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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

1954/66

RADIOACTIVE SURVEYS KATHERINE - DARWIN AREA

REPORT ON ACTIVITIES

of the

DARWIN URANIUM GROUP

November, 1954

by

J.H. Lord

DARWIN, N.T.

RADIOACTIVE SURVEYS KATHERINE - DARWIN AREA

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ADMINISTRATIVE SECTION.

STAFF

Movements:

J.B. Miesz, Geophysicist, departed Darwin on 8th November for discussions in Melbourne.

H. McCulloch, of the A.A.E.C., commenced relieving duties at the Darwin Office on 25th November.

B.C. Thomas, Clerk, commenced Recreation Leave on 30th November.

Additions:

(Miss) I.A.D. Brookman, Clerical Assistant, commenced duty on 5th November.

(Mrs). B.J. Schofield, Shorthand-Typist, commenced duty on 17th November.

Resignations:

T.H. Dickson, Storeman, dismissed with effect from 5th November.

(Mrs). M.J. Olle, typiste, resigned on 5th November.

R.C. Lucas, field assistant, resigned on 13th November.

G.F. Reberger, drill runner, resigned on 13th November.

HOUSING AND OFFICE ACCOMMODATION

The construction of the twelve houses at Fannie Bay continues. Seven houses are roofed and have the outside walls completed, while the remaining five have been commenced.

Some minor work remains to be done at the Darwin Office, by the Department of Works.

WINNELLIE STORE

The Department of Works has nearly completed the installation of water and power in the proposed Chemical Laboratory at Winnellie.

The difficulty experienced by the storeman in producing a list of discrepancies with respect to the return of the equipment from the Regional Party stresses again the necessity of appointing a Stores' Clerk.

RADIOMETRIC LABORATORY

The laboratory carried out 95 radiometric assays during the month.

Forty-two instruments were repaired, of which twenty-one were for private persons.

TRANSPORT.

One mechanic has commenced the overhauling of the vehicles belonging to the Regional Party.

Before a landrover was sent to Alice Springs, it was given a top overhaul and new rings were inserted by the "Regional" mechanic. Apparently the vehicle is considered to be in poor condition by the Resident Geologist at Alice Springs. This may be correct, but the vehicle is better than some remaining in use in the Darwin area.

VISITORS

Mr. F. Frawley, Accountant, returned to Melbourne on 15th November, after investigating the clerical and stores' sections of the Darwin Office.

As requested, Mr. Jesse Johnson and the American Delegation were met at the Airport on 28th November. By invitation the Senior Geologist accompanied the Delegation to inspect Rùm Jungle on 29th November. Mr. Johnson was supplied with information on operations in the Northern Territory.

TECHNICAL SECTION

A.B.C. PROSPECT

One drill operated at this Prospect for the first half of the month, when it was joined by the drill, which had finished at Edith River.

One deep hole is in progress at a site requested by the Chief Geologist. It is intended to drill this hole to the underlying sandstones.

The second drill is engaged on a few short holes at sites on the various minor prospects located in the volcanic valley.

The geological report on the original prospect and a report on the geophysical work done on the Reservation were issued during the month.

The geologists have now completed the investigations of the remainder of the Reservation and a report will be prepared. Nothing to warrant further detailed work has been located.

ADELAIDE RIVER PROSPECT

Diamond drill hole No. 8 was probed for the company during November. It showed a band of radioactivity from 164 feet to 168 feet with a maximum count of 2,000 per minute. This corresponded with lode material showing in the core.

Details of the exact position of the development on this Prospect is given in Appendix 6.

BURRUNDIE PROSPECT

Considerable drilling time was lost on this Prospect due to stuck rods. Eventually these were freed and drilling continued.

Drilling conditions remained poor and the rods are stuck now at a depth of 215 feet.

The target depth of this hole was 188 feet, where it should have entered a zone of mineralisation if it exists.

At 185 feet the drill entered diorite, which contains quartz veins and pyrite in shears and irregular fractures. No counts above background have been observed on the core.

Once the rods are freed it will be necessary to case the hole before probing it.

EDITH RIVER PROSPECT

Work has been completed at this Prospect and the final report is nearly ready.

Difficulty was experienced in probing the drill hole No. F 2 due to soft ground at a depth of 250 feet. The drill was rigged again on the site and the hole cleared, but the probe still failed to go below 250 feet. It was then decided to abandon the attempt. Good core recovery had been made from below 250 feet and the sludge samples were also available to indicate any uranium mineralisation.

GEORGE CREEK PROSPECT

At the beginning of November geological mapping and costeaning of this Prospect were commenced, but they were suspended later, because the geologists were required to work on Prospects which would be inaccessible during the "wet" season. Sufficient work was done to disclose uranium mineralisation in five pits extending for a length of 300 feet, and for a width of 150 feet.

The Prospect shows sufficient promise to warrant drilling during the "wet" season.

The detailed geological work will be completed as soon as a geologist is available.

CORONATION HILL PROSPECT

The bulldozing of three trenches on the site of Coronation Hill commenced at the beginning of the month and was completed on 18th November.

The area concerned was gridded radiometrically before and after the trenching operation.

The party engaged on this section of the work evacuated the area immediately, because of some 15 inches of rain. Owing to the truck breaking down, it was necessary to walk the bulldozer towing the truck to Pine Creek. The party deserved praise for the way in which they did this job, despite adverse weather conditions.

The geological mapping of the area commenced on the 24th November. Previously, a junior geologist had

mapped the area topographically, ready for the addition of the geology. The geological mapping was completed at the end of the month.

Two new areas of radioactivity have been located towards the north-western corner of the reservation. Uranium mineralisation has been uncovered at one of the areas.

A complete report of the work done on the reservation will be forwarded as soon as completed.

SLEISBECK PROSPECT

This Prospect was inspected during the month for the Atomic Energy Commission, and a report is attached as Appendix 5.

A diamond drill hole was probed for the company concerned and the result is shown on Plate 3. Results of probing holes during last month are shown on Plate 2.

MANTON DAM AREA

Mr. J. Barlow has completed the radiometric and self-potential investigations on this area. He has recommended two drilling sites.

One is planned to test the intense self-potential anomaly located in the Rum Jungle shales, and the other to test the Crater Formation.

The bulldozer commenced cutting a track into the area on 29th November. It is hoped to find a track which can be used throughout the "wet" season. It is intended to move a drill from the A.B.C. Prospect to Manton Dam in approximately two weeks.

When a geologist is available, a detailed geological plan of the area will be made.

NEW FINDS

General prospecting activity has decreased during the month, due to the approach of the "wet" season. The South Alligator area had an estimated 15 inches of rain towards the end of the month.

The most notable find during the month was made by Uranium Development and Prospecting N.L., some 4 miles north of the Stag Creek Prospect in the South Alligator. A report on this find is attached as Appendix 1.

All the Prospects, except Mineral Claim 7A, in the South Alligator River area were inspected during the month, and reports are attached as Appendices to this report.

There were 42 Authorities to Prospect held at the end of November with 20 pending.

The following companies are engaged in active development work: - Brocks Creek Uranium Co., North Australian Uranium Corporation (Sleisbeck), United Uranium (Stag Creek), and Uranium Development and Prospecting (Adelaide River). Several other companies and syndicates are costeaning on their areas or are carrying out detailed airborne scintillometer surveys with small aircraft.

MISCELLANEOUS ITEMS

Airborne Scintillometer Anomalies:

No geologist was available to continue on the investigation of air-borne scintillometer anomalies.

Geobotanical Investigations:

The geochemist, Mr. A. Debnam, returned to Canberra at the beginning of the month.

INSPECTION OF A URANIUM FIND
ON AUTHORITY TO PROSPECT NO. 183
SOUTH ALLIGATOR RIVER, N.T.

The position of this find, made by Mr. R. Coxan of Uranium Development and Prospecting N.L., on 1st November, 1954, is shown on the attached sketch (Plate I).

The find is approximately $4\frac{1}{2}$ miles north-west of United Uranium's Stag Creek Prospect and is 13 miles east of Goodparla Homestead.

The find is situated on the steep western slope of a ridge and is approximately 525 feet above the level of the South Alligator River. It is in rocks of the Brocks Creek Group, which strike 300 degrees and dip at 60 degrees to the south-west. The Upper Proterozoic conglomerates and sandstones overlie these rocks unconformably, slightly to the east of the find.

A pothole was put down on the scree-covered slope where counter readings of 2 to 3 times background had been found. Very rich uranium mineralisation was encountered at a depth of one foot. This hole has been turned into a costean and the lode followed for eight feet. This costean runs into the ridge, increasing in depth to six feet at the south-eastern end. The lode which extends over a width of 12 inches appears to pitch at a low angle in the direction of the costean and may be on the crest of a drag fold. The host rock is weathered and hematitised, but is probably silicified limestone breccia. Strike shearing is evident.

The South Alligator type of spectacular secondary mineralisation is evident with such minerals as meta-torbernite, saledoite, autunite and others to be identified. A specimen sample, submitted by Mr. Coxon, was assayed by diluting the sample with non-radioactive sand and it was calculated that the original specimen sample assayed 32.6% U_3O_8 and was in equilibrium. The lode where exposed may assay over 20% U_3O_8 for a width of twelve inches.

The surrounding scree-covered slope does not show any area of radioactivity only several spots of 2 to 3 times background. Detailed radioactive gridding may disclose something to guide future costeaning.

It is considered that when the South Alligator area is investigated in detail, it will be found that this Prospect is on the same line of mineralisation as the other prospects between here and Coronation Hill.

CONCLUSIONS.

This is a small but very rich prospect which requires a considerable amount of costeaning to ascertain if it is of sufficient extent to warrant the construction of access roads, in order to move in equipment to test it at depth.

The find is worthy of a nominal reward.

November, 1954.

J. H. LORD.

INSPECTION OF A URANIUM PROSPECTON MINERAL CLAIM NO. 2A.NEAR SOUTH ALLIGATOR RIVER, N.T.

An inspection was made of Mineral Claim No. 2A for reward purposes because this Prospect was the first located in the South Alligator River area other than Coronation Hill.

The Prospect is situated on the top of a cliff on the north-east side of the South Alligator River some five miles north-west of the B.M.R. Coronation Hill Prospect. It was found by Mr. E. E. Daniels, a prospector working for North Australian Uranium Corporation.

The Prospect is in the lower Proterozoic Brooks Creek Group of rocks, which strike north-westerly and dip at a steep angle to the south-west. The rock containing the mineralisation is a hematized quartz breccia (or silicified limestone breccia) which is sheared and fractured.

The mineralisation occurs in the fractures. An Austronic P.M.R. 200 Counter on multiple 200 is off scale when placed near any of the mineralised fractures. Away from the fractures counts of 1000 to 2000 per minute are obtained. The mineralisation occurs over a length of 100 feet and varies in width up to 30 feet, but the mineralised fractures occur only spasmodically over this area. It is doubtful if the whole area would bulk ore grade, and selective mining would have to be done.

The Prospect is worthy of detailed investigation which will be difficult as it is situated on top of a cliff some 600 feet above the South Alligator River and it is difficult to see how a road can be constructed to the Prospect.

Conclusions:-

This Prospect shows sufficient promise to warrant the payment of a reward.

November, 1954.

J. H. LORD.

INSPECTION OF A URANIUM PROSPECT ON
AUTHORITY TO PROSPECT NO. 175 NEAR STAG CREEK, N.T.

This Prospect (Mineral Claim No. 8A) was located by prospectors of Northern Uranium Development (now United Uranium). It is on the south-west slope of a ridge on the south side of Stag Creek and is 3 miles north-west of the find by Daniels on Mineral Claim 2A, and 8 miles north-west of the Coronation Hill Prospect (see attached plan).

The lode is in the Brocks Creek Group of rocks which have an average strike of 310 degrees and dip at 70 degrees to the south-west. There is a distinct change of strike of the lode from 305 to 315 degrees about 45 feet from the north-west end.

The mineralisation is in hematized quartz breccia (or brecciated silicified limestone), which is intensely sheared and fractured with intrusive quartz veins. It is probably a concentration of secondary minerals on a strike fault, which forms a part of the major South Alligator fault zone.

The mineralisation is the typical spectacular type which has been found along this fault zone and consists of meta-torbernite, saléite, autunite, yellow ochres and other unidentified minerals. The mineralisation can be traced over an approximate length of 20 feet varying from 6 to 10 feet in width. The Austronic PRM 200 Counter is off scale on the multiple 200 scale over most of the lode.

Specimen samples will assay 12 to 20% U_3O_8 , but a chemical assay of a channel sample cut by Mr. F. Jones over a width of eight feet showed 1.6% U_3O_8 . It is considered that the exposed ore would assay over 1% U_3O_8 .

Counts of over 1000 per minute can be obtained for an extension of 30 feet to the north-west and 10 feet to the south-east. The steep slope is covered with scree and soil which may mask the continuation of the lode.

Shallow costeans have been dug to open up the north-western end of the lode. A track, which has been bulldozed from Stag Creek has just been completed. The Prospect is approximately 500 feet above the point where Stag Creek enters the South Alligator Valley. Further costeaning will be done and a shaft sunk now that it is possible to take equipment to this Prospect using 4-wheel drive vehicles.

Conclusion:-

At the surface this is the most promising prospect in the South Alligator area, but the future like that of the other prospects depends on being able to locate primary mineralisation. Otherwise it will yield only a small tonnage of rich secondary ore.

If the location qualifies this prospect to be considered for a reward, a nominal one is deserved.

INSPECTION OF MINERAL CLAIMS NO. 4A, 5A AND 6A,SOUTH ALLIGATOR AREA, NORTHERN TERRITORY.

A brief inspection of these Mineral Claims was made at the request of the Director of Mines for the Warden, because these claims are the subject of a dispute.

The Mineral Claims are situated to the south-east of the junction of Koolpin Creek and the South Alligator River, as shown on the attached sketch.

The rocks which occur in the area belong to the Lower Proterozoic Brocks Creek Group and are overlain unconformably to the east by Upper Proterozoic conglomerates and sandstones. The uranium mineralisation occurs in a hematized quartz breccia (or brecciated silicified limestone) which generally strikes 310 degrees and dips steeply to the south-west in what has been called the South Alligator Fault Zone.

The mineralisation is secondary, and mineral deposition has been controlled by faulting and shearing. No development work has yet been done to ascertain if primary mineralisation exists.

Mineral Claim 4A.

The only uranium mineralisation on this claim occurs in a few large boulders which do not appear to be in situ, but have probably rolled from a steep cliff some 500 feet high to the east. In consequence the boulders probably originated in the adjoining Mineral Claim.

The mineralised boulders give counts of over 10,000 per minute on an Austronic PRM 200 Geiger Counter.

Mineral Claim 5A.

No radioactivity or mineralisation has yet been located in this Mineral Claim. The reason for pegging this Claim was to hold the ground between finds on Claims 4A and 6A in case development work should show that the two finds are joined.

Mineral Claim 6A.

On the northern half of this Claim, two small potholes on the western side of a scree-covered slope have disclosed uranium mineralisation.

The potholes are 40 feet apart. In one pothole counts up to 7000 per minute can be obtained on an Austronic PRM 200 Geiger Counter and autunite can be seen in a weathered highly sheared and hematized silicified siltstone. In the other pothole counts up to 1400 per minute are obtained but no mineral can be identified.

The area surrounding the potholes gives a count of 4 to 6 times background. A small hole dug in the soil and scree showed an increase from a count of 400 per minute at the surface to 1000 per minute at a depth of one foot.

On the southern portion of the Claim there are a few boulders of hematized quartz breccia (or brecciated silicified limestone) with intrusive quartz, showing uranium mineralisation and giving counts up to 4,000 per minute. No work has been done on this prospect and it is difficult to say whether the boulders are in situ, or if they have rolled from the steep cliffs to the east.

CONCLUSIONS.

These three Mineral Claims are worthy of detailed investigation particularly on the northern portion of No. 6A. The boulders showing mineralisation should be investigated to determine whether they are in situ or not. If in situ development should be directed to prove the mineralisation at depth and the extension along the strike. If the boulders are not in situ intensive prospecting of the cliff to the east should locate where the boulders originated.

November, 1954.

J. H. LORD.

REPORT ON A FURTHER INSPECTION OF THE
SLEISBECK URANIUM PROSPECT, N.T.

The Sleisbeck Prospect on Authority to Prospect No. 151 was inspected on 18th November, 1954 to determine if any ore reserves have been or could be blocked out, to warrant an additional reward being paid by the Australian Atomic Energy Commission.

Since the last inspection on 10th September, 1954, (see monthly report of the Darwin Uranium Group for September) efforts have apparently been concentrated on preparing the area for the "wet" season rather than in rapid development work. The airstrip has been gravelled for a length of 1350 yards, and the roads from the camp to the Prospect and airstrip have been formed and gravelled.

The advance of development work at each exposure on the three hills since the last inspection, is as follows:-

WEST (OR NO. 3) HILL.

No. 1 Exposure: No further mining has been done on this exposure. Diamond drilling apparently failed to find anything of interest.

No. 2 Exposure: This is approximately in the centre of the northern side of the hill. A costean 30 feet long and with a maximum depth of 15 feet has been sunk. Some mineralisation has been found but insufficient to classify the broken rock as ore. A diamond drill and a wagon drill are now operating at this exposure.

No. 3 Exposure: This exposure is at the western end of the hill. Preparations are being made to drive an adit into this end of the hill. A cutting 15 feet long and 4 feet wide has been driven. Some uranium mineralisation can be seen in the heatmatised brecciated silicified limestone, but it cannot be classified as ore.

MIDDLE (OR NO. 2) HILL.

No. 4 Exposure: The open-cut on the southern side of this hill has been extended to a length of 300 feet with a maximum height into the hill of 15 feet.

The ore body on the floor of the open-cut extends over a length of 150 feet with a maximum width of 20 feet. This ore body pitches to the west at a low angle. No primary mineralisation can be seen.

Two diamond drills are operating on or near this exposure. One hole has encountered 28 feet of ore at an inclined depth of 35 feet, which averages between 0.4 and 0.5% U_3O_8 , according to the company.

EAST (OR NO. 1) HILL.

Exposure No. 5: Three costeans have been sunk, the largest being 30 feet long and 8 feet deep. Some mineralisation was located near the contact of the brecciated silicified limestone and chloritic schist, but no ore has been located.

CONCLUSION.

As the Company admits, it is not possible yet to establish any ore reserves at Sleisbeck except for the small tonnage which has been stockpiled from the No. 4 exposure.

More drill intersections on the ore body at No. 4 exposure are required before any indicated or measured ore reserves can be blocked out. At other exposures ore bodies are yet to be located.

November, 1954.

J.H.LORD.

REPORT ON AN INSPECTION OF THE
ADELAIDE RIVER URANIUM PROSPECT, N.T.

A further inspection has been made of the Adelaide River Uranium Prospect, to report on the progress of development and to determine if any ore reserves can be blocked out. These facts are required to decide if the payment of a further reward is warranted at this stage.

The policy of the company, which has been directed by Mr. R. Sprigg, Consulting Geologist, has been to test any showing of uranium with a shaft and in some cases with diamond drill holes. As a result development including seven shafts, two adits and some driving and cross-cutting totalling 1,000 feet has been carried out. Over 1,700 feet of diamond drilling has been done.

Some development work in certain sections has been abandoned, temporarily, when results have not been promising, because of the option time limitation, which makes it essential to find ore quickly.

As the general geology has been explained in previous reports on the Prospect only a summary of development work will be given. ~~A print of the geological map prepared by Geosurveys (Mr. R. Sprigg) which is attached, shows the geology and location of the various workings.~~

Western Lode.

Shaft No. 1 has been sunk to a depth of 112 feet and a drive to the south at a depth of 76 feet has been extended 101 feet to Shaft No. 2.

Shaft No. 2 was sunk on an underlay of 70 degrees to the east, on the original find of uranium mineralisation. At a depth of 57 feet it connected with the 76 foot level from Shaft No. 1.

Stoping has been carried out above the 76 foot level. This is the source of the 421 tons of uranium ore delivered to Rum Jungle. This ore, according to grab samples assayed by the B.M.R. should average between 0.5 and 0.8% U_3O_8 .

Work on extracting ore from this locality has been suspended temporarily. There is ore in the floor of the drive over a length of forty-five feet. Assuming that the ore will extend down the shoot another 15 feet, together with that remaining above, there should be at least 400 tons of similar grade ore awaiting extraction.

Shaft No. 5 is being sunk approximately 310 feet south of Shaft No. 2. A cross cut west at the 110 foot level intersected a shear-zone 46 feet from the shaft, where ore was located in Diamond Drill Hole No. 4. The probing of this hole by the B.M.R. showed a radioactive zone of 12 feet at a depth of 114 feet, with a maximum count of 10,500 per minute over 2 feet.

A drive has been extended for eleven feet northwards and another for six feet southwards along the shear zone, which is approximately four feet wide and dips at 60 degrees to the

east. The shear-zone is mineralised with chalcopyrite, arsenopyrite and some pitchblende, while secondary minerals occur. Torbernite appears to have leached into the siltstones, forming the footwall. Apparently this intersection is in the zone of change from secondary to primary mineralisation. This may mean that this particular zone is impoverished. It appears as if the shear-zone may average 0.25% U_3O_8 over a width of 3 to 4 feet at this intersection.

Work is now concentrated on sinking this shaft to 220 feet, where it is intended to cross-cut to the shear-zone and drive 100 feet south to the rich intersection of uranium mineralisation encountered in Diamond Drill Hole No. 5. Probing disclosed a strong radioactive zone between 198 and 205 feet with the instrument off scale (above 20,000 counts per minute) between 199½ and 202 feet.

This company's plan of concentrating on exploration of the primary zone is to be commended, because, if this prospect is to have an extended life, it will be in this zone.

Eastern Lode.

Work has been suspended on this lode, because, as the grade was variable, it did not bulk high enough to be classified as ore. The mineralisation, although irregular, was secondary throughout. The lode will be worthy of further exploration, when the behaviour and true value of the primary one is known.

On this lode Adit No. 1 was driven for 128 feet, Shaft No. 4 was sunk 112 feet on an underlay of 75 degrees to the west and Shaft No. 3 was sunk to 17 feet.

Other Lodes.

Adit No. 2 was made into a hill approximately 95 feet south-east of the original find (Shaft No. 2), where surface mineralisation was located. After cross-cutting for 100 feet, a narrow mineralised shear was encountered and driven on for 15 feet to the south-west and six feet to the north-west. Work has stopped because of the narrow nature of the shear, which assayed 0.3% $e U_3O_8$ over 12 inches.

Shaft No. 6, situated some 1230 feet south-east of the original find (Shaft No. 2) is still in progress. This shaft is being sunk on a shear, showing copper and weak uranium mineralisation. A cross-cut at a depth of 30 feet for a distance of 20 feet showed small irregular patches of high-grade secondary uranium mineralisation. The shaft has reached water level at 78 feet and chalcopyrite is present. Although radioactivity is very weak, it is thought to be increasing with depth.

Shaft No. 7 was sunk to a depth of 31 feet, on a surface occurrence of radioactivity situated some 1120 feet north of the original find (Shaft No. 2). Nothing of interest was encountered but Diamond Drill Hole No. 8 has encountered lode material over a width of seven feet at a depth of 161 feet, which is thought to contain some pitchblende. Probing gave a maximum count of 2,000 per minute.

CONCLUSION.

This Prospect has delivered 421 tons of ore, which should assay between 0.5 and 0.8% U_3O_8 , to Rum Jungle and it has an unbroken ore reserve of 400 tons of similar grade.

There may be other small pockets of secondary mineralisation suitable for extraction, but the future of the Prospect depends on the grade and extent of the primary ore body, which is now being developed.

25th November, 1954.

J.H.LORD.

PRELIMINARY REPORT ON ANOMALY REPORTED BY K. SMITH
WHILST DOING REGIONAL MAPPING.

Military Sheet: BURNSIDE

Location Indicated from Airborne Work (Co-ords): CLOSEST AIRBORNE
ANOMALY IS 085934

Corrected Location from Ground Investigation (Co-ords): 085937

Survey and Air Photo Nos: Survey 936, Burnside, Run 4, Photo 5052
Quadrant D: X=1.16" Y = 0.60 Diag. = 1.32" This is
1.16" south and 0.6 west of centre point.

Access: 8 miles northward along formed track from Daly River road
at a point 31 miles from Stuart Highway, thence 11 miles
westward through scrub to Adelaide River, thence 1½ miles
northward.

Topography: The anomaly is within a plain flanked by high dissected
country at the edge of a fault line 1½ miles west and by
similar dissected country 1 mile east. The surface climbs
rapidly to a higher ~~an~~ level ¾ mile south of prospect, and
the topography is more broken.

Geology: A fine grained purple rock which may be ^{an} acidic
~~or~~ volcanic is exposed in a low outcrop elongated towards the
north-north west. Total length is about 250 feet, width
about 20 feet. It is strongly jointed in directions N60 W,
N, N60 E. Slight movement in *dextral* sense on the N60 W joint
has caused a little brecciation. It is overlain by white
middle(?) Cambrian limestone, massive and not jointed.
The strongly jointed acidic rock is probably much older.

Radio-Activity: Background count given by Austronic PRM 200
Geiger counter on the limestone is 50 per minute. Count
on acidic rock is 100 to 140 per minute.

Probable Cause of Anomaly: Relatively high activity inherent in
acidic rock.

FURTHER WORK RECOMMENDED: Nil.

Examined By: D. E. Gardner.

Date : 12/10/54

PRELIMINARY REPORT ON AUTHORITY TO PROSPECT NO. 248 (FORMERLY 153),
NEAR ADELAIDE RIVER, N.T.

Military Sheet: Burnside.

Location Indicated from Airborne Work (Co-ords): Nearest airborne anomaly is at 072064 which is 0.9 mile to East-South)East.

Corrected Location from Ground Investigation (Co-ords): 057064

Survey and Air Photo Nos.: Survey 94011 Burnside, Run 1, Photo 5128.
Co-ords 0.20" North/ 0.88" West Diag. 0.90". National Mapping
Reference is Quadrant C X = 0.20" Y = 0.88" Diag. = 0.90".

Access: Leave Stuart Highway $\frac{1}{4}$ mile south of Adelaide River Townsite, on track that runs south-east, approximately $2\frac{1}{2}$ miles, then follows southwards along east bank of Adelaide River for 4 miles. The river is crossed by foot to the prospect, near the west bank.

Topography: Hilly; the Adelaide River flows in a gully which is not readily crossed by any vehicle.

Geology: Silty shales and siltstone of the Lower Proterozoic Brooks Creek Group strike in a general northerly direction and dip at approximately 60 degrees towards the west. They are intersected by broad zones of shearing, not very intense, in which the direction of shearing is a little to the west of the strike of the beds. There is no sign of gossan or copper mineralisation. Small quartz fragments occur in rubble which is thinly scattered over the bedrock, and occasional small fragments of dense, non-porous limonitic material.

Radio-Activity: Count on country rock commonly 100 to 120, on Austronic P.R.M. 200. In places, apparently in shear zones the count rises to a little more than 200. A hole has been dug 5 feet deep at a locality where the surface count was said to have been 250. The count is slightly over 350 at the bottom of the hole where the beds of cherty siltstone are intersected by vertical joints 3 inches to 6 inches apart and striking parallel to the shearing.

Probable Cause of Anomaly: Traces of radio-active minerals in the fractures.

Further Work Recommended: Rapid reconnaissances across the strike of the shear-zone in traverses about 50 feet apart, with the object of finding localities of relatively high count. If found, they should be tested by shallow pitting.

Examined by: D. E. Gardner.

Date: 10/11/1954.

PRELIMINARY REPORT ON AUTHORITY TO PROSPECT NO. 254NEAR ADELAIDE RIVER, N.T.

Military Sheet: Burnside

Location Indicated from Airborne Work (Co-ords): Nearest airborne anomaly is at 057102 which is 0.6 mile to north-west.

Corrected Location from Ground Investigation (Co-ords): 064095.

Survey and Air Photo Nos.: Survey 94011 Burnside, Run 1, Photo 5128.
Co-ords. 3.44" North/1.62" West. Diag. 3.78". National Mapping
Reference is : Quadrant A, X = 3.44" Y = 1.62" Diagonal 3.78".

Access: Leave Stuart Highway $\frac{1}{4}$ mile south of Adelaide River Townsite, on track that runs south-east approximately $2\frac{1}{2}$ miles, then follows south-east along east bank of Adelaide River for 2 miles. The River is crossed by foot to the prospect, near its west bank.

Topography: Hilly. The Adelaide River flows in a gully which cannot be crossed by vehicle.

Geology: The country rock strikes approximately north and dips about 60 degrees west. It is ~~an~~ arkosic, ranging in grain-size from pebble-conglomerate, in which the proportion of fragmental quartz is high, to fine-grained sandstone, which is more felspathic. A few thin dark bands may be basic intrusive, sheared and chloritized. The country has been subjected to a shearing stress which has given it a faint lineation nearly parallel to the strike. Bands up to 15 inches wide parallel to the strike have a high content of iron which appears to be uniformly distributed. Another ferruginous band strikes approximately to the east and dips north at about 50 degrees. A strong easterly trending fault cuts the area 300 feet north of the easterly trending ferruginous band.

Radio-Activity: The arkosic country gave counts of about 100, and the ferruginous bands up to and a little more than 200.

Probable Cause of Anomaly: Slight content of uranium or thorium in ferruginous bands.

Further Work Recommended: Sink a shallow hole at locality of best count. If count does not increase markedly (say up to 600 or 800) at a depth of 2 feet, the area should be abandoned.

Examined by: D. E. Gardner.

Date: 10/11/54.

APPENDIX 10 - URANIUM COMPANIES AND SYNDICATES OPERATING
IN NORTHERN TERRITORY - 30-11.1954

Name	Local Representatives or Geologist	Southern Connections
Austral Uranium Co., N.L.	H.W.G. Good	
Australian Mining & Smelting Co. Ltd.,	H. Brennan	Zinc Corp.
Brocks Creek Uranium Co. N.L.	E. McDonald	
Centralia Mines N.L.		
Central Uranium N.L.		Mr. Goodsir
Coronation Investments Pty. Ltd.,		
Enterprise Exploration Co. Pty. Ltd.,	H. Brennan	Zinc Corp.
Gold Mines of New Guinea		
Hidden Valley Mining Syndicate	W. Power	
Metals Exploration Pty. Ltd.,	R. Hare	H.J.C. Connolly
North Australian Uranium Corporation	E. Becker	
Northern Mines Development N.L.	K. Summers	Dr. Garretty
Northern Territory Prospecting & Development Co. Ltd.,		Hopkins
Red Ned Gold Mine N.L.	J.S. Higgins	
Rio Tinto Company	R.S. Matheson	
Spring Hill Gold Mine, N.L.		
United Uranium	J. Fisher	Frank Jones
Uranium Corporation of Australia Pty. Ltd.,	Beggs	Mr. Wharton Ryo Park Scheelite
Uranium Investigations (N.T.) Syndicate	Cutlack	
Uranium Holdings		C. Donaldson
Uranium Oxide N.L.	Jensen	
Uranium Prospecting & Development N.L.	Coxon & Macdonald	Mr. R. Sprigg
Utinium Pty. Ltd.,		
Y.M.C. Syndicate	Young, Maslin & Cousins	

183
U.D.P.

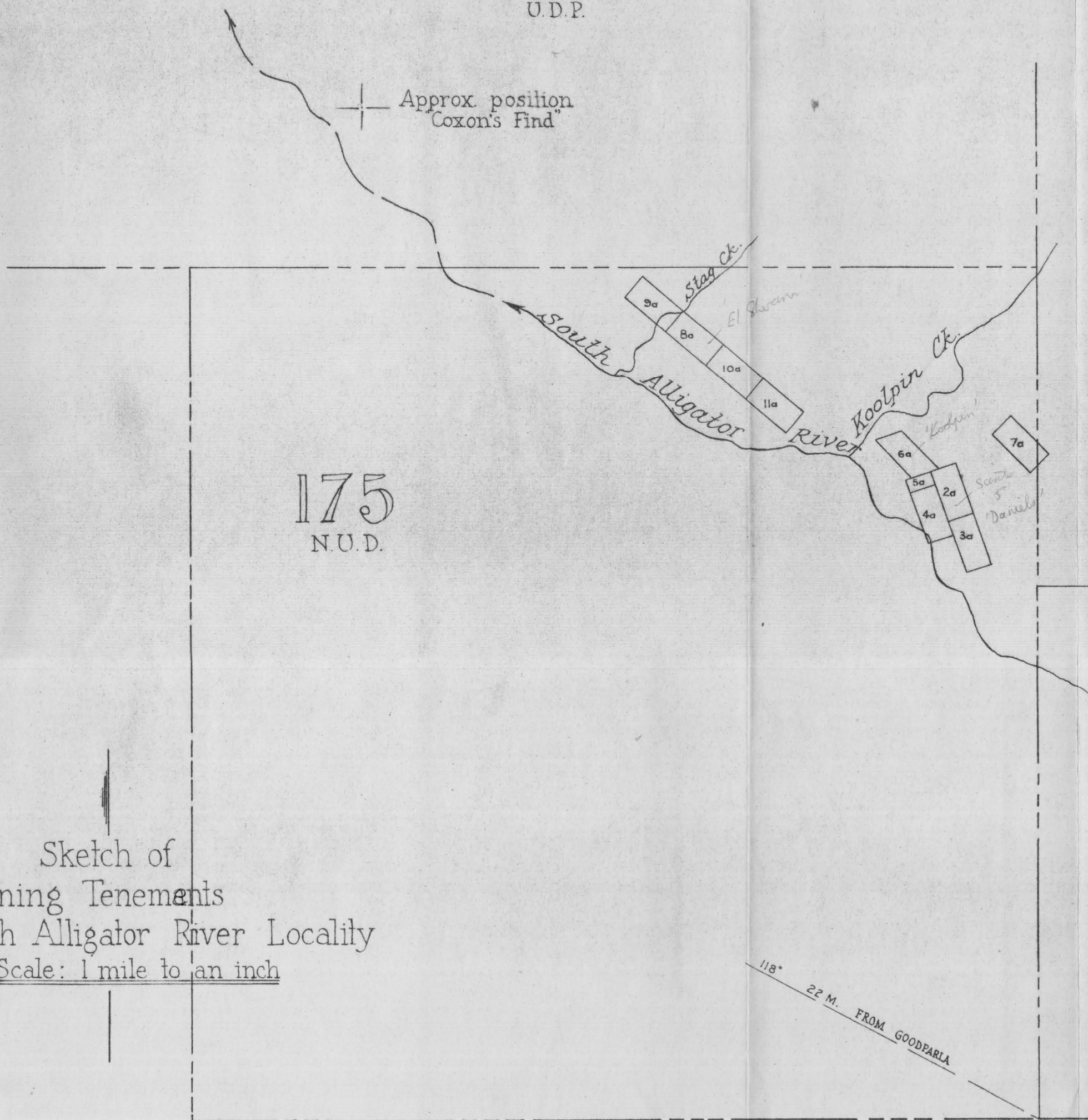
175
N.U.D.

Approx. position
"Coxon's Find"

B.M.R.

Sketch of
Mining Tenements
South Alligator River Locality
Scale: 1 mile to an inch

118°
22 M. FROM GOODEPARLA



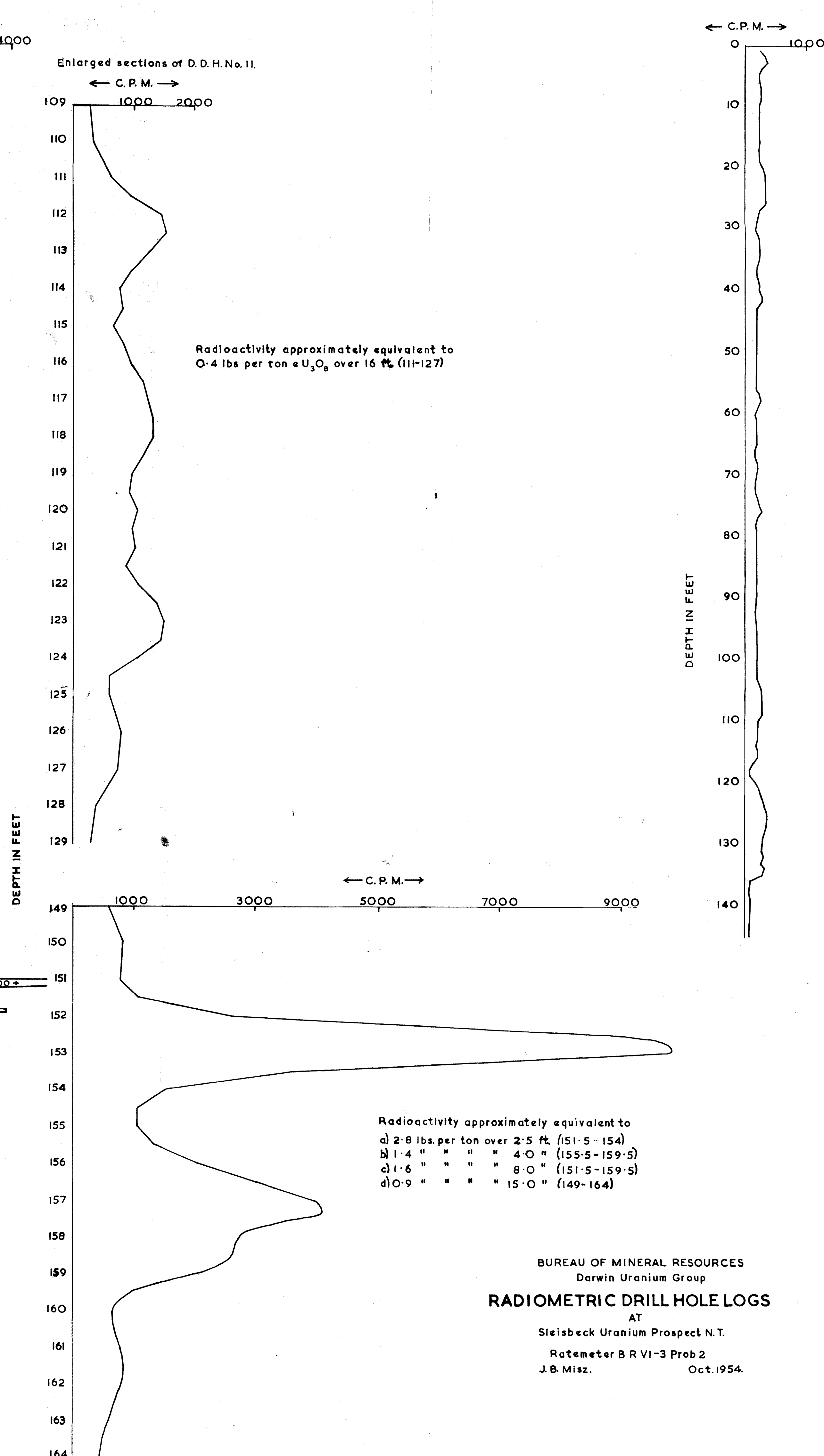
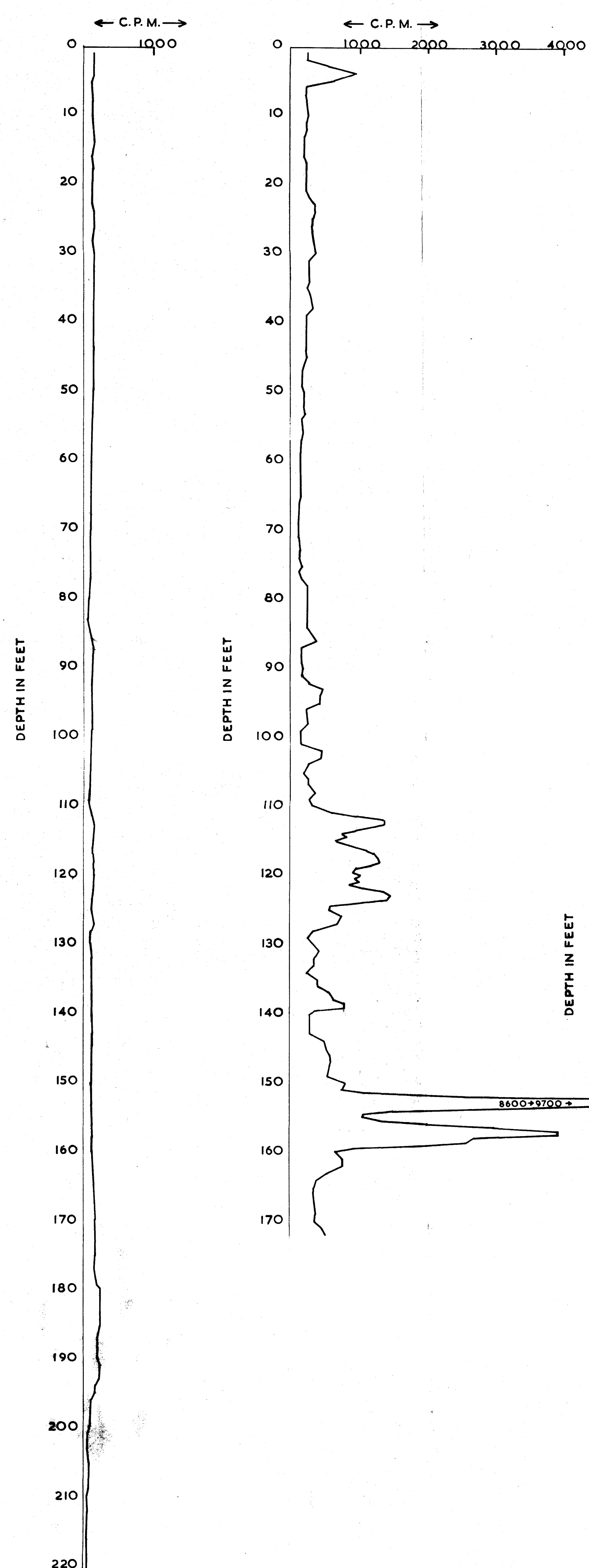
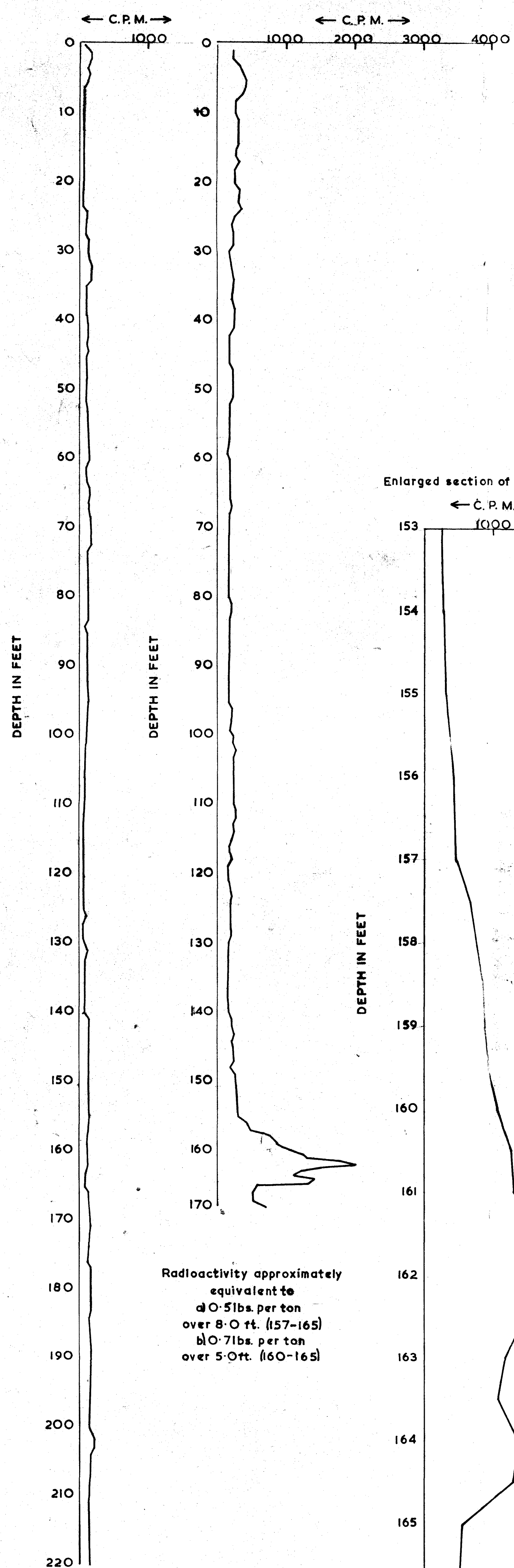
D.D.H. No. 6.
Casing: Ax. 0'-140'

D.D.H. No. 9.
Casing: Ax. 0'-169'

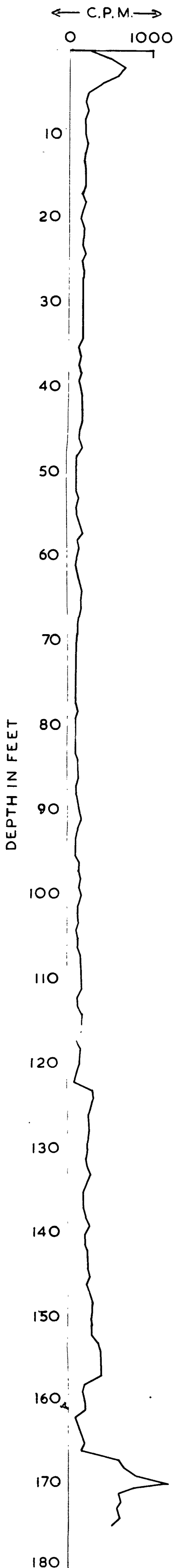
D.D.H. No. 10.
Casing: Ax. 0'-110'

D.D.H. No. 11.
Casing: 0'-30' Bx. Ax.
30'-84' Ax.
84'-91' no casing.
91'-172' Ex. casing.

D.D.H. No. 12.
Casing: Ax. 0'-136'

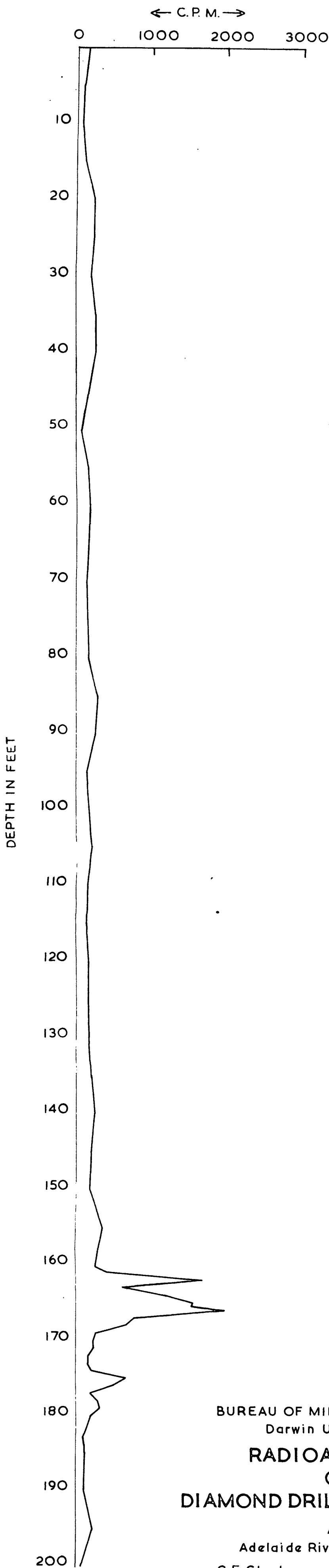


BUREAU OF MINERAL RESOURCES
Darwin Uranium Group
RADIOMETRIC DRILL HOLE LOGS
AT
Steisbeck Uranium Prospect N.T.
Ratemeter B R VI-3 Prob 2
J. B. Misz. Oct. 1954.

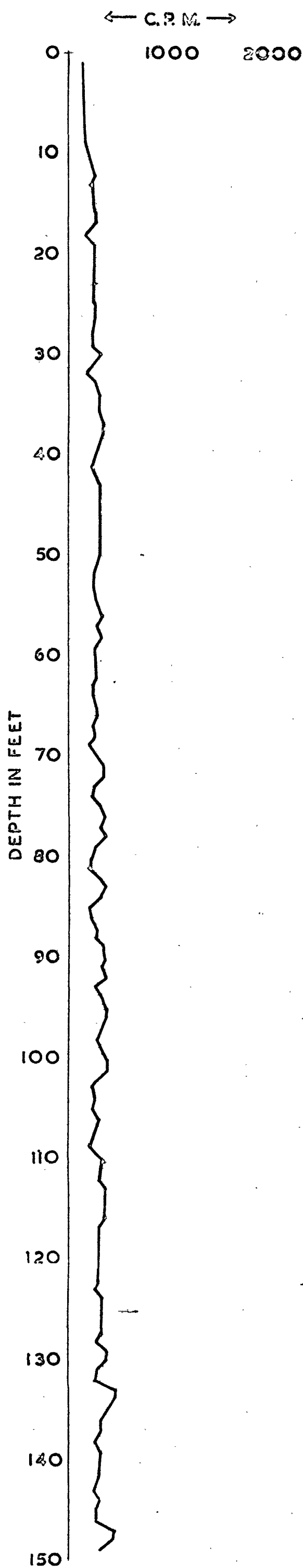


BUREAU OF MINERAL RESOURCES
 Darwin Uranium Group
**RADIOACTIVE LOG
 OF
 DIAMOND DRILL HOLE NO. 14.**
 AT
 Sleisbeck Uranium Prospect N.T.
 Ratemeter BRV3 Probe 2.
 G.F. Clarke. Nov. 1954.

D. D. H. No. 8.



BUREAU OF MINERAL RESOURCES
 Darwin Uranium Group
**RADIOACTIVE LOG
 OF
 DIAMOND DRILL HOLE NO. 8.**
 AT
 Adelaide River Prospect N.T.
 G.F. Clarke Nov. 1954.



BUREAU OF MINERAL RESOURCES
Darwin Uranium Group
RADIOACTIVE LOG
OF
DIAMOND DRILL HOLE NO. 1.

AT
Brocks Creek Uranium Prospect NT.
Ratemeter B.R.VI-3 Prob 4.
Casing: AnO-10.

J. B. Misz.

Oct. 1954.