment and examination of known and potential sources of water supplies.

Mines and Mineral Deposits

Development and exploration work continued at important deposits such as Gove and Groote Eylandt. Interest was also directed at known mineral occurrences such as iron ore at Mt. Bunday and François Creek, and copper and gold in the Tennant Creek and Pine Creek areas. Several new and, as yet, unproved finds of mineralization have been recorded in the Territory.

Investigations of non-metallic minerals included further exploration of brick making and ceramic quality clays.

Phosphate pebbles found in offshore laterites near Lee Point, Darwin, were found to contain fossils of Cretaceous Age. A systematic search of Cretaceous sediments is being undertaken.

During the year, technical assistance was given to Government Departments, Companies and members of the public.

RESIDENT GEOLOGICAL SECTION, NORTHERN TERRITORY

ANNUAL REPORT 1964 - 1965

The Resident Geological Section consists of officers of the Bureau of Mineral Resources seconded to the Northern Territory Administration in order to supply geological advice and services to Government Departments, the mining industry and the general public. Offices are maintained at Darwin, Alice Springs and Tennant Creek.

WATER SUPPLY INVESTIGATIONS

Water supply investigations make up a large proportion of work done by the Resident Geological Section. During the past year there has been a slight decrease in the amount of work connected with the establishment of sources of water supply for Darwin township, possibly due to the success of drilling by staff of the Water Resources Branch at McMinn's Lagoon.

The bulk of the water supply investigations were undertaken at the request of Water Resources Branch.

SELECTION OF BORE SITES

A total of 109 bore sites was elected. The majority of these were covered by reports under the Water Supply Development Ordinance. Recommendations against drilling were prepared for three additional areas.

Killarney	5	Lilla Creek	8
Fitzroy	2	Farm Area	1
Bullo River	2	Mt. Doreen	8
Rosewood	4	Talhallah Downs	3
Camfield	2	Curtain Springs	2
Mountain Valley	2	Angas Downs	1
Humbert River	2	Mt. Skinner	1
Walleroo	4	Ooratippra	1
Jervois	8	Ambalindum	3
Victory Downs	4	Todd River	1
Argadargada	7	Maryvale	2
Mt. Riddock	3	Ayers Rock	2
Orange Creek	3	Aileron	1
Tarlton	2	Mt. Ebenezer	2
Neutral Junction	3	Owen Springs	1
Tennant Creek Station	2	Horseshoe Bend	3
Ringwood	3	Bushy Park	1
Lacy Creek	2	Idracowra	1
Anitowa	1	Willowra	3
Loves Creek	1	Barrow Creek Hotel	0
Henbury	1	Threeways Motel	0
Indiana	1	Glen Helen Lodge	0

Samples were logged from 247 bores. Information obtained from the bore hole cuttings is made available to the Bureau of Mineral Resources, Canberra, and the Water Resources Branch, Darwin.

Locations of bores (where accurately known), are being plotted on 1 inch to 4 mile scale photo mosaic overlays. A report giving location (where known), name and reference number of all bores in the Western half of Central Australia was almost complete at the end of the year. Compilation and plotting of data for the Eastern half is about two thirds complete. Grid reference points on the Australia National Grid have been measured for all plotted bores on eleven of the 4 - mile sheet areas.

TOWN SUPPLY INVESTIGATIONS

ALICE SPRINGS

Alice Springs Town Basin

Routine weekly conductivity measurements were continued during the early part of the year. These were reduced to monthly measurements at the request of Department of Works, when pumping from the Town Basin ceased at the end of the summer. Pumps now have to be turned on especially in order to get a water sample.

Mereenie Sandstone

A report was prepared giving recommendations for sites for two additional production holes, P5 and P6. An analysis of groundwater salinity data which was carried out for the purpose of this report indicated that production from P1, P2 and P4 (the three equipped bores) draws from Temple Bar Creek recharge water. This water has 300-400 parts per million (ppm) of total dissolved salts (tds) with a low sulphate level. There is a salinity boundary just east of P4 (which is the eastern-most production bore) between the Temple Bar Creek recharge water and the Todd River recharge water (600-800ppm). The Todd River water enters the Mereenie Sandstone either mixed with water from Tertiary aquifers, or via Tertiary aquifers. During this movement it picks up sulphate introduced into the Tertiary from the Bitter Springs Limestone aquifers. It is therefore likely that there will be an increase of salinity in water pumped from the Mereenie bores, commencing at P4. Weekly conductivity measurements are being carried out on water samples from the pumping bores so that any change in salinity can be detected. Variation to date has been negligible.

A further analysis of information from existing holes was made to examine an hypothesis that aquifers are associated with a white sandstone within the Mereenie Sandstone. The top of this sandstone appears to consist of a series of ridges and valleys which trend north-east, with a relief of about 400 feet. The trend of these ridges is parallel to distortions in the non-pumping piezometric surface.

Sites for P5 and P6 were recommended on the basis of these studies.

The second stage of the Mereenie drilling investigation was completed by Water Resources Branch. Twenty eight holes were drilled with a total footage of 12,060 feet. Samples collected from 10 ft. intervals from these holes have been examined. Six holes failed to penetrate the base of the Tertiary, nine holes were terminated in the Mereenie Sandstone, eleven holes were terminated in the Pertnjarra Formation and two holes penetrated Pacoota Sandstone. Geological assistance was provided in designing the drilling programme.

The programme enabled a fairly close delineation of the subsurface extent of the Mereenie Sandstone in its south-easterly extension from the production bore area. The eastern-most holes indicated that a large fault trending north-north-east cuts off the Mereenie Sandstone. The eastern block was displaced northwards and perhaps downwards. The displacement is of the order of two thousand feet. The northward displacement of the Mereenie Sandstone by this fault has caused the subsurface extension of the formation to be located near the bottom of the pre-Tertiary valley (ancestral Todd Valley). It is therefore buried beneath 1,000 feet or more of Tertiary sediments in the extreme eastern part of 'the Outer Farm Area'. The attempt to locate shallow Mereenie aquifers in the area of shallow piezometric surface in the Todd River floodout area was therefore unsuccessful.

Maps showing the pre-Tertiary geology and contours of the pre-Tertiary surface have been prepared. A full report on this investigation has not yet been written.

TENNANT CREEK

A report was prepared at the request of Water Resources Branch dealing with areas which offer some prospects for development of groundwater supplies suitable for town supply purposes within a radius of 20 miles of Tennant Creek township. Several areas are possible sources of water supply, but the most promising was thought to be north-west of Kelly Well, about 5 miles from the end of the existing Cabbage Gum Basin pipeline. This area was recommended as the first priority and a line of 9 investigation holes at $\frac{1}{2}$ mile intervals was suggested. These holes, with three additional holes drilled subsequently, have demonstrated that significant supplies of water can be obtained from superficial sediments in the area at shallow depths. A full report on this drilling has been delayed until surface levels are available. The standing water level is between 40 and 50 feet, and aquifers occur mainly above a depth of 100 feet, although in one case - water was struck at 130 feet below the surface. The superficial sediments are underlain by rocks of the Warramunga Group. The quality of the water from the sediments is mostly good (700-800 ppm soluble matter), although some of the shallowest water is rather saline (up to 2,000 ppm). The flouride content ranges between 1 and 2 ppm and some of the waters are, therefore, unsuitable for human consumption.

Further drilling is needed to assess the potential for development of production bores in this area, and to establish the shape of the piezometric surface, and the distribution of the aquifers.

DARWIN AREA

Investigations of water supplies in the Darwin area were continued at Berry Springs and McMinn's Lagoon.

Berry Springs

Work at Berry Springs has included both auger and diamond drilling. Two auger holes were put down north of a postulated fault line at the springs to depths of 45 feet and 50 feet respectively, and a diamond drill hole planned to intersect the fault was completed at a depth of 155 feet. However, as core recovery was poor, it was not possible to determine whether the contact between massive limestone and siltstone in the hole is a fault or a normal lithological boundary.

Levels were run to bores and drill holes in the area, and observed groundwater levels were reduced to town datum. The results indicated that construction of the proposed pondage dam on the Darwin River would not increase flow of water at Berry Springs by a reversal of groundwater movement. Work at Berry Springs was co-ordinated with a geophysical survey made by staff of the Geophysical Section of the Bureau of Mineral Resources and work done by staff of the Water Resources Branch.

McMinn's Lagoon

During the year, drilling by Water Resources Branch continued. Drill hole cuttings were logged and a report compiling geological information obtained from the bore holes was prepared. The drilling has confirmed the existence of dolomite aquifers over an area of approximately 3 miles N-S by 1 mile E-W within the Golden Dyke Formation rocks, which are overlain by flat lying sediments of Cretaceous Age.

KULGERA

Water Resources Branch drilled 18 holes totalling about 1,100 feet, of which about half were drilled in areas recommended by this office. In the area recommended for investigation south-east of the police station, one hole produced about 500 gph from a shear zone in weathered granite. The water is not highly saline (1,500 ppm) but is unsuitable for human consumption due to excess flouride content (3ppm). One hole was drilled in the area recommended north of Kangaroo Bore, but was terminated at 200 feet before reaching either the base of the sedimentary sequence or the piezometric

surface. None of the other holes produced any water.

Lack of time has prevented a report being prepared on this investigation. Further drilling along the shear zone in the granite appears to be warranted.

DAM SITE INVESTIGATIONS

Todd River

A geological investigation of a dam site on the Todd River was carried out at the request of Water Resources Branch. A map of the storage, based largely on air photo interpretation, and a plane table map of the main wall area have been prepared. No serious difficulty is anticipated in constructing a dam wall about 45 feet high, as the area is underlain by granitic gneiss. The surface weathering appears to be shallow and largely mechanical, rather than chemical, in origin. Logging of diamond drill holes sited by the District Engineer and drilled by Water Resources Branch was in progress at the end of the year. A report is in preparation.

Adelaide River

During the early part of 1965, discussions were held with the Director of Water Resources Branch regarding the requirements of a detailed geological investigation of a possible damsite on the Adelaide River. Arrangements were made for the survey to be made by Dr. E. K. Carter, Bureau of Mineral Resources, with assistance from a geologist of the Resident Geological Section. The survey was originally scheduled for May, but was unavoidably postponed to a later date.

OTHER INVESTIGATIONS

Willowra

Twenty nine holes totalling 2,736 feet were drilled by Water Resources Branch in order to locate suitable sites for three production bores, each of which produces about 10,000 gph from Tertiary sandy aquifers. A geological report on a previous drilling programme at Willowra had recommended a small amount of further drilling in a restricted area in order to locate the best site for production holes. Individual sites for this final drilling programme were selected by Water Resources Branch personnel.

A final report on these drilling operations has not yet been prepared due to pressure of other work.

Dulcie Sandstone

A report was prepared on the groundwater potential of the Dulcie Sandstone, which forms a large shallow syncline in the Georgina Basin, and which is correlated with the Mereenie Sandstone. The hydrological information available, however sparse, suggests that large yields of good quality groundwater will be available from relatively shallow depths in an area where the piezometric surface is considerably less than 100 feet.

Simpson Desert Area

Intermittent work was carried out in compilation and assessment of the large amount of information coming to hand from water well drilling and petroleum exploration in this area. Identification of microfossils of Lower Permian age from water bore samples at several localities has added considerably to the knowledge of the distribution of Permian rocks in the area. Sufficient information is now available to warrant the preparation of a regional geological and hydrological report when time permits.

General

A compilation was made of data from bore sites along the Murrarji track. A brief report was written on the alkalinity of groundwater associated with the Antrim Plateau volcanics.

A bore hole site was chosen to provide a water supply for the proposed Frances Creek mining township.

MINES AND MINERAL DEPOSITS

Prospecting activity increased throughout the Northern Territory during the year. Several previously known mineral occurrences have been investigated in detail and some new mineral finds have been made. Further development took place at the iron ore deposits of Frances Creek and Mount Bundey. At Tennant Creek, work consisted of further exploration of known mineralization and search for new mineral deposits.

IRON ORE

Pritchard's Lode, Mount Bundey

An aeromagnetic survey of the Mt. Bundey area was undertaken by a Bureau of Mineral Resources geophysical party in late 1964. Traverses were flown by a Cessna aircraft at one tenth of a mile spacings. The survey generally confirmed the magnetic pattern derived from a ground magnetic survey. A minor anomaly established at Goose Creek about $2\frac{1}{2}$ miles south of Pritchard's Lode is considered worthy of investigation.

Frances Creek

Six diamond drill holes, totalling 849 feet, were put down on the Helene lease by the Mines Branch, N.T. Administration, for MacDonald Construction Company of Sydney. The drill holes were planned to define the extent and thickness of the hematite ore bodies.

Other Areas

Discussions took place regarding a proposal for Mines Branch, N.T. Administration, to put down three shallow diamond drill holes on the Beetsons iron ore deposits under an agreement with the lease holders, Nevsum Mining Company.

Minor iron ore prospects in the Darwin River area were inspected and briefly described.

MANGANESE

Several samples of manganese from the Pine Creek area were identified for a prospector. As the manganese was found to be of low grade, no further work was carried out at this previously unreported occurrence.

TIN

Minor surveys were carried out on tin occurrences at Jessop's Mine and Spring Hill in the Mt. Wells area, and at Emerald Hill near Pine Creek. Examinations of the Crest of the Wave Mine, 25 miles east of Pine Creek, and of the Collie Tinfield, were made and briefly described. Although no new tin bearing lodes were discovered, the Emerald Hill area is considered worthy of further exploration.

COPPER AND GOLD

Tennant Creek Field

Detailed geological mapping and geochemical surveys were

continued at selected localities in the Tennant Creek area. Diamond drilling by Mines Branch, N.T. Administration, was supervised by officers of the Resident Geological Section. During the year, close liaison was maintained with technical staff of Peko Mines Limited and Australian Development, N.L.

Lone Star diamond drill hole No. 4 was drilled to 656 feet under an agreement between the lease-holder and the Mines Branch, N.T. Administration. Although copper sulphide minerals were encountered in ironstone below 464 feet, no copper or gold assays of economic value were obtained. Further exploration of the prospect is not warranted at present.

Mary Lane Area 'B' diamond drill hole No. 2 was terminated at 615 feet after having failed to intersect mineralized rock. Further exploration on the lease is not warranted.

Peter Pan Mine. The underground workings where the lease-holder recently won 89 oz. 19 dwts. of gold from 32.2 tons of ore, were inspected and mapped. A winze and cross-cut below these workings indicated the ore-shoot cut out above the cross-cut, and there seems little chance of a repetition of the ore-shoot.

Spectrographic analyses of samples from 44 auger drill holes drilled by the Bureau of Mineral Resources, indicated a copper anomaly which is considered worthy of investigation.

Red Bluff. Geochemical sampling of an area situated about one mile west of the Red Bluff trigonometrical station indicated a copper anomaly approximately co-incident with a small magnetic anomaly and which might warrant follow-up work. The lease is held by Australian Development, N.L.

Explorer 17. Follow-up geochemical sampling and geological mapping was carried out and diamond drill hole No. 1, which was drilled to a geochemical target, intersected sub-economic chalcopryrite between 444 feet and 507 feet. Further diamond drilling will be carried out by Geopeko Limited. The prospect is situated about $\frac{3}{4}$ mile east-south-east of the Ivanhoe Mine.

Explorer 13. Follow-up geochemical sampling was carried out and a strong copper/zinc anomaly was delineated, partly co-incident with a strong magnetic anomaly. Geopeko has programmed the geochemical anomaly for diamond drilling.

The prospect is situated $\frac{1}{2}$ mile west of the Ivanhoe Mine.

Shamrock. A re-appraisal of geochemical wagon drilling results indicates that up to five further wagon drill holes should be drilled before the prospect is abandoned. The lease-holder, Australian Development N.L., proposes carrying out this work in the near future.

Queen of Sheba. Geophysical, geochemical and geological reports on the mine were examined, but further work is not warranted at present.

Explorer 27. Diamond drill hole No. 1, designed to explore below a gossan with anomalous copper and molybdenum trace element concentrations, was terminated at 601 feet. A few stringers of quartz, feldspar and chlorite, carrying chalcopryrite, pyrite and molybdenite in above average quantity, were intersected. Further drilling of the prospect is warranted as it seems probable that insufficient primary zone sulphides were intersected to account for the size and type of gossan. It is believed that this is the first discovery of molybdenite on the field. The mode of mineralization is quite unlike that of other sulphide lodes near Tennant Creek and its location 3 miles N.W. of the Last Hope Mine suggests that might be in the Ashburton Sandstone.

Davenport Ranges and Hatches Creek

A report was compiled on the gold discovery at G.M.L. 27F, The Great Davenport, made early in 1964. The results of exploration work were discouraging and activity on the lease stopped.

Recent discoveries of copper and lead minerals in vesicular andesitic volcanics were examined in the Whistleduck Creek and Kurundi Homestead areas. A diamond drill hole was drilled to 450 feet on Rainbow Reef No. 4 in the Whistleduck Creek area to obtain geological information. The significance of these discoveries has not been evaluated and further prospecting is warranted.

Katherine-Darwin Area

Kohinoor and Eleanor Leases, Pine Creek. Four diamond drill holes totalling 1,593 feet were put down by the Mines Branch, N.T. Administration, to establish the extent and structure of gold bearing lodes in the Kohinoor and Eleanor mining leases. Assay results received were not considered sufficiently high to encourage further exploration.

Enterprise Mine, Pine Creek. Assay results from the core of drill hole 1964/2 proved to be disappointingly low, indicating that the high grade ore intersected in the 1964/1 drill hole does not persist. No further work has been done in the area.

Bridge Creek Gold Mine. Advice was given on the positioning of an exploratory costean and sampling methods to be used on numerous quartz veins near the Bridge Creek gold mine.

Daly River Copper Mine. At the request of the Senior Resident Geologist, an electro magnetic survey of the Daly River copper mine was made by staff of the Geophysical Section, Bureau of Mineral Resources, but the results were inconclusive. A brief report on the geology of the former mine was written, and a detailed geological assessment of the copper occurrence will be made in the near future.

Darwin River. Two diamond drill holes were completed to depths of 75 feet and 260 feet respectively. Following the identification of sulphide minerals in core from earlier drill holes, sections of the core were assayed for copper and gold. Assay results have proved disappointingly low, and exploration in the area has been abandoned.

Black Jungle Area. A limited geochemical survey of parts of the Black Jungle area was carried out to try to establish the extent and significance of known sulphide mineralization at Mundogie Hill. Spectrographic results of weathered rock samples indicate anomalous trace element occurrences at Mundogie Hill, and more detailed geological survey of the area appears to be warranted.

Central Australia.

Mt. Skinner. This occurrence was brought to the attention of Resident Geological Staff, Alice Springs, by two different local prospectors. It is located about 150 miles north-east of Alice Springs, within the Upper Proterozoic Mt. Stuart Beds. Secondary copper carbonate minerals and chalcocite occur in grey siltstone beds or lenses, five feet or more thick, within a sequence composed mainly of red-brown sandstone. The area is now under option to Kennecott Explorations (Australia) Pty. Ltd., who also hold Authority to Prospect over a large area of exposed Upper Proterozoic sediments on the south-western flank of the Georgina Basin.

Yuendumu. About 4 miles south of the settlement, copper occurs as malachite, chalcocite and native copper in the limestone of the middle and lower part of Unit C in the ? Upper Proterozoic sequence described by Cook (1963, the Geology of the Yuendumu Native Reserve, Bur. Min. Resour. Aust., Records 1963/37, unpublished.) Malachite also occurs in a shale sequence within Unit D. Some galena also occurs in irregular lenses of barytes, 3 to 4 feet wide, in limestone in the upper part of Unit C. The occurrences, and a belt of outcrop along strike, are held by the Native Council at Yuendumu, and an option agreement has been signed with Australian Geophysical Pty. Limited, who expect to commence detailed examination of the prospect soon.

Limbla Springs. Five miles south-south-east of the homestead, malachite and azurite occur as scattered small veins and incrustations over a small area in dolomite. The occurrence is either near the top of the Bitter Springs Formation or near the base of the overlying Areyonga Formation. No indication of the primary minerals or evidence for vein-type mineralization has been observed at the existing exposure of the mineralization. It is hoped to carry on a geochemical exploration programme in the area.

Other Areas. Samples for geochemical spectrographic analysis were collected from a number of localities and follow-up work was carried out at some of these localities. A Bureau of Mineral Resources Gemco Auger drill was used for a period of about 3 weeks; some samples were obtained, but in most cases the plant was unable to penetrate the full thickness of the overlying transported soil. Spectrographic assay results of the samples collected have not yet been received.

A palaeogeographic study of the Goyder Formation was commenced in an attempt to assess the possibility of finding a commercial deposit of copper within it, similar to, but of better grade, than the occurrence in the Waterhouse Range.

LEAD

Mt. Shoobridge

Technical officers of United Uranium, N.L. were given assistance in the selection of a site for an exploratory diamond drill hole at a lead prospect at Mt. Shoobridge. The hole was drilled by arrangement with the Mines Branch, N.T. Administration, to a depth of 526 feet.

Minglo Lead Prospect

At the request of the leaseholder, a lead prospect at Minglo was inspected and briefly described.

PHOSPHATE

Rum Jungle

The Senior Resident Geologist conducted two senior officials from the Department of Primary Industry on a visit to the phosphate occurrences in the Rum Jungle area. On request, samples of the phosphate were sent to the C.S.I.R.O. laboratories, Katherine.

Lee Point, Darwin

Following the identification of phosphate rock in pebbles from the Lee Point area, the locality was visited and a brief survey made of the phosphate-bearing rock. Samples of the pebbles were sent to the Bureau of Mineral Resources, Canberra, for detailed petrographic and palaeontologic examination. The fossil Radiolaria was identified, indicating that the samples are unlikely to be concretions. Further detailed work is planned for the area, and is to be followed by a programme of stratigraphic drilling.

SEARCH FOR OIL

Close liaison was maintained with company geologists and other technical staff engaged in the search for oil in the Northern Territory. Much stratigraphic and lithological data has been obtained from oil drilling operations. A full account of the progress of the search for oil is given in the Northern Territory Administration Mines Branch Annual Report.

ENGINEERING GEOLOGY

Gove Area, North-east Arnhem Land

A programme of diamond drilling to test foundation conditions for a satellite tracking station was undertaken by Mines Branch, N.T. Administration, under an agreement with the Commonwealth Department of Works and Department of Supply. The project also included the digging of a bulldozed costean by the Department of Works.

The work was described in a report by officers of the Resident Geological Section.

Bridge Sites, Adelaide River

A number of proposed sites over the Adelaide River near Humpty Doo were inspected by a geologist of the Resident Section, in company with technical officers of the Commonwealth Department of Works.

Maude Creek

Two diamond drill holes were put down at Maude Creek in the Katherine area, by the Mines Branch, N.T. Administration, to confirm the availability of volcanic rock suitable for use as concrete aggregate. A brief report on the drilling results was written.

GENERAL

Throughout the year numerous mineral identifications were made for members of the public at the offices maintained by the Resident Geological Section. Advice and technical information was given to prospectors and company officials engaged in mineral exploration and, when possible, research has been carried out on such subjects as geochemical prospecting.

REPORTS

A large number of reports was prepared by officers of the Resident Geological Section during the year.

The most important of these were as follows -

- Diamond Drilling at the Pondage Sites, Darwin River, by J. Barclay.
- Proposed Dam Sites on the Douglas, Cullen & Fergusson Rivers, by J. Barclay.
- Groundwater Propsects - Kulgera Town Water Supply, by D. Woolley.
- Copper Propsect, 10 Miles South of Pine Creek, by P. W. Crohn.
- Clay Deposits at Milner Swamp, Berry Flat and 32-Mile Area, Results of Auger Drilling, by A. Vanderplank.
- Preliminary Investigation of proposed Bridge Sites, Adelaide River, by P. Rix.
- Darwin Water Supply - Berry Springs Diamond Drilling Investigations, by J. Barclay.
- Darwin Water Supply - McMinn's Lagoon Area, Interim Report, by J. Barclay.

Mines Branch Diamond Drilling, Helene No. 7 Lease, Frances Creek, By P.W. Crohn.

Rum Jungle Gold Mine, by P. W. Crohn.

Great Davenport Gold Prospect, Kurundi Goldfield, by S. Yeaman.

Recent Prospecting at Bridge Creek Gold Mine, by J. Barclay.

Foundation Investigations, Eldo Project, Gove Peninsula, N.T., by P. Rix and J. Shields.

Preliminary Report on Prospective Dam Site on Todd River, Alice Springs, by I. G. Faulks.

Selection of Further Production Holes in the Mereenie Sandstone for Alice Springs Town Water Supply, by D. R. Woolley.

Tennant Creek Water Supply; Possible Sources of Additional Groundwater, by I. G. Faulks.

Phosphate Occurrence - Lee Point, Darwin, by P. Rix.

Geochemical Survey of a Portion of the Black Jungle Area (A. Vanderplank) by R. G. Dodson.

Water Bore Locations in Central Australia, Part 1: Western Half, by E. Kingdom & D. Woolley.