NORTH FLINDERS MINES LIMITED

ANNUAL REPORT FOR THE NORTHWEST ARUNTA PROJECT AREA FOR THE TWELVE MONTH PERIOD TO 7 FEBRUARY 1997

EXPLORATION LICENCES COVERED BY THIS REPORT:-

EL8362	**(Squiggle)**
EL8363	**(Terrier)**
EL8367	**(Red Hackle)**
EL8549	**(Blue Blood)**

1:250 000 Plans

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Mt Peake	Sheet SF 53-5
Napperby	Sheet SF 53-9

1:100 000 Plans

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Giles	Sheet 5354
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APPENDICES

Appendix 1: Petrology Report (Pontifiex and Associates Mineralogical Report No. 7256)

Appendix 2: Point Sampling, Costean and Drilling Database Subdivided by Licence Area and Sample Type. (Separate Volume).

Appendix 2 (part B) of this report is a computer print out.

All information in appendix 2 (part B) is available in digital format see

CR2001-0229, CR1999-0196 and CR1999-0184

SUMMARY

This report describes the exploration activity and results obtained from EL8362 (Squiggle), EL8363 (Terrier), EL8367 (Red Hackle) and EL8549 (Blue Blood) during the third year of tenure to 7th February 1997. Gold mineralisation has been the Company's principal target, though search techniques are also designed to identify base metals.

First pass reconnaissance exploration over the tenement group is now complete. Deferral of the first statutory relinquishment by the NTDME allowed this work to be undertaken in a comprehensive manner. Most of the area is under cover, and an extensive programme of shallow drill testing was required to select the most prospective zones for further investigation.

Most of the exploration activity has been related to advanced prospects requiring follow-up investigations. In particular, the Black Range Mineralised Domain (within EL8363) has emerged as an area which exhibits promising gold geochemistry at several sites. The domain includes Troutbeck, Black Knight, Bowness, Tin Bore and Hawkeshead prospects. The structural corridor hosting the prospects extends into EL8367 where gold anomalism has been identified at Red Hackle Ridge and Red Handed.

Work undertaken in the project area has included:-

- geological mapping
- rock chip sampling of outcrop
- surface lag sampling
- stream sediment sampling
- soil sampling
- vertical vacuum and RAB drilling to test bedrock beneath cover
- placement of local grids over exploration prospects
- inclined RAB drilling of anomalous prospects
- petrological study

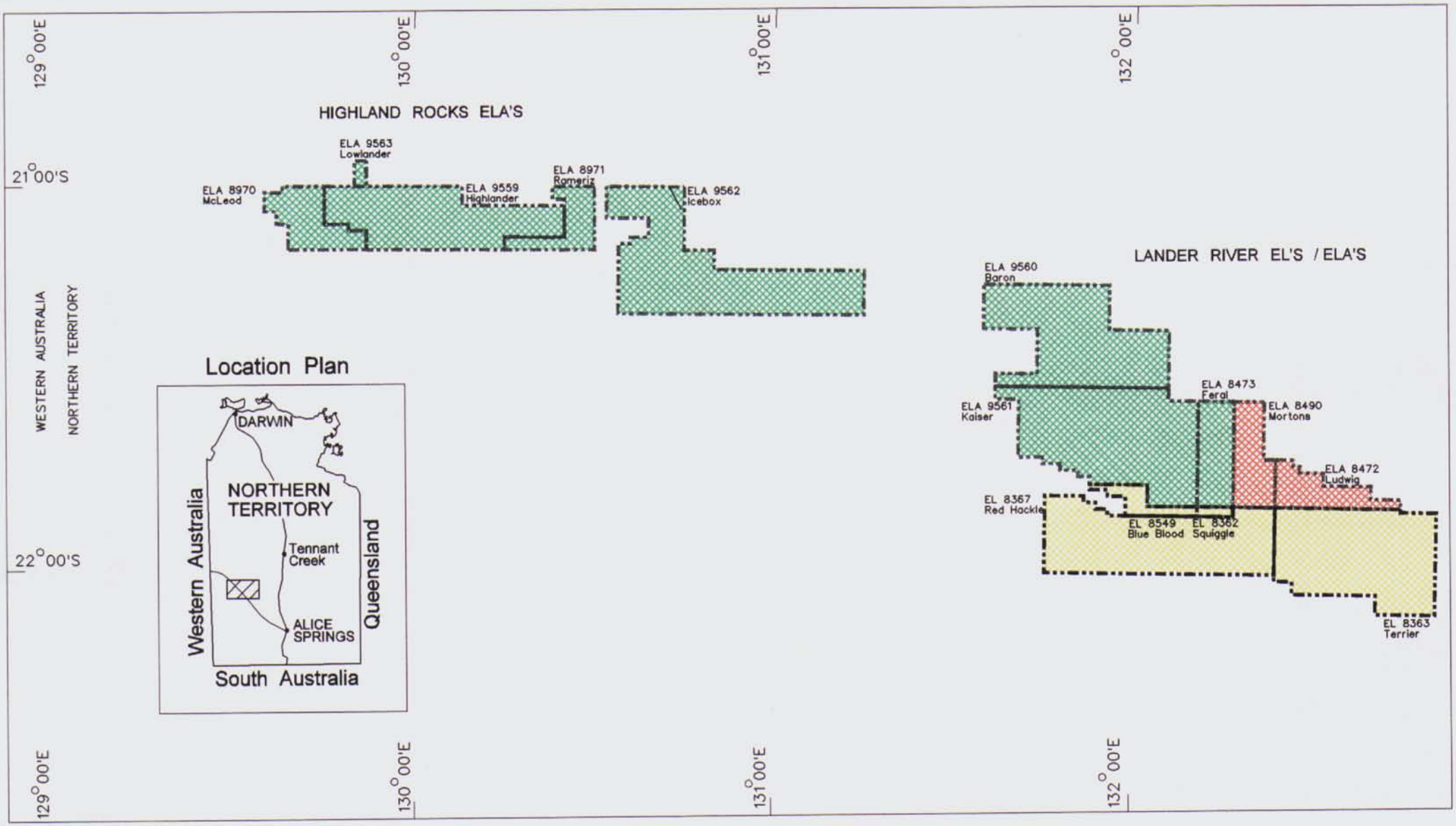
1. INTRODUCTION

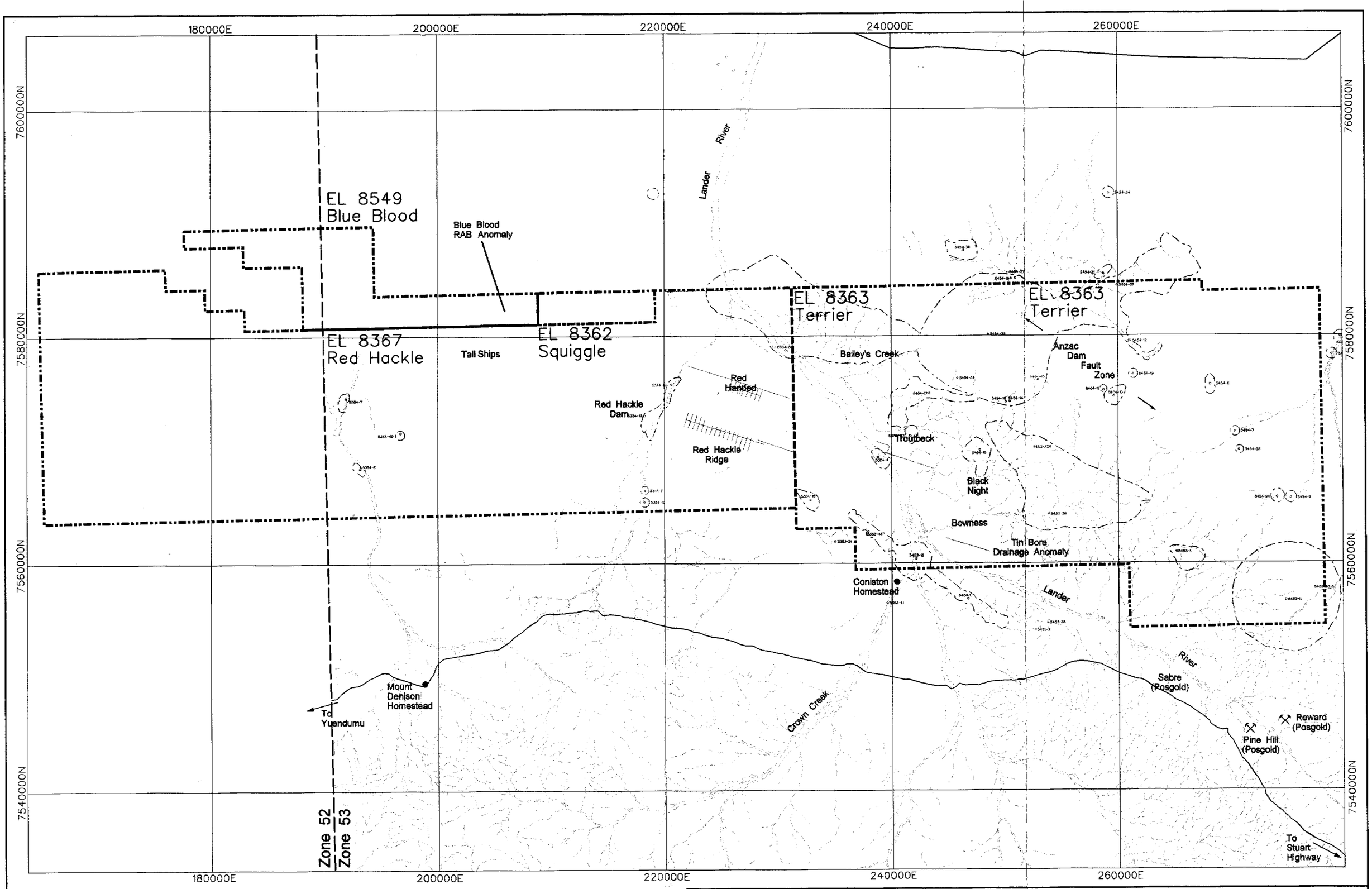
The four Lander River exploration licences (see Figure 1 for location) cover a portion of the NW Arunta Inlier. The main lithologies present in the region are the lower Proterozoic turbiditic Lander Rock Beds, pre- or syn-tectonic gneisses and post-tectonic granitoids. Upper Proterozoic quartzites unconformably overlie the lower Proterozoic rocks in the northern part of the area. Structurally the area is dominated by southeast-trending features.

North Flinders' interest in the region was based on an interpretation of available airborne magnetic data which indicated that a major linear feature extends southeast from the Granites-Tanami Inlier into this little explored area. Several historic gold and base metal workings occur on this structure immediately to the southeast of the granted exploration licences.

Field work by NFM commenced in the second half of 1994. Initial reconnaissance rock chip/drainage sampling identified several areas of interest. Later drilling enhanced the prospectivity of these and other areas, with investigations centred on the southeast-trending Lander Rock Beds Structural Corridor which has hosted all significant gold mineralised zones identified to date.

To assist the reader, a prospect location plan (Figure 2) and a plan showing the position of the main drill traverses (Figure 3) is provided.


129°00'E
130°00'E
131°00'E
132°00'E
HIGHLAND ROCKS ELA'S
ELA 9563
Lowlander
ELA 8970
McLeod
ELA 9559
Highlander
ELA 8971
Romeriz
ELA 9562
Icebox
21°00'S
22°00'S
WESTERN AUSTRALIA
NORTHERN TERRITORY
LANDER RIVER EL'S / ELA'S
ELA 9560
Baron
ELA 9561
Kaiser
ELA 8473
Feral
ELA 8490
Mortons
ELA 8472
Ludwig
EL 8367
Red Hackle
EL 8549
Blue Blood
EL 8362
Squiggle
EL 8363
Terrier
Location Plan
DARWIN
NORTHERN TERRITORY
Western Australia
Queensland
Tennant Creek
ALICE SPRINGS
South Australia
Granted Exploration Licences
Exploration Licence Under Application
Exploration Licence Application Vetoed
North Flinders Mines Limited
North Flinders Mines
ARUNTA REGION
TENEMENT LOCATION PLAN
Annual Aruntas Project Report : February 1997
Scale 1 : 1,500,000
Figure 1
../general/el005.



North Flinders Mines Limited

Lander River Reconnaissance : Northern Territory

LANDER RIVER EL's

PROSPECT LOCATION MAP

Data by : NFM	NOVEMBER 1996	Scale 1 : 300,000	Figure 2

../rpt042.dgn

180000E 200000E 220000E 240000E 260000E

7600000N 7580000N 7560000N 7540000N

EL 8549
Blue Blood

EL 8367
Red Hackle

EL 8362
Squiggle

EL 8363
Terrier

Blue Blood
RAB Anomaly

Mt. Campbell
South

Flightpath
Hills

Woodalla
Hills

Tall Ships

Red Hackle
Dam

Red Hackle
Ridge

Red
Handed

Bailey's Creek

Anzac
Dam
Fault
Zone

Troutbeck

Black
Knight

Bowness

Tin Bore
Drainage Anomaly

Coniston
Homestead

Lander River

Lander

Access
Bore

Mount
Denison
Homestead

To
Yuendumu

Crown Creek

Sabre
(Posgold)

River

Reward
(Posgold)

Pine Hill
(Posgold)

To
Stuart
Highway

Zone 52
Zone 53

LEGEND

Phase 1:
VACUUM 5-7.5km x 500m
(step out to 1000m spacing in deep cover)
RAB 2.5km x 500m (vertical)

Phase 2:
VACUUM 1km x 200m (step out to 400m in deep cover)
RAB 500m x 250m (vertical)

Phase 3:
VACUUM grid (Prospect Evaluation) 400m x 100m
RAB Red Hackle Ridge angled traverses

4 x 100m angled RAB holes at Bailey's Creek

North Flinders
Mines Limited

Aruntas Reconnaissance : Northern Territory

LANDER RIVER EL's

COMPLETED DRILL TRAVERSES TO END OF NOVEMBER 1996

Data by : NFM	November 1996	Scale 1 : 300,000	Figure 3

../rpt103.dgn

2. TENEMENT DETAILS

The four tenements currently held by NFM in the Lander River area of the northwest Arunta region were all granted between February and May 1994 (see Figure 1). They lie over Crown land held as pastoral leases.

Initial work has identified prospective areas at several locations and the need to ensure all parts of the tenement block were carefully evaluated led North Flinders Mines to apply for a one year deferment of relinquishment. This was granted by the Principal Registrar in a letter dated 22nd December 1995.

As all the licence areas are contiguous and exploration programmes are essentiallly unconstrained by internal boundaries, group reporting status was also sought from the Department. This was granted by the Chief Government Geologist in a letter dated 13th December 1995, with lodgements due on 7th March.

An application for a Substitute Exploration Licence was made in a letter to the Department on 23rd December 1996. The grant of the proposed SEL would facilitate exploration programmes undertaken across internal tenement boundaries and allow more flexibility in statutory reductions. If the application is approved, NFM intends to relinquish a total of 392 blocks from the four licence areas (54%) prior to the grant of the SEL.

Table 1 : Tenement Summary, NW Aruntas Project

Title	Name	EL/ELA Group	Blocks	Grant Date	Expiry Date	Expenditure
EL8362	Squiggle	Lander River ELs	12	08/02/94	07/02/00	$15 000
EL8363	Terrier	Lander River ELs	396	22/03/94	21/03/00	$150 000
EL8367	Red Hackle	Lander River ELs	392	20/04/94	19/04/00	$150 000
EL8549	Blue Blood	Lander River ELs	45	20/05/94	19/05/00	$20 000
		Total	**845**	**(2 729 km)^2**		**$335 000**

3. LOCATION, ACCESS AND PHYSIOGRAPHY

The group of exploration licences lie approximately 300 km northwest of Alice Springs and 60 km northeast of Yuendumu. The tenements plot close to the junction of the Mount Peake, Mt Theo and Napperby 1:250 000 scale map sheets.

Access from Alice Springs to the central and western portions of the tenement block is via the Stuart Highway to a turnoff 15km north of Aileron, then west via the unsealed road through Pine Hill station and along the north side of the Reynolds Range to the Coniston Homestead. The eastern portion of the licence is reached by following the Stuart Highway to a turnoff 155km north of Alice Springs, then northwest for 70km to Nintabrinna Bore which is situated on the eastern boundary of EL 8363. There is a network of station tracks within the tenement block providing local access..

Physiographically the eastern portion of the area is dominated by the Yindjirbi, Yundurbulu and Nanga Ranges (highest point Mount Leichhardt at 1139m). This relief provides significant geological outcrop and widespread drainage development. Major tributaries of the Lander River converge at a gap in the Giles Range near the Coniston homestead, to form a single large river draining north through the tenement block. Most of the area west of the Lander River is a flat, sand covered plain with minimum outcrop exposure.

Vegetation consists of spinifex, shrubs (cassia) and low trees (mallee, acacia), with eucalypts and tea tree growing in drainages. Pockets of mulga are locally developed, particularly on areas of red earth.

4. REGIONAL GEOLOGY

A description of regional geology has been provided in the previous annual report. Since then the results of the recent remapping of the Mt Doreen 1:250,000 sheet area (located immediately south of the tenement area) have been released by the Northern Territory Geological Survey (Young et al, 1995). The volume of Explanatory Notes accompanying the map discusses in some detail variations within the Lander Rock Beds and new ideas on regional geology in general. This information has yet to be fully assessed and incorporated into the Company's regional geological understanding

5. PREVIOUS EXPLORATION

5.1 Exploration by Other Companies

A search of open file NTDME records indicated that no substantial exploration work had been previously undertaken (R. C. Chadwick 1994).

5.2 Previous Exploration by North Flinders Mines Ltd.

Initial reconnaissance field work by NFM was undertaken in the latter half of 1994 (Morrison 1994). Rock chip sampling identified an area of gold and arsenic anomalism at Red Hackle Ridge. Low order drainage anomalies were identified from the Yindjirbi Range, Loora Hills and Tin Bore areas. Reconnaissance mapping suggested the prospective Lander Rock Beds, host to known mineralisation nearby, was controlled by a NW-striking structural corridor. The Lander Rock Beds structural corridor (LRBSC) was proposed as an area of initial priority for reconnaissance exploration during 1995.

Exploration during 1995 (Morrison et al. 1995a, 1995b) involved the integrated use of reconnaissance vacuum and RAB drilling, lag sampling, drainage sampling and rock chip sampling. Wide-spaced reconnaissance exploration occurred over all of the granted EL's, with closer-spaced, more detailed exploration within the priority LRBSC. By the end of 1995 a number of gold anomalous areas had been identified including Red Handed, Bailey's Creek, Troutbeck and Bowness.

A photogeological study by Australian Photogeological Consultants was completed during 1995.

6. EXPLORATION OBJECTIVES

The objectives of the work programme during 1996 are summarised as follows:-

- continuation of reconnaissance and first pass follow-up exploration within the prospective "Lander Rock Beds Structural Corridor" (LRBSC)
- continuation of follow-up exploration over known mineralised prospects to further define areas of potential mineralisation
- completion of reconnaissance exploration in areas of perceived low prospectivity in preparation for statutory relinquishment.

7. SAMPLING METHODS AND ANALYTICAL TECHNIQUES

7.1 Sampling Methods

7.1.1 Lag Sampling

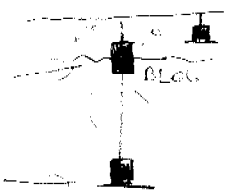
All lag samples were collected from surface and sieved with the -7mm +2mm size fraction retained. The organic content of the sample was minimised as much as possible.

7.1.2 Drainage Sampling

Drainage sites are pre-selected using aerial photographs. Samples were collected from the creek beds (as opposed to bank/overbank), but with no emphasis on selecting trap-sites. At the Yundurbulu Range and Tin Bore locations a single -80 mesh sample was collected at each site. However, at Blackfellow Creek a -2mm 4kg BLEG sample was taken also.

7.1.3 Vacuum Drilling

The majority of vacuum holes were sampled using the following methodology:



A -2mm 4kg BLEG sample was collected from the transported regolith immediately overlying residual bedrock/laterite. Usually this sample included part of the bedrock/laterite interface to ensure that both transported and residual material was sampled.

An unsieved bedrock/laterite sample was collected from the bottom of the hole. Additional bedrock/laterite samples may have been collected from higher up the hole.

In holes which failed to reach bedrock, a -2mm BLEG and/or an unsieved colluvium sample may have been collected from the bottom of the hole.

7.1.4 Reconnaissance RAB Drilling (Vertical)

The vertical reconnaissance RAB holes were sampled following the same methodology as for vacuum drilling. In some cases, additional BLEG and colluvium samples may have been collected from higher levels up the hole.

7.1.5 Angled RAB Drilling

The angled RAB holes were generally composite sampled over the first four metres, and thereafter at three metre intervals. A 2kg riffle-split sample was retained for assay.

7.1.6 Drillhole and Sample Site Location

All drillhole and sample sites are located by AMG co-ordinates. If a local grid has been established, these coordinates are also supplied. Off grid locations are determined with air photo control or GPS equipment.

7.2 Analytical Methodology

Details of laboratories and analytical techniques are provided in Table 2. BLEG and lag samples were sent to Genalysis Laboratory Services in Maddington, Perth, WA. All other sample types were submitted to ALS, Alice Springs, for preparation prior to the pulps being analysed by ALS in Brisbane.

Table 2 : Analytical Methods and Detection Limits for Different Sample Types

Sample Type	Laboratory	Method	Element Suite (Detection ppm)
SSS/VAC/Reconn RAB Bulk Cyanide Leach (BLEG - VBCL/DBCL)	Genalysis	CN4/E	Au (0.0001)
SSS/VAC/Reconn RAB Bulk Cyanide Leach (BLEG - VBCL/DBCL)	Genalysis	CN4/A	Cu (0.01), Ag (0.01)
Lag	Genalysis	B/ETA	Au (0.001)
Lag	Genalysis	B/AAS	Cu (1), Fe (100), Zn (1)
Lag	Genalysis	A/MS	As (2), Bi (0.5), Co (1), Pb (2), Sb (0.5), Sn (1), U (0.1) W (1),
Lag	Genalysis	B/AAS	Ag (0.1)
SSS	ALS	PM225	Au (0.001)
Costean	ALS	PM204	Au (0.001)
Costean	ALS	G102	As (1)
CRC/SSS/VAC/Reconn RAB	ALS	PM204	Au (0.001)
CRC/SSS/VAC/Reconn RAB	ALS	MS587	Ag (0.2), As (1), Bi (0.2), Co (0.1), Cu (1), Pb (1), Sb (0.2), Se (0.5), Sn (0.2), U (0.1), W (0.2), Zn (1)
Angled RAB	ALS	PM204	Au (0.001)
Angled RAB	ALS	G102 G004	Cu (5), Bi (1) As (1)

8. WORK UNDERTAKEN - EL8362 SQUIGGLE

Although the results of previous work on EL8362 were reviewed during the reporting period, no specific field activity occurred, and direct expenditure cannot be attributed to this tenement. Accordingly, a variation of covenant is applied for in the letter accomanying this report.

The large integrated exploration programmme was undertaken on the three other EL's in the group which substantially exceeded covenanted expenditure levels for the project as a whole.

9. WORK UNDERTAKEN - EL8363 TERRIER

9.1 Reconnaissance Exploration

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 3 or 4 below for statistics.

9.1.1 Stream Sediment Sampling - Head of Blackfellow Creek

Creeks draining Mt. Stafford Beds outcrop at the head of Blackfellow Creek were reconnaissance sampled at -80 mesh to provide standard sediment samples and at -2mm to yield material for bulk cyanide leach. 22 sites were visited and 44 samples collected. Standard stream sediment samples were assayed for gold (ALS method 225) plus a standard multielement suite (ALS method 587). Bulk cyanide leach samples were analysed for gold (Genalysis method CN4/E) and silver/copper (Genalysis method CN4/A). Sample sites are located on Figures 4&5 and analytical results appear in Appendix 2.

No significant results were returned.

9.1.2 Stream Sediment Sampling - Yundurbulu Range

Creeks draining the greater Yundurbulu Range area were reconnaissance sampled at -80 mesh. 532 samples were sampled for gold (ALS method 225) plus standard multielement suite (ALS method 587). Sample sites are located on Figure 4 and analytical results appear in Appendix 2.

Initial work generated some interest when a cluster of sample locations recorded gold values of up to 13ppb Au. Subsequent sampling has indicated six distinct areas of anomalism, including those later named Tin Bore, Hawkeshead and Black Knight. Local rock chip sampling has substantiated a gold mineralised source at the Black Knight prospect - see Section 9.1.4.

9.1.3 Composite Rock Chip Sampling - Anzac Dam Fault Zone

Reconnaissance rock chip sampling was carried out as part of general geological reconnaissance in the Anzac Dam Fault Zone. 47 sampleswere collected sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figure 6 and analytical results appear in Appendix 2.

A shear zone with over 900m of strike extent was identified and found to show strong hematite, sericite and sulphide alteration. Copper values to 860ppm and bismuth to 850ppm were recorded within this alteration assemblage which is similar to an alteration zone observed at Bailey's Creek. Gold values only reach 4ppb.

9.1.4 Composite Rock Chip Sampling - Yundurbulu Range

A small rock chip sampling programme was carried out in conjunction with drainage sampling in the Yundurbulu Range. 55 samples were collected from available outcrops and sampled for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figure 6 and analytical results appear in Appendix 2. The results of follow up rock chip sampling over the Troutbeck prospect are described in Section 9.5.3.

A single sample was collected from the Yundurbulu Range area for petrological investigation (NWA-059). The sample site is located on Figure 27 and the consultant's description is provided in Appendix 1.

Composite rock chip sampling located a zone with highly anomalous gold-arsenic geochemistry known as the Black Knight prospect. Seven samples were collected from this area for petrological investigation (NWA-060 to 066). The sample sites are located on Figure1 of the consultant's report presented in Appendix 1.

Table 3 : EL 8363 (Terrier) - Reconnaissance Sampling

Sample Type / Location / Code	Samples Collected	Sample Numbers
Stream Sediment - Blackfellow Creek SSS	22	5025385 - 5025406
Stream Sediment - Blackfellow Creek Bulk Cyanide Leach DBCL	22	5050177 - 5050198
Stream Sediment Sampling - Yundurbulu Range SSS	532	5025407 - 5025750 5028001 - 5028188
Composite Rock Chip Sampling - Anzac Dam Fault Zone CRC	47	5100724 - 5100770
Composite Rock Chip Sampling - Yundurbulu Range CRC	55	5100462 - 5100499 5100667 - 5100677 5100841 - 5100846

9.1.5 Reconnaissance Vacuum Drilling - Access Bore Area

A second stage of vertical reconnaissance vacuum drilling was undertaken (nominally at 1km x 200m spacing, but spaced to 400m in areas of deep cover) in the Access Bore area Drilling was confined to two traverses (BF1 and BF2). 53 holes were drilled (NAV1702 to NAV1754). A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E) , together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 7&8 and analytical results appear in Appendix 2.

Drill hole logging identified and defined granitic and metasedimentary terranes over this covered area. No anomalous results were returned from either BLEG or bedrock sampling.

9.1.6 Reconnaissance Vacuum Drilling - Anzac Dam Fault Zone

Reconnaissance vacuum drilling was carried out along a corridor following the Anzac Dam Fault Zone on traverses 1km apart and at intervals of 100 - 200m. 230 holes numbered NAV1120 to 1232 and NAV1248 to 1364 were drilled. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 7&8 and analytical results appear in Appendix 2.

The drilling geochemically tested and defined the elongate schistose metasediment / metadolerite unit preserved within the granitic terrane. Only one anomalous gold result (5ppb Au) was returned, though the schist zone showed elevated cobalt and zinc values.

Table 4 : EL8363 (Terrier) - Reconnaissance Vacuum Drilling and Sampling Data

Location	Drill Hole Numbers	Total Drill Holes	Total Meters Drilled	Total Bedrock Samples	Total Colluvium (BLEG) Samples
Access Bore - Vacuum Drilling	NAV1702 - 1754	53	202.9	47	53
Anzac Dam Fault Zone - Vacuum Drilling	NAV1120 - 1232 NAV1248 - 1364	230	1241.2	241	229

9.2 Follow Up Exploration - Anzac Dam Fault Zone Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 5 or 6 below for statistics.

9.2.1 RAB Drilling

An inclined RAB drilling programme tested the mineralisation potential beneath the best mineralised segment of the Anzac Dam Fault Zone. 12 holes (NAB256 to NAB267), were drilled for a total of 542 metres. Composite samples were collected over the first four metres, and every three metres thereafter. Each interval was assayed for gold (ALS method PM204), arsenic (ALS method G004) plus bismuth and copper (ALS method G102). Drill sites are located on Figure 9 and analytical results appear in Appendix 2.

The gossanous schistose outcrop tested by the drilling programme was found to lie above a pyritic portion of the Anzac Dam Fault Zone. No gold assays greater than 5ppb Au were encountered, though 24 metres @ 0.1% Cu (NAB256) and a peak value of 244ppm bismuth were returned.

9.3 Follow Up Exploration - Bowness Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 5 or 6 below for statistics.

9.3.1 Gridding

4.0 line km of surveyed baseline and 25.6 line km of crosslines (400m x 50m) were established. The grid is located on Figure 10.

9.3.2 Composite Rock Chip Sampling

A silicified fault zone in the northern part of the gridded area was composite rock chip sampled. 14 samples were collected from available outcrops for gold analysis (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figure 6 and analytical results appear in Appendix 2.

This limited programme conducted north of the Bowness grid returned peak values of 6.14 g/t Au, 1550 ppm As and 319ppm Bi from a highly gossanous fault which also showed evidence of alteration. The fault can be traced intermittently over a length of 900 metres.

9.3.3 Vacuum Drilling

Vacuum drilling was undertaken on a 400m x 100m grid to follow up previously identified regolith and bedrock anomalism. 208 vertical holes (BTV236 to BTV428 and BTV599 to BTV613) were drilled. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E) , together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 10 &11 and analytical results appear in Appendix 2.

Bedrock was only reached over two thirds of the grid as wet clay and alluvial cobbles presented major drilling difficulties. These areas were later drilled with a RAB rig. Holes which reached bedrock encountered unaltered and unveined metasediments with minor dolerite. The largest of the bulk cyanide leach (BLEG) gold anomalies occurs in the north of the grid. It covers 3km x 0.25km with a peak value of 48ppb Au. Best bedrock gold results range up to 70ppb Au and are coincident with the anomalous BLEG locations.

9.3.4 RAB Drilling

Vertical RAB drilling was carried out at 400m x 100m centres over the southern area of the grid where vacuum drilling failed to reach bedrock. 124 holes were drilled (BTB001 to BTB124). A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E) , together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Drill sites are located on Figure 12, VBCL sites are shown on Figure 11 and analytical results appear in Appendix 2.

Rock types in the southern portion of the Bowness grid appear similar to those in the north. A BLEG anomaly with values ranging up to 11ppb Au was identified, but there are no coincident elevated gold bedrock assays.

9.3.5 Petrological Study

A single sample was collected from the Bowness area for petrological investigation (NWA-057). The sample site is located on Figure27 and the consultant's descriptions are provided in Appendix 1.

9.4 Follow Up Exploration - Tin Bore Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 5 or 6 below for statistics.

9.4.1 Stream Sediment Sampling

Creeks draining the Tin Bore prospect were sampled at close-spaced intervals to define previously identified bulk cyanide leach (BLEG) anomalism identified in earlier reconnaissance drainage sampling. 50 samples of stream sediment material passing -80 mesh were sampled for gold (ALS method 225) plus a standard multielement suite (ALS method 587). Sample sites are located on Figure 4 and analytical results appear in Appendix 2.

The programme successfully delineated a source for the BLEG anomalism by producing a cluster of elevated gold results west of the main creek, with a peak value of 2.93 g/t Au from stream sediment in a small tributary. A thin quartz vein cropping out in the creek bed near the site was chip sampled and found to be gold bearing. Prospectivity is believed to be limited by the size and density of quartz veins in the area.

9.4.2 Composite Rock Chip Sampling

16 follow-up rock chip samples were collected from locations within the Tin Bore prospect for gold analysis (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figure 4 and analytical results appear in Appendix 2.

Results of this programme are discussed above. The peak gold value is 516ppb Au.

9.5 Follow Up Exploration - Troutbeck Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 5 or 6 below for statistics.

9.5.1 Gridding

A grid with 6.0 line km of surveyed baseline and 37.9 line km of crosslines was established. Pegs were placed at 400m x 50m centres. The grid is located on Figure 10.

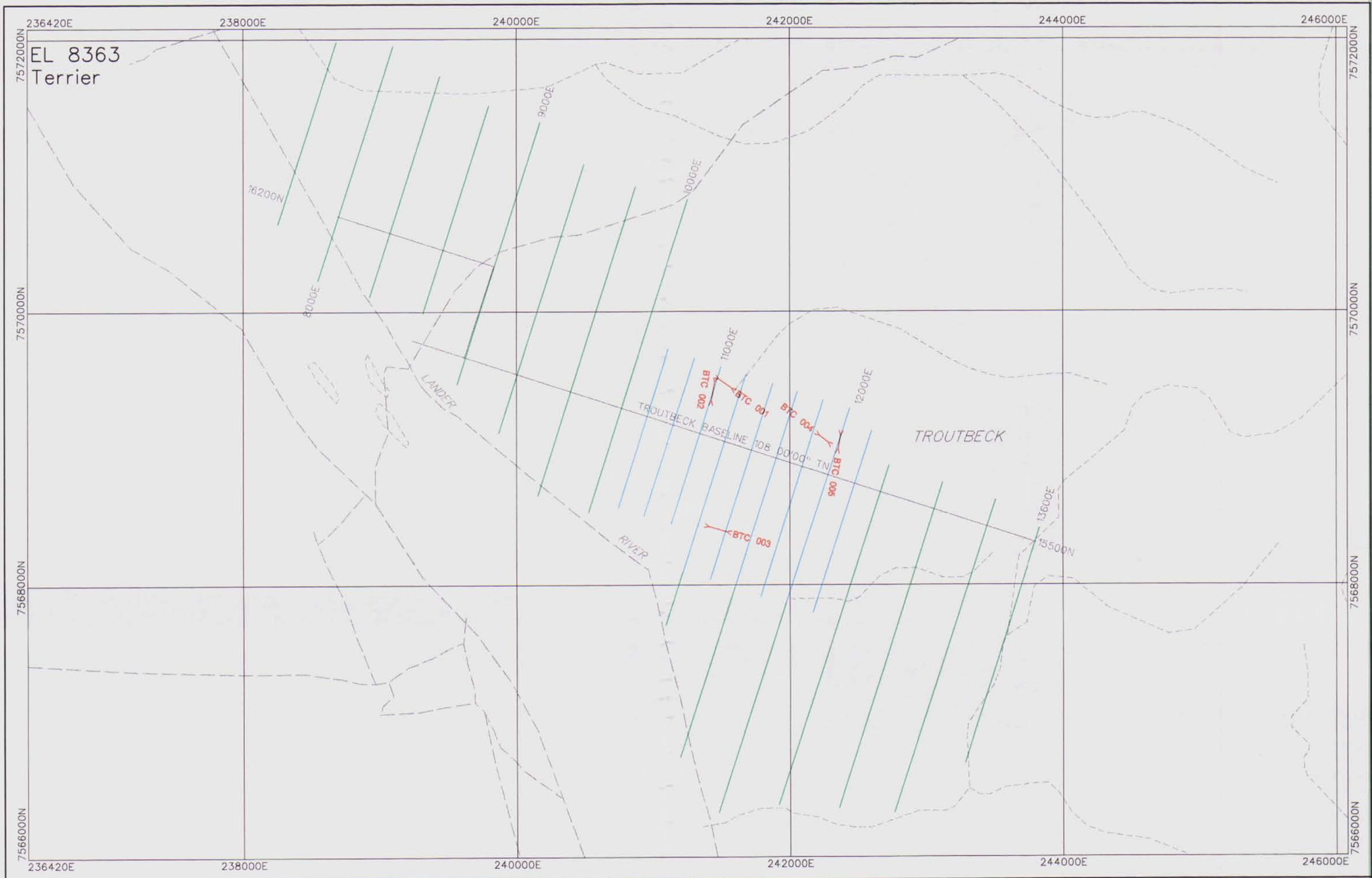
9.5.2 Outcrop Mapping

Outcrop mapping at a scale of 1:10 000 was commenced. As this work is still in progress, it is not presented in this report.

9.5.3 Composite Rock Chip Sampling

A composite rock chip sampling programme was undertaken over available outcrop at Troutbeck for gold (ALS method 204) and standard multielement suite (ALS method 587). 42 samples were collected from locations within the prospect. Sample sites are located on Figure 13 and analytical results appear in Appendix 2.

Much of the sampling was under taken over a rubbly sub-outcropping exposure of gossanous quartz veins in the Trout 3 area (see Section 9.5.4 below). Values to 5.73g/t Au, 7300ppm Cu and 657ppm As were recorded.



LEGEND

KILOMETRES
0.5 0 0.5 1

BTC 003 Costean
Vacuum Drilling 200 x 25m spacing
Vacuum Drilling 400 x 100m spacing

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER

POSITION OF COSTEANS IN RELATION TO TROUTBECK GRID

Data By : NFM	FEBRUARY 97	Scale 1 : 25000	Figure 14

..\general\rpt171.dgn

9.5.4 Vacuum Drilling

Vacuum drilling was undertaken on a 400m x 100m grid to follow up previously identified regolith and bedrock anomalism. 405 vertical holes (BTV001 to BTV235 and BTV429 to BTV598) were drilled. Generally a regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A for silver/copper and CN4/E for gold), together with a bottom of hole assay sample for gold (ALS method 204) and arsenic (ALS method 004). VBCL sampling was omitted from holes BTV542, BTV566-567, and BTV577-598. Sample sites are located on Figures 10 & 11 and analytical results appear in Appendix 2.

Encouraging assays from the above programme resulted in further vertical infill vacuum drilling at a spacing of 200m x 25m. 442 vertical holes (BTV0614 to 1055) were drilled for 1422m and 442 bottom of hole samples were collected. These were assayed for gold (ALS method 204) and arsenic (ALS method 004). Sample sites are located on Figures 10 & 11 and analytical results appear in Appendix 2.

Highly anomalous results were received from three areas. The Trout 1 zone which lies on lines 11000E and 11200E recorded a peak value of 7.04g/t Au and 6160ppm As. Trout 2 lies one kilometre to the east of Trout 1 and gave results up to 521ppb Au and 300ppm As. Trout 3 is midway between the other two anomalous areas, but a kilometre south, and gave a best value of 182ppb Au and 9900ppm As.

9.5.5 Costeaning

Five costeans totalling 572 metres were completed in three areas of the prospect. All costeans were channel sampled at one metre intervals and geologically logged at a scale of 1:250. Two costeans were excavated at Trout 1 (BTC001 and 002), another two at Trout 2(BTC004 and 005) and BTC003 at Trout 3. Schematic geological sections are presented as Figures 15 & 16. The location of the costeans is shown on Figure 14 and analytical results appear in Appendix 2.

The costean closest to the original anomalous vacuum traverse at Trout 1 (BTC002) confirmed the gold mineralised status of the prospect. A zone of schistose biotite-sericite siltstone with quartz veinlets and hematite spotting gave a peak value of 29.4g/t Au over one metre within an eight metre interval averaging 5.60g/t Au (check assay 8m @ 6.39g/t Au).

At Trout 2 the best results came from BTC005 adjacent to the broad gold-arsenic anomalous zone in vacuum drill traverse 1200E. The costean assays defined a 35 metre section averaging 0.13g/t Au, containing a peak one metre interval of 0.548g/t Au.

At Trout 3 the anticipated density of quartz veins was not encountered and although the rock chip sampling had yielded distictly anomalous gold values, these could not be replicated in the costean.

Table 5 : EL 8363 (Terrier) - Follow Up Reconnaissance Sampling

Sample Type / Location / Code	Samples Collected	Sample Numbers
Composite Rock Chip - Bownesss CRC	14	5100678 - 5100691
Stream Sediment - Tin Bore SSS	50	5025335 - 5025384
Composite Rock Chip - Tin Bore CRC	16	5100723 5100771 - 5100783 5100795 - 5100796
Composite Rock Chip - Troutbeck CRC	42	5100393 - 5100400 5100708 - 5100710 5100784 - 5100794 5100797 - 5100800 5100816 - 5100831
Costean Sampling - Troutbeck	572	5150001 - 5150572

Table 6 : EL 8363 (Terrier) - Follow Up Drill Hole and Sampling Data

Location	Drill Hole Numbers	Total Drill Holes	Total Meters Drilled	Total Bedrock Samples	Total Colluvium (BLEG) Samples
Anzac Dam Fault Zone - Angled RAB Drilling	NAB256 - 267	12	542	177	None
Bowness - Vacuum Drilling	BTV236 - 428 BTV599 - 613	208	4731.6	145	209
Bowness - Vertical RAB Drilling	BTB001 - 124	124	2633.0	126	124
Troutbeck - Vacuum Drilling - First Phase	BTV001 - 235 BTV429 - 598	405	1374.0	354	361 BTV577 - 599 not BLEG sampled
Troutbeck - Vacuum Drilling - Second Phase	BTV0614 - 1055	442	1424.1	427	None

10. WORK UNDERTAKEN - EL8367 RED HACKLE

10.1 Reconnaissance Exploration

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 7 or 8 below for statistics.

10.1.1 Composite Rock Chip Sampling

A programme of reconnaissance rock chip sampling was carried out as part of general geological reconnaissance in the Woodalla Hills area of EL 8367. 11 samples were collected for gold assay (ALS method 204) and analysis for a standard multielement suite (ALS method 587). Sample sites are located on Figure 17 and analytical results appear in Appendix 2.

No significant gold assays were retuned, though anomalous zinc samples with values to 229ppm were encountered.

10.1.2 Lag Sampling

The previously reported photogeological study by APC indicated that residual pisolitic gravels occur in the Baystone Bore area. Six sieved lag samples were collected from the locality (-7mm +2mm fraction). The samples were analysed for gold (Genalysis method B/ETA), silver (Genalysis method B/AAS), copper, iron and zinc (Genalysis method B/AAS) and arsenic, bismuth, cobalt, lead, antimony, tin, uranium, and tungsten (Genalysis method A/MS). Sample sites are located on Figure 18 and analytical results appear in Appendix 2.

The lateritic gravels failed to return significant assay results.

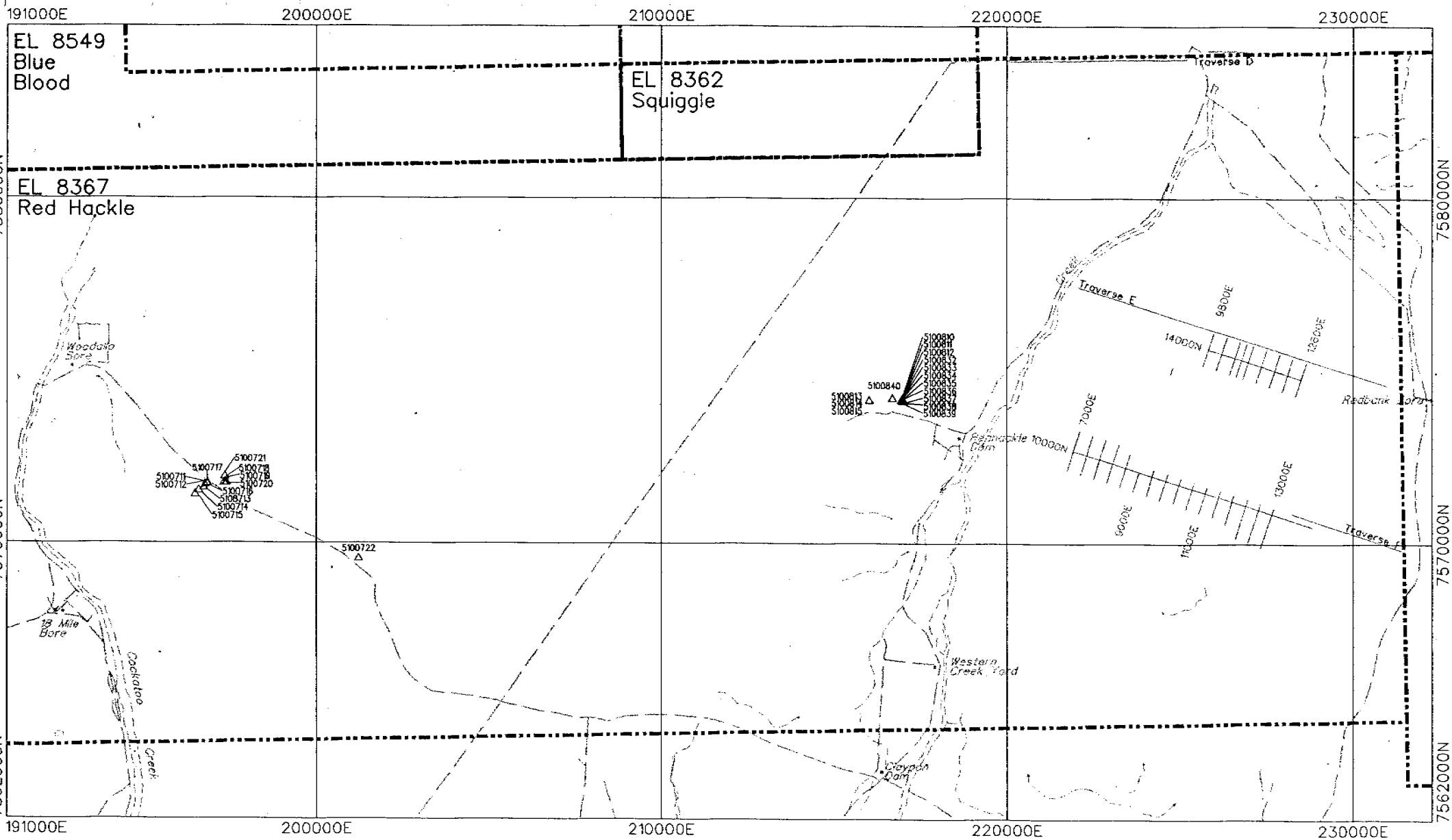
Table 7 : EL 8367 (Red Hackle) - Reconnaissance Sampling

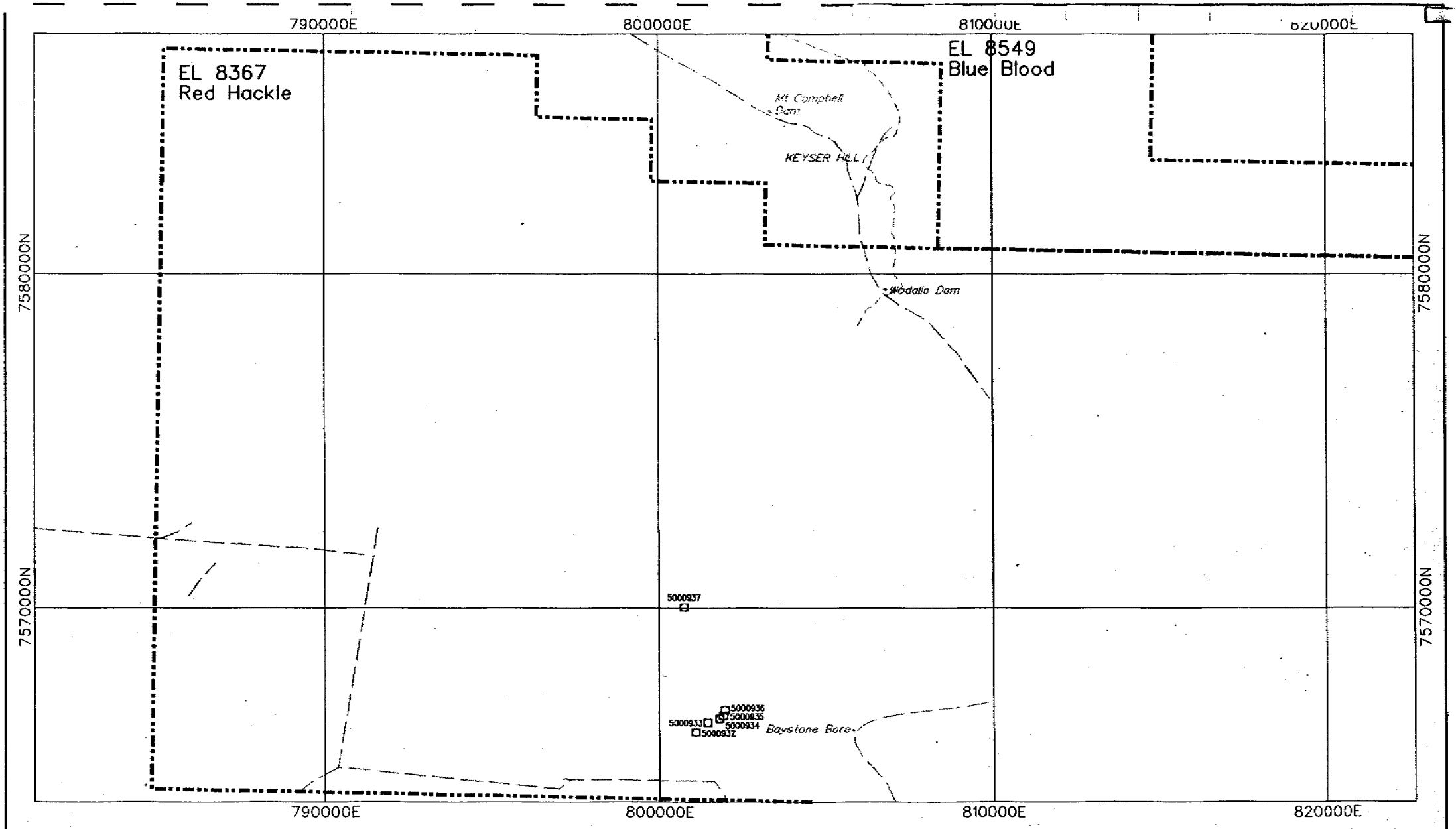
Sample Type / Location / Code	Samples Collected	Sample Numbers
Composite Rock Chip Sampling - Woodalla Hills CRC	11	5100711 -5100721
Lag Sampling - Baystone Bore Area LAG	6	500932 - 500937

10.1.3 Reconnaissance Vacuum Drilling - Completion of First Pass Programme

Wide-spaced regolith/bedrock reconnaissance drilling was undertaken at intervals of 500 metres along traverses approximately 7.5 kilometres apart to complete coverage within EL 8367, south of the Giles Range Fault Zone. A total of 42 holes (NAV1093 to 1119 and NAV1233 to 1247) were drilled. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E) , together with a bottom of hole assay sample for gold (ALS method 204) plus the standard multielement suite (ALS method 587). Sample sites are located on Figures 19 & 20 and analytical results appear in Appendix 2.

No significant assay results were returned from either BLEG or bedrock samples.


191000E
200000E
210000E
220000E
230000E
7580000N
7570000N
7562000N
EL 8549
Blue
Blood
EL 8362
Squiggle
EL 8367
Red Hackle
Traverse D
Traverse E
Traverse F
9500E
14000N
12500E
7000E
10000N
13000E
9000E
11000E
Woodalla Bore
18 Mile Bore
Cockatoo Creek
Redbank Bore
Redrackle Dam
Western Creek Yard
Clayhole Dam
5100722
0
5000
metres
5100722 COMPOSITE ROCK CHIP SAMPLE
North Flinders Mines Limited
North Flinders Mines
EL 8367 RED HACKLE
WOODALLA AND RED HACKLE DAM COMPOSITE ROCK CHIP SAMPLE LOCATION PLAN
Data By : NFM
FEBRUARY 97
Scale 1 : 150,000
Figure 17
../general/rpt171.dgn



0 5000
metres

5000937 LAG SAMPLE

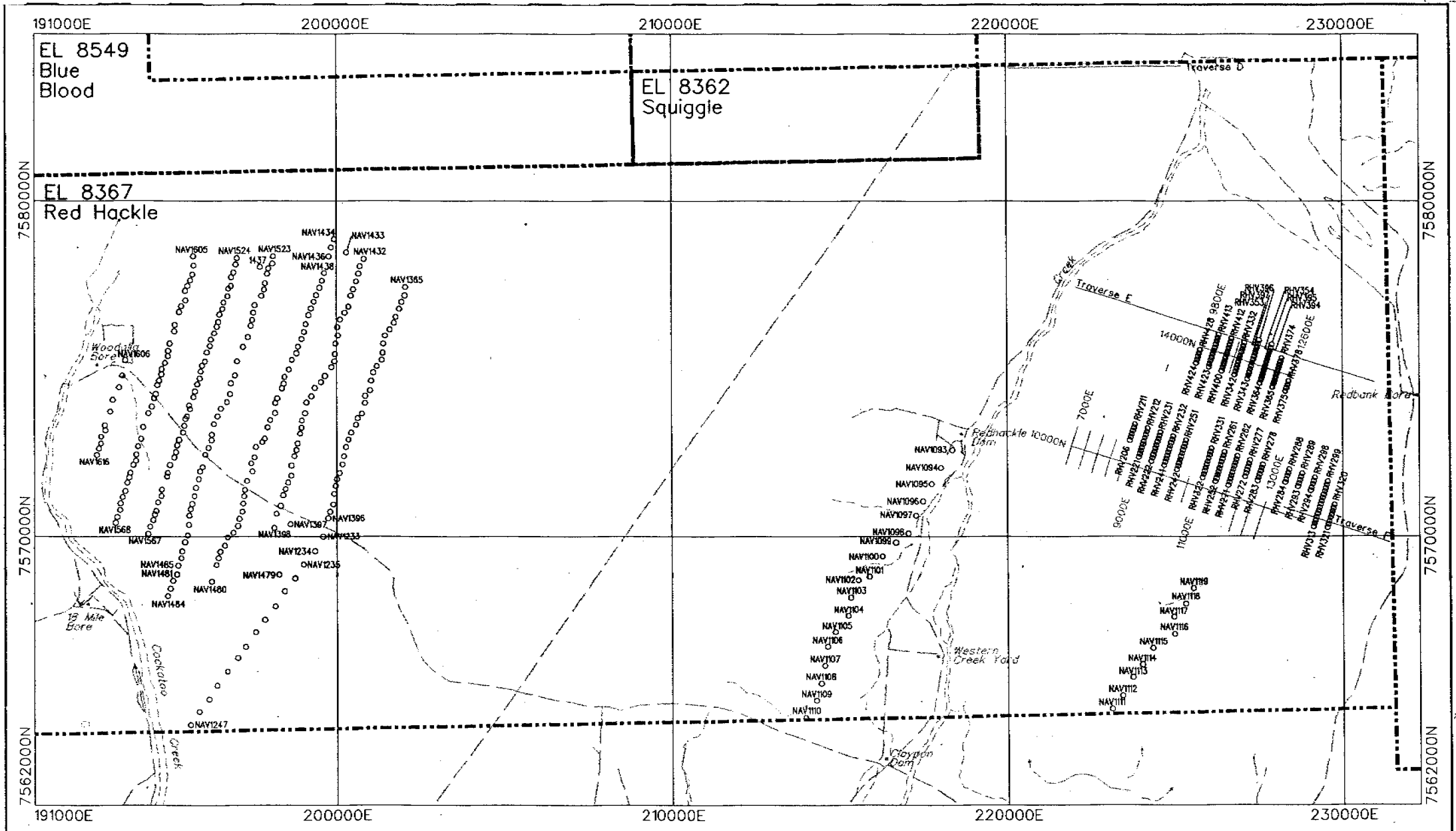
North Flinders Mines Limited

North Flinders Mines

EL 8367 RED HACKLE
RECONNAISSANCE LAG SAMPLE LOCATIONS AT BAYSTONE BORE

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 18

../general/rpt171.dgn



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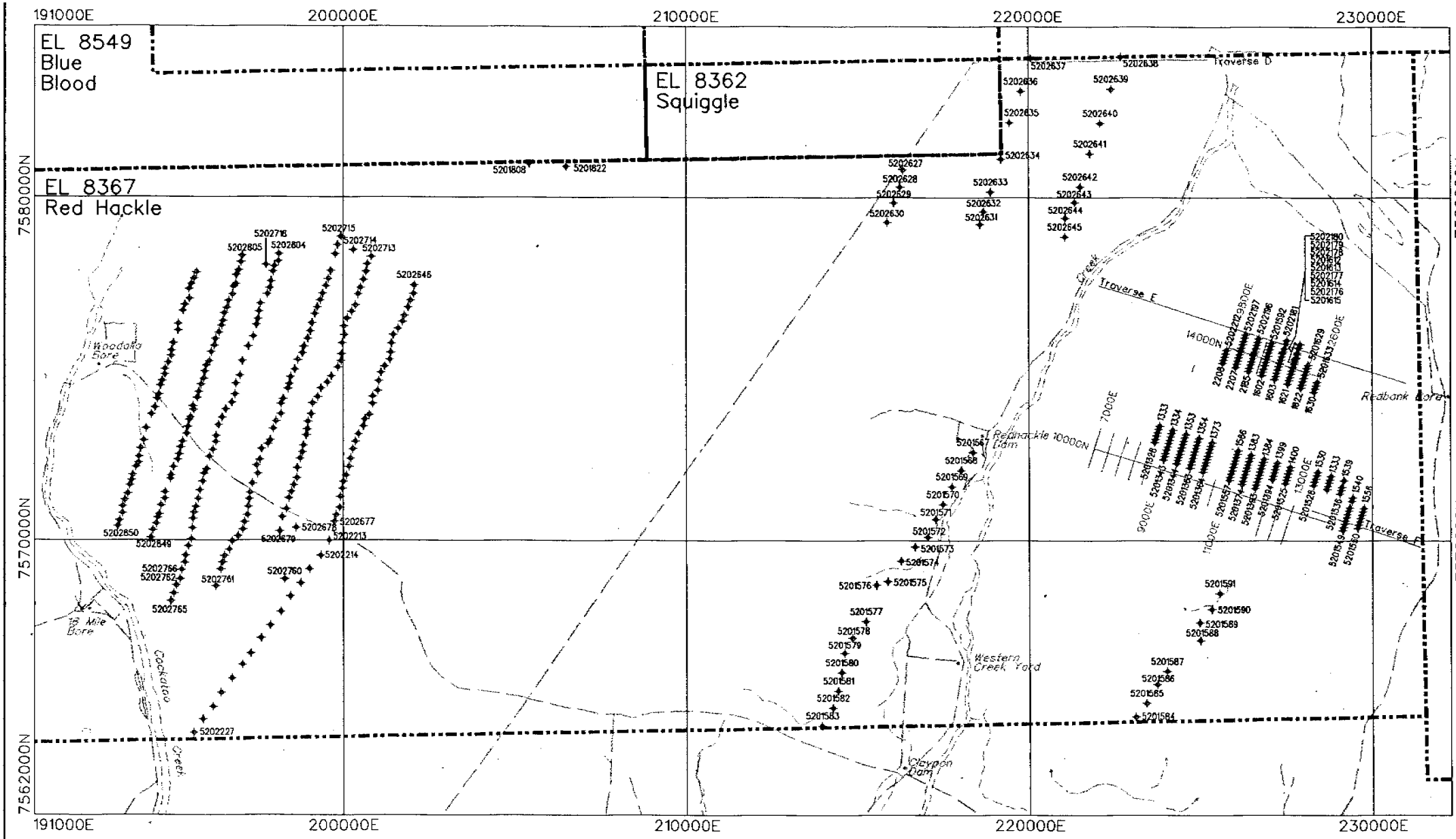
EL 8367 RED HACKLE

VACUUM DRILLHOLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 19

../general/rpt171.dgn



0 5000
metres

5201583 VBCL SAMPLE

North Flinders Mines Limited

North Flinders Mines

EL 8367 RED HACKLE
VACUUM DRILLHOLE
BLEG SAMPLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 20

../general/rpt171.dgn

10.1.4 Reconnaissance Vacuum Drilling - Woodalla Bore

This second phase of reconnaissance vacuum drilling was carried out at intervals of 200 metres along lines spaced 1 kilometre apart, though in areas of deep cover the distance between holes was extended to 400 metres. A total of 252 holes (NAV1365 to 1616) were drilled. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 19 &20 and analytical results appear in Appendix 2.

A single sample was collected from the Woodalla area for petrological investigation (NWA-058). The sample site is located on Figure 27 and the consultant's description is provided in Appendix 1.

The drilling successfully defined the lithologies lying under cover. These are Lander Rock Beds to the north, associated with granitoids, and an area of arkosic sandstone / biotite-muscovite-sillimanite-quartz pelitic schist to the south (refer to petrology sample NWA-058). Bedrock gold values ranged up to 4ppb Au and BLEG results reached 4.9ppb Au, but with no obvious pattern to the anomalism.

10.1.5 Reconnaissance Vacuum Drilling - Flightpath Hills

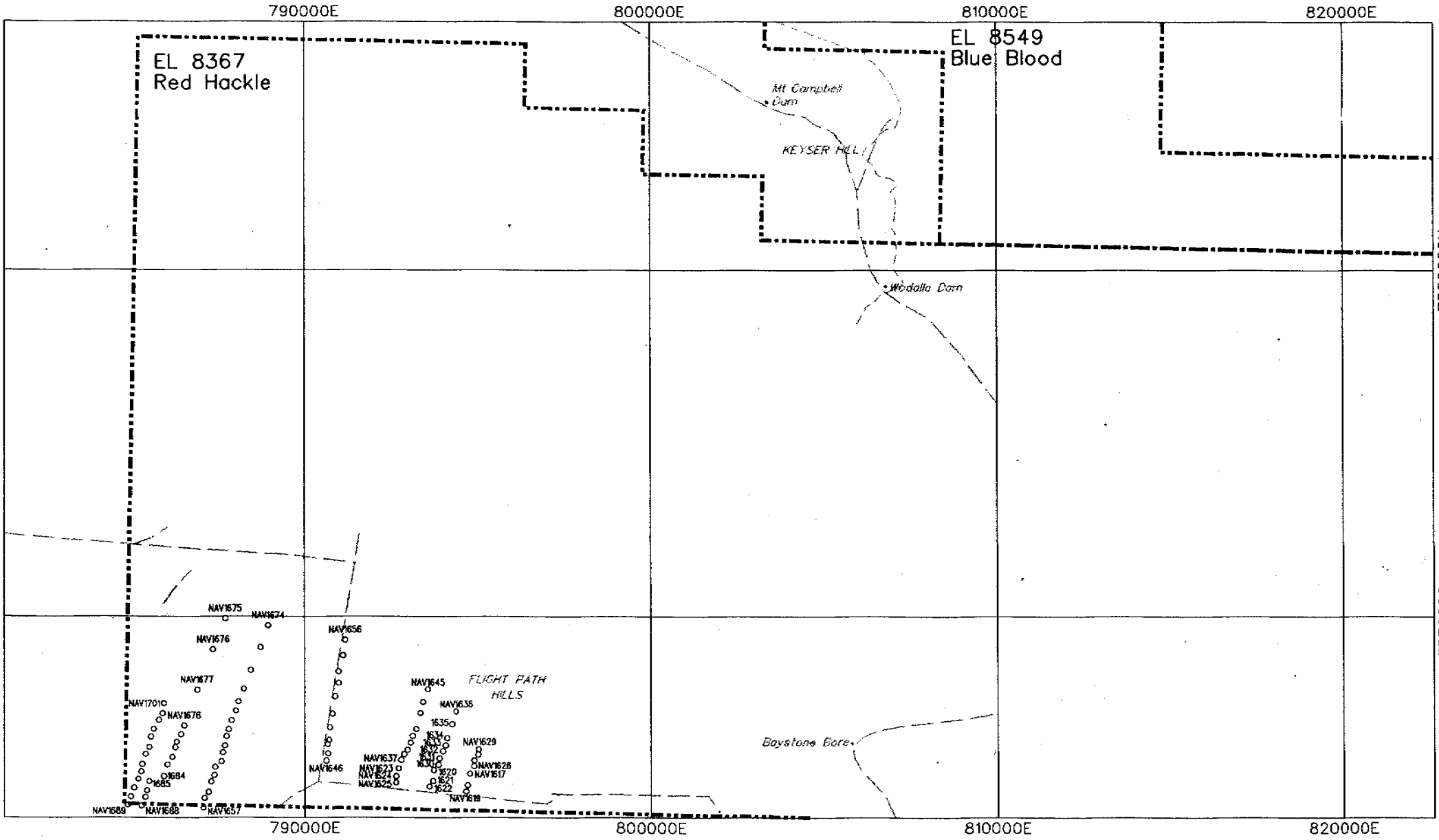
As at Woodalla Bore, the second phase of reconnaissance vacuum drilling was carried out at intervals of 200 metres along lines spaced 1 kilometre apart, though in areas of deep cover the distance between holes was extended to 400 metres. A total of 85 holes (NAV1617 to 1701) were drilled on traverses BF1 and BF2. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 21 & 22 and analytical results appear in Appendix 2.

Relatively fresh bedrock occurs at shallow depths (less than 2 metres) in the south of the area, but this becomes suddenly much deeper to the north (greater than 18 metres). Medium grained biotite granite with minor biotite-sericite schist was drilled in the east and pelitic schists were more commonly encountered in the west. Dolerite was only located in two drill holes. Disappointing results showed BLEG values ranging up to only 1.2ppb Au and bedrock samples reaching just 2ppb Au and 10ppm As.

10.1.6 Reconnaissance RAB Drilling - Blue Blood Anomaly Extensions

A reconnaissance drilling programme of vertical RAB holes to test BLEG gold anomalism located in regolith was completed. The area covered EL8459 (Blue Blood), EL8362 (Squiggle) and the northeast corner of EL8367 (Red Hackle), though only EL8459 and EL8367 were drilled in this reporting period. The depth to bedrock precluded use of a vacuum drill. 21 vertical RAB holes were drilled in EL8367 (NAB222 and NAB236 to 255). It should be noted that NAB222 and NAB236 each occur on extensions of two traverses located primarily in EL8549 (see Section 11.1.1). A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 20 & 23 and analytical results appear in Appendix 2.

Few of the holes reached identifiable bedrock which lies more than 60 metres from surface. The few bedrock intersections encountered were of deeply weathered saprolitic granite. No anomalous results were returned.



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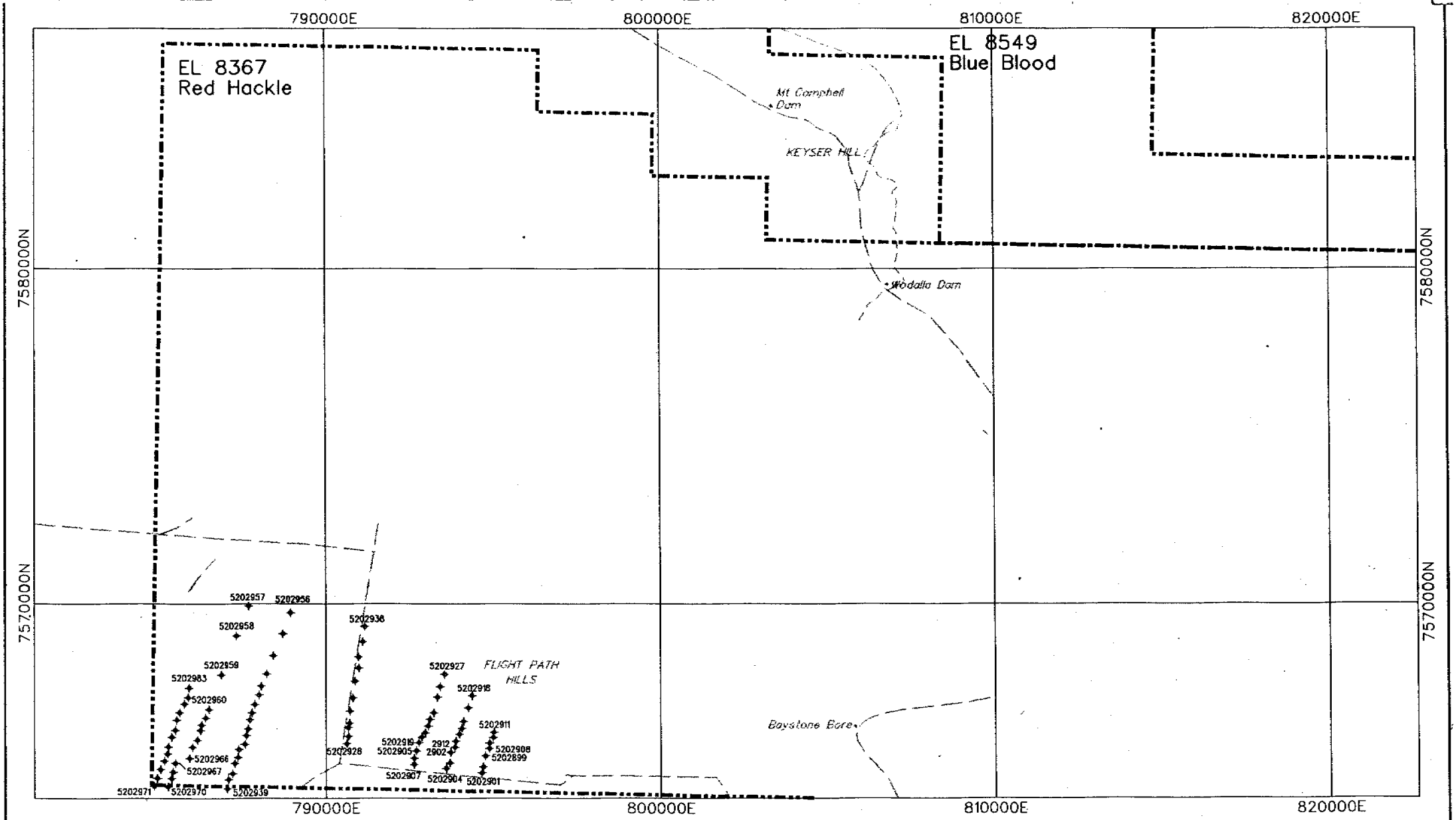
EL 8367 RED HACKLE

FLIGHT PATH HILLS VACUUM DRILLHOLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 21

../general/rpt171.dgn



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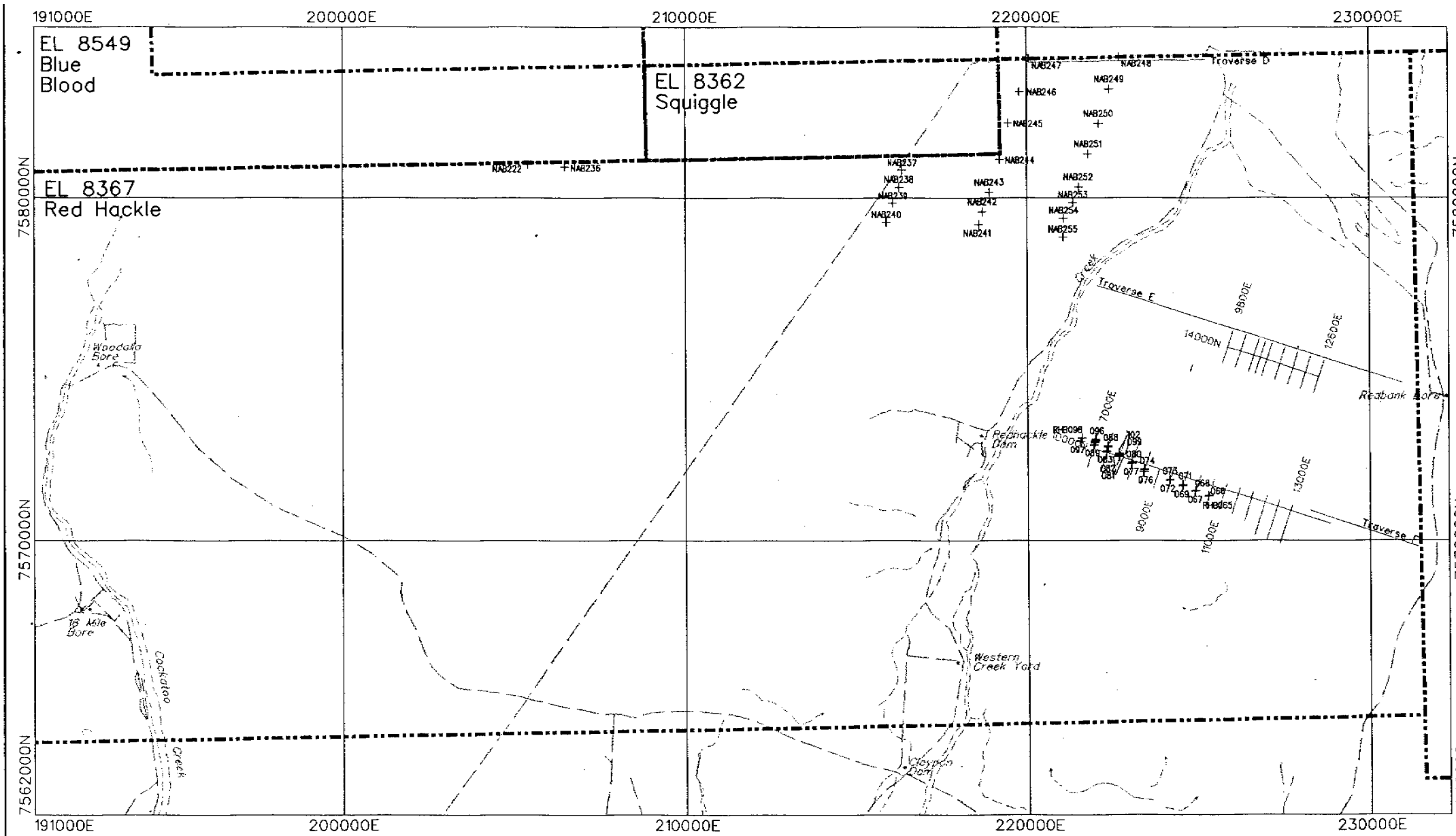
EL 8367 RED HACKLE

FLIGHT PATH HILLS VACUUM DRILLHOLE BLEG SAMPLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 22

../general/rpt171.dgn



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EL 8367 RED HACKLE
BLUE BLOOD AND RED HACKLE RIDGE
RAB DRILLHOLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 150,000	Figure 23

../general/rpt171.dgn

Table 8 : EL8367 (Red Hackle) - Reconnaissance Vacuum / RAB Drilling and Sampling Data

Location	Drill Hole Numbers	Total Drill Holes	Total Meters Drilled	Total Bedrock Samples	Total Colluvium (BLEG) Samples
Sth Giles Range Fault Zone - Vacuum Drilling	NAV1093 - 1119 NAV1233 - 1247	42	171.0	43	40
Woodall Bore - Second Phase Vacuum Drilling	NAV1365 - 1616	252	2031.6	233	253
Flightpath Hills - Second Phase Vacuum Drilling	NAV1617 - 1701	85	698.6	58	85
Blue Blood Anmly Extensions - Vertical RAB Drilling	NAB222 NAB236 - 255	21	1190.0	14	21

10.2 Follow Up Exploration - Red Hackle Ridge Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 9 or 10 below for statistics.

10.2.1 Gridding

Further work on the Red Hackle Ridge prospect necessitated extensions to existing grid. 0.8 line kilometres was added to the baseline and 13.3 line kilometres was added to crosslines spaced 400m apart and pegged every 50m.

10.2.2 Vacuum Drilling

The grid extensions described above facilitated vacuum drilling over two areas of identified lag anomalism and one area of elevated bedrock values. 126 vacuum holes (RHV206 to RHV331) were drilled on 400m x 100m centres. A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) and the standard multielement suite (ALS method 587). Sample sites are located on Figures 19 & 20 and analytical results appear in Appendix 2.

Bedrock was found to be only about three metres below surface at the east and west lag anomalies, though a large palaeodrainage channel was located immediately north and east of the ridge. Lithologies below cover in this area are pelitic and psammitic schists, sandstone and minor dolerite. BLEG and bedrock gold assays were disappointing, with the highest value being a BLEG gold analysis of 5ppb Au. Bedrock arsenic results were as high as 366ppm, confirming *original lag anomalism.*

10.2.3 RAB Drilling

Short traverses of overlapping inclined RAB holes were drilled on the Red Hackle Ridge targeting a feature known as the Smoking Gun Fault. 38 holes (RHB065 to RHB102) were drilled for a total of 1575m. Composite samples were collected over the first four metres, and every three metres thereafter. Each interval was assayed for gold (ALS method PM204), arsenic (ALS method G004) plus bismuth and copper (ALS method G102). Sample sites are located on Figure 23 and analytical results appear in Appendix 2.

The fault was marked by a well developed halo showing chloritic, limonitic, sulphidic, hematitic, silicic and sericitic alteration, with associated brecciation, banding and bleaching. Gold content remained low, reaching a maximum of 189ppb over three metres. Arsenic values were high, with RHB074 on line 8600E returning 33m @ 1997ppm As.

10.3 Follow Up Exploration - Red Hackle Dam Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 9 or 10 below for statistics.

10.3.1 Composite Rock Chip Sampling

15 additional composite rock chip samples of lateritic material were collected from the vicinity of the Red Hackle Dam prospect (sample numbers 5100810 to 5100815 and 5100832 to 5100840). These were analysed for gold (ALS method 204) and for a standard multielement suite (ALS method 587). Sample sites are located on Figure 17 and analytical results appear in Appendix 2.

Peak assays of 50ppb Au and 841ppm As were received from this small suite of samples. Investigation showed that quartz vein material within the laterite contained the gold.

10.3.2 Petrological Study

Two samples were collected from the Red Hackle Dam area for petrological investigation (NWA-056 & NWA-067). Sample sites are located on Figure27 and the consultant's descriptions are provided in Appendix 1.

10.4 Follow Up Exploration - Red Handed Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 9 or 10 below for statistics.

10.4.1 Gridding

2.8 line km of surveyed baselinewas established. Crosslines were put in at 400 metre intervals along the baseline with a peg placed every 50 metres.

10.4.2 Vacuum Drilling

Vacuum drilling was undertaken at 100 metre intervals along the surveyed traverses to follow up previously identified regolith and bedrock anomalism. 97 vertical holes (RHV332 to RHV428) were drilled. Generally a regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) and the standard multielement suite (ALS method 587). The VBCL sampling was omitted from holes RHV352 to 354, RHV373 to 374, RHV379 to 390, RHV392 and RHV403. Sample sites are located on Figures 19 & 20 and analytical results appear in Appendix 2.

Drilling indicated a depth to bedrock of approximately 3 metres over the southern part of the grid, with a 'step down' to approximately 18 metres in the northern section. Bedrock was found to be sandstone and psammitic schist with minor pegmatite,dolerite and graphitic schist. Zones of intense quartz veining,chloritic and phylllic alteration were observed. Bedrock gold anomalism is well defined on sections of the grid (peak value 150ppb) and these areas are coincident with the best BLEG results.

10.5 Follow Up Exploration - Tall Ships Prospect

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 9 or 10 below for statistics.

10.5.1 Lag Sampling

An area of scree was lag sampled around a quartz/sulphide veined outcrop adjacent to the Giles Range Fault Zone. Material was sourced from locations about 100 metres apart. 22 samples (500938 to 500959) of sieved fragments from the -7mm +2mm size fraction were collected. The samples were analysed for gold (Genalysis method B/ETA), silver (Genalysis method B/AAS), copper, iron and zinc (Genalysis method B/AAS) and arsenic, bismuth, cobalt, lead, antimony, tin, uranium, and tungsten Genalysis method A/MS). Sample sites are located on Figure 24 and analytical results appear in Appendix 2.

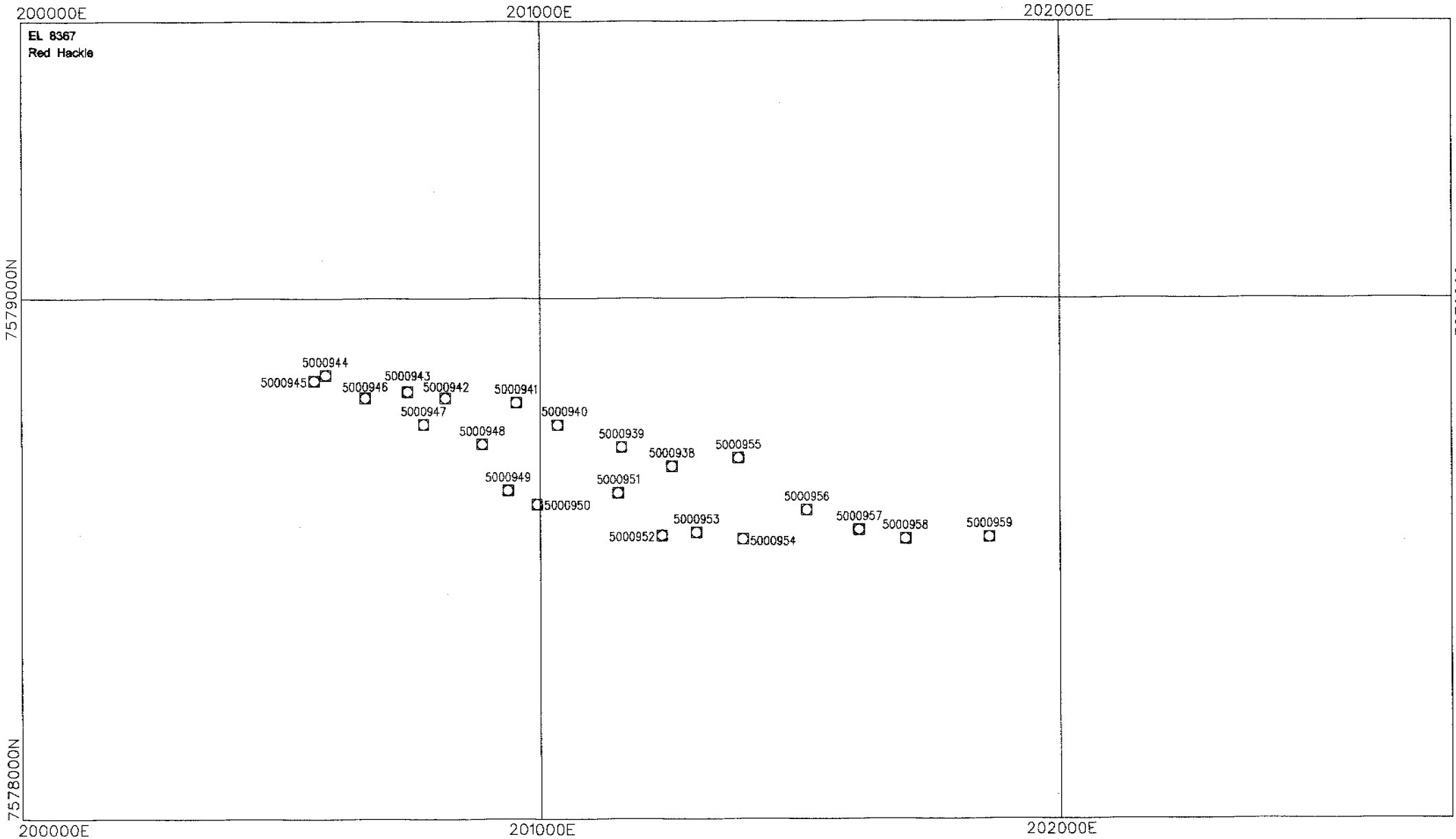
Assay results were not significantly anomalous in any elements.

Table 9 : EL 8367 (Red Hackle) - Follow Up Reconnaissance Sampling

Sample Type / Location / Code	Samples Collected	Sample Numbers
Composite Rock Chip - Red Hackle Dam CRC	15	5100810 - 5100815 5100832 - 5100840
Lag - Tall Ships LAG	22	5000938 - 5000959

Table 10: EL 8367 (Red Hackle) - Follow Up Drill Hole and Sampling Data

Location	Drill Hole Numbers	Total Drill Holes	Total Metres Drilled	Total Bedrock Samples	Total Colluvium (BLEG) Samples
Red Hackle Ridge - Vacuum Drilling	RHV206-331	126	860.0	123	119
Red Hackle Ridge - Angled RAB Drilling	RHB065 - 102	38	1573.0	516	None
Red Handed - Vacuum Drilling	RHV332-428	97	888.7	111	79



0 500

metres

5000959 LAG SAMPLE

North Flinders Mines Limited

North Flinders Mines

EL 8367 RED HACKLE
TALL SHIPS
LAG SAMPLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 10,000	Figure 24

../general/rpt171.dgn

11. WORK UNDERTAKEN - EL8549 BLUE BLOOD

Refer to Section 7.1 for sampling methodology, Section 7.2 for analytical data and Table 11 below for statistics.

11.1 Reconnaissance Exploration

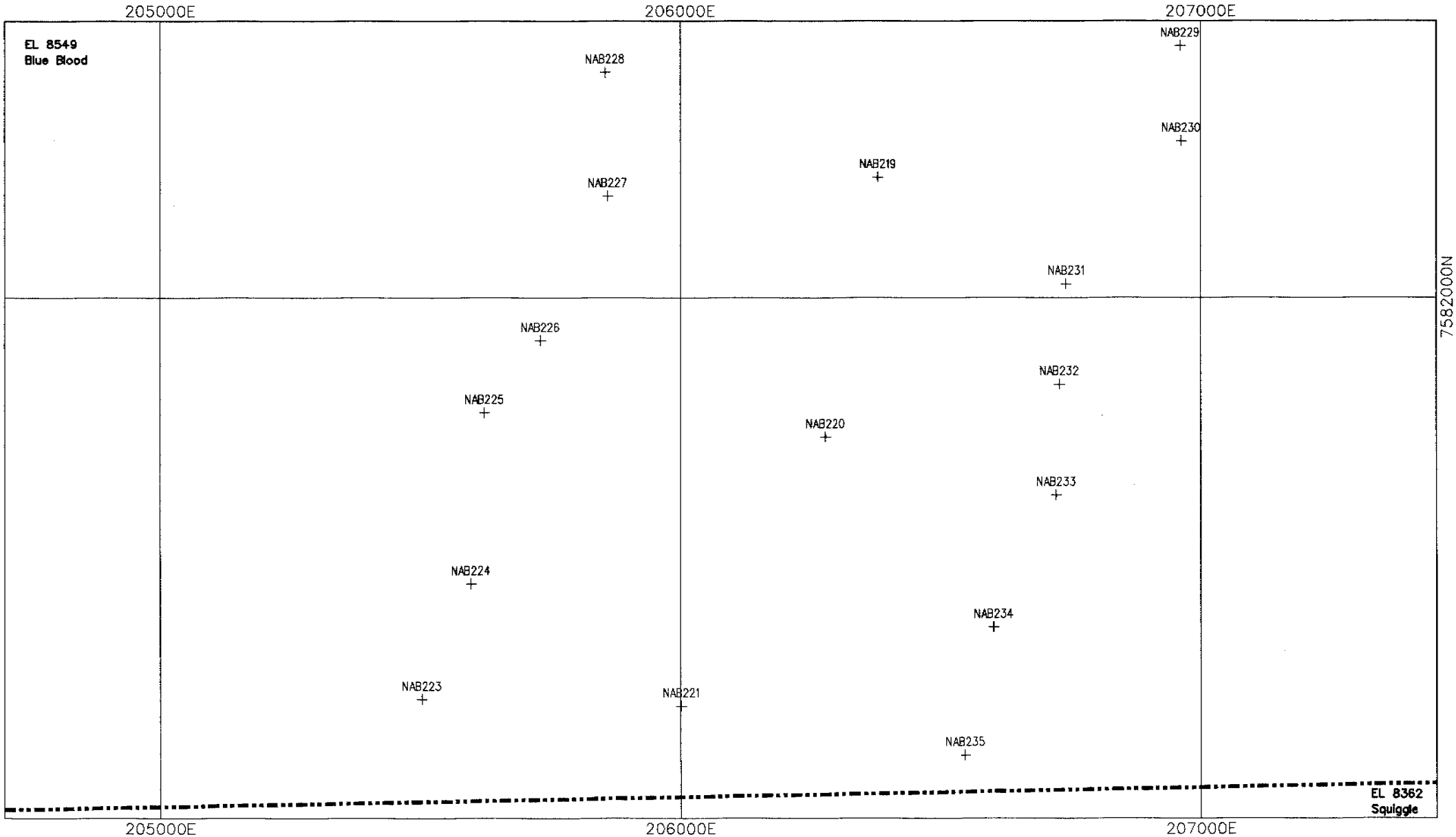
11.1.1 Reconnaissance RAB Drilling - Blue Blood Anomaly Extensions

A reconnaissance drilling programme of vertical RAB holes to test BLEG gold anomalism located in regolith was completed. The area covered EL8459 (Blue Blood), EL8362 (Squiggle) and the northeast corner of EL8367 (Red Hackle), though only EL8459 and EL8367 were drilled in this reporting period. The depth to bedrock precluded use of a vacuum drill. 16 vertical RAB holes were drilled in EL8549 (NAB219 to 221 and NAB223 to 235). A regolith sample for bulk cyanide leach (VBCL) was collected from each hole (Genalysis assay methods CN4/A and CN4/E), together with a bottom of hole assay sample for gold (ALS method 204) plus standard multielement suite (ALS method 587). Sample sites are located on Figures 25 & 26 and analytical results appear in Appendix 2.

Drilling confirmed that the area is underlain by Lander Rock Beds beneath deep transported cover. A distinct stoneline in the regolith immediately above bedrock provided an excellent medium for BLEG sampling. No gold anomalous results were returned though the easternmost line returned bedrock arsenic anomalism to 155ppm As.

Table 11 : EL8549 (Blue Blood) - Reconnaissance RAB Drilling and Sampling Data

Location	Drill Hole Numbers	Total Drill Holes	Total Metres Drilled	Total Bedrock Samples	Total Colluvium (BLEG) Samples
Blue Blood Anmly Extensions - Vertical RAB Drilling	NAB219 - 221 NAB223 - 235	16	659	27	16



0 500

metres

NAB230 + RAB DRILLING

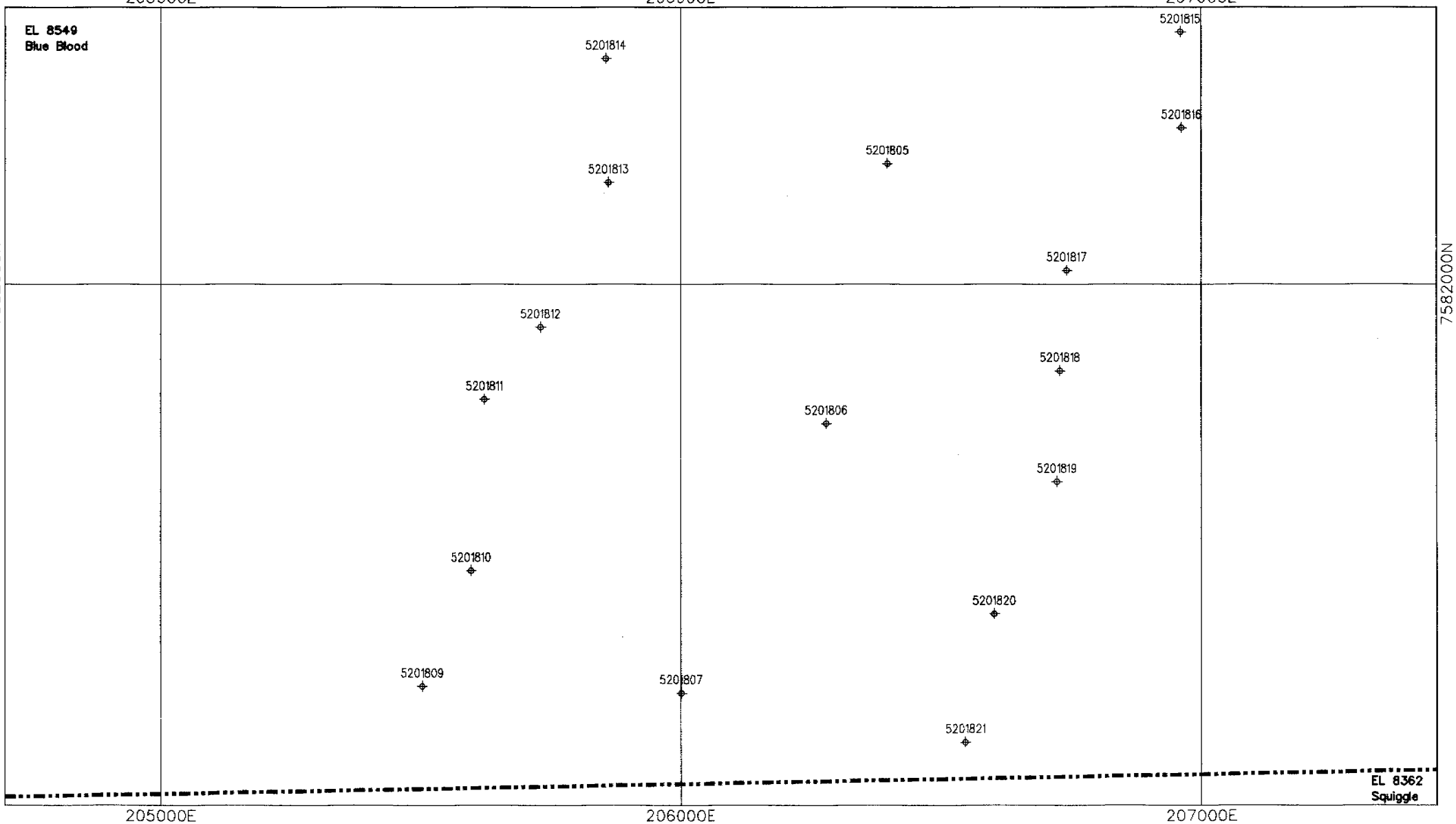
North Flinders Mines Limited

North Flinders Mines

EL 8549 BLUE BLOOD
VERTICAL RAB
DRILLHOLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 10,000	Figure 25

../general/rpt171.dgn



0 500

metres

5201815 VBCL SAMPLING

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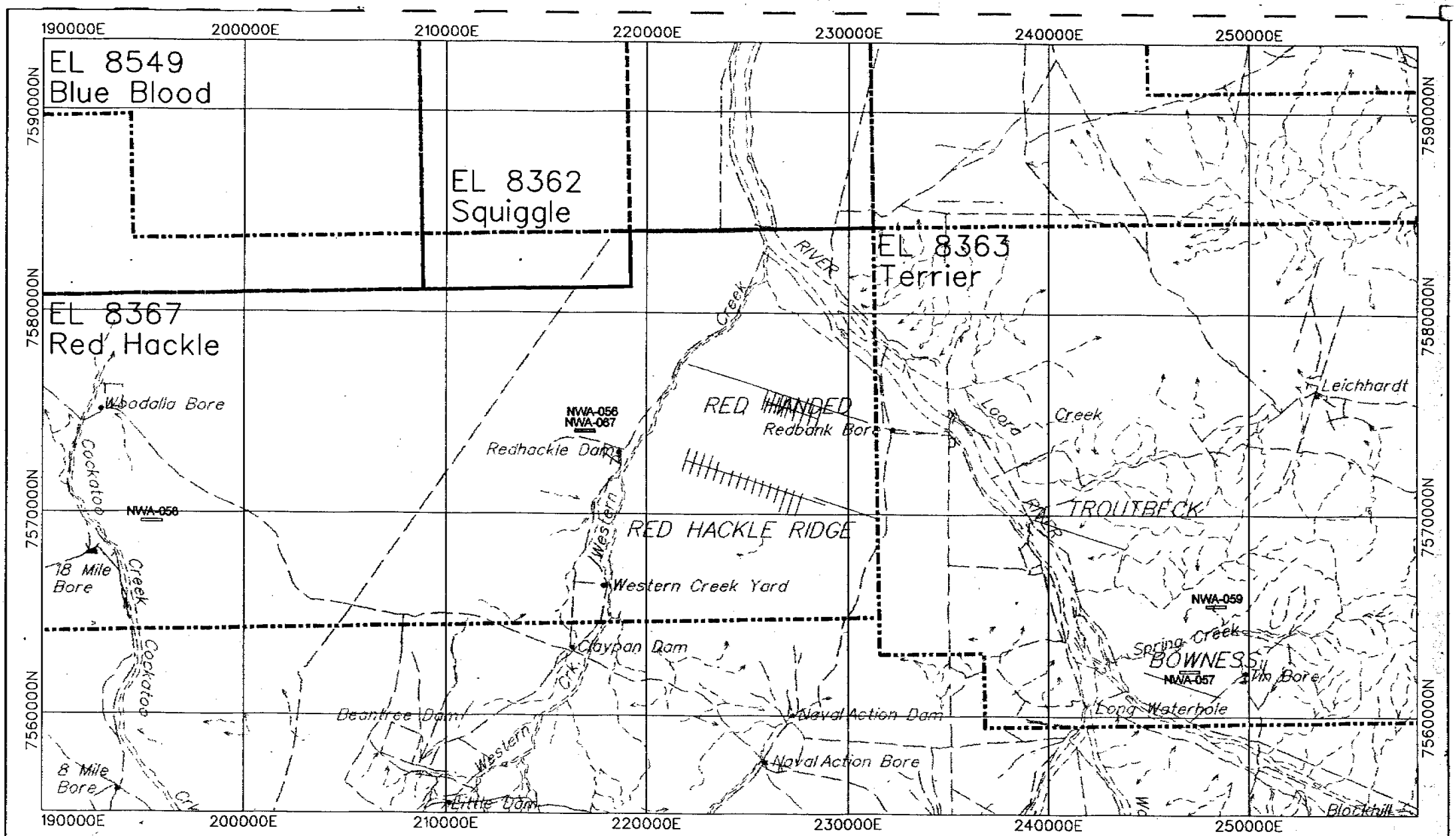
EL 8549 BLUE BLOOD

VERTICAL RAB DRILLHOLE BLEG SAMPLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 10,000	Figure 26

../general/rpt171.dgn


190000E
200000E
210000E
220000E
230000E
240000E
250000E
7590000N
7580000N
7570000N
7560000N
EL 8549
Blue Blood
EL 8362
Squiggle
EL 8363
Terrier
EL 8367
Red Hackle
RIVER
Creek
Woodalla Bore
NWA-056
NWA-057
Redhackle Dam
RED HANDED
Redbank Bore
Loora
Creek
Leichhardt
Cockatoo
NWA-056
TROUTBECK
RED HACKLE RIDGE
Western
18 Mile
Bore
Creek
Western Creek Yard
NWA-059
Claypan Dam
Spring
Creek
BOWNESS
NWA-057
Win Bore
Cockatoo
Beantree Dam
Western
Crk
Naval Action Dam
Long Waterhole
Naval Action Bore
8 Mile
Bore
Little Dam
Blockhill
0
500
metres
NWA-058
Petrology Sample
North Flinders
Mines Limited
North Flinders Mines
EL 8367 RED HACKLE & EL 8363 TERRIER
PETROLOGICAL SAMPLE LOCATION PLAN
Data By : NFM
FEBRUARY 97
Scale 1 : 250,000
Figure 27
../general/rpt 171.dgn

12. EXPENDITURE INCURRED FOR THE REPORTING PERIOD TO FEBRUARY 1997

Table 12 : Northwest Aruntas, Lander River Project Area - Details of Exploration Expenditure for Reporting Period to February 1997.

Cost Centre / EL Expenditure	TOTAL	EL 8362	EL 8363	EL 8367	EL 8549
Salary + Wages	432,201	0	259,723	153,219	19,259
General Reconnaissance	47,933	0	43,069	4,864	0
Geophysics	0	0	0	0	0
Remote Sensing & Air Photography	0	0	0	0	0
RAB & Vacuum Drilling *	156,242	0	77,491	69,236	9,515
Diamond Drilling*	0	0	0	0	0
Technical Support**	9,394	0	7,781	1,613	0
Field Services ***	76,604	0	46,034	27,157	3,413
Admin Services ****	108,253	0	65,052	38,377	4,824
TOTAL	**830,627**	**0**	**499,150**	**294,466**	**37,011**
COVENANT	**335,000**	**15,000**	**150,000**	**150,000**	**20,000**

Notes:

* Drilling expenditures include assays.

** Technical support includes contract drafting, survey, access, petrology, etc.

*** Field Services includes the cost of maintaining field camps and equipment, etc.

**** Administration services includes the cost of computer data management, in-house drafting and general administration.

As some prospects extend across EL boundaries within the Project Area, and all are serviced from a centralised exploration base and facilities, most of the above expenditure allocations are derived in part by apportionment, based on the distribution of work on each EL.

13. PROPOSED WORK

13.1 EL8362 (SQUIGGLE)

Only four blocks of EL8362 will remain within the area applied for under SEL9795. Although first pass reconnaissance exploration has been completed across the tenement without positive results, the remaining portion of EL8362 held within the SEL will be covered by a project-wide regional geophysical interpretation which will be integrated with knowledge of bedrock lithologies established by reconnaissance drilling programmes. Conceptual targets generated by this study will be drill tested.

A review of earlier drilling results has indicated that targets have not been adequately tested and some redrilling may be undertaken.

13.2 EL8363 (TERRIER)

The regional geophysical interpretation of the area remaining within the SEL application (described above) will also be undertaken over EL8363.

Other exploration on the tenement will :-

- Advance the Bowness prospect by carrying out more vacuum/RAB drilling to define bedrock anomalism more accurately.
- Advance the Troutbeck prospect by additional costeaning and RAB drilling so that lateral and vertical continuity of mineralisation can be demonstrated at Trout 1. Similar programmes will progress delineation of the anomalism at Trout 2 and Trout 3 to a stage where potentially economic mineralisation is indicated.
- Advance the Black Knight prospect by better defining the continuity and extent of mineralisation within the shear zone. Techniques likely to be utilised include further rock chip sampling, mapping and soil sampling.
- Similar programmes will be employed to define the Tin Bore and other stream sediment drainage anomalies. Further stream sediment sampling and rock chip sampling may also be undertaken.

13.3 EL8367 (RED HACKLE)

The regional geophysical interpretation of the area remaining within the SEL application (described above) will also be undertaken over EL8367.

Other exploration on the tenement will utilise detailed vacuum drilling and/or RAB drilling to further delineate areas of anomalism at Red Handed and Red Hackle Dam.

13.4 EL8549 (BLUE BLOOD)

The regional geophysical interpretation of the area remaining within the SEL application (described above) will also be undertaken over EL8549.

Further drilling will also be necessary to delineate the BLEG gold anomalism encountered within EL8549.

Minimum expenditure on the exploration licences will be:-

EL 8362 (Squiggle)	$15,000
EL 8363 (Terrier)	$90,400
EL 8367 (Red Hackle)	$30,000
EL 8549 (Blue Blood)	$15,000
TOTAL	**$150,400**

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APPENDIX 1

PETROLOGICAL REPORT

PONTIFEX AND ASSOCIATES REPORT NO. 7256

Pontifex & Associates Pty. Ltd.

TELEPHONE (08) 332 6744
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26 KENSINGTON ROAD, ROSE PARK
SOUTH AUSTRALIA 5067
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P.O. BOX 91, KENT TOWN
SOUTH AUSTRALIA 5071

MINERALOGICAL REPORT NO. 7256

by A.C. Purvis, PhD

November 21st, 1996

TO :

Mr Andrew Wurst
North Flinders Mines Ltd
24 Greenhill Rd
WAYVILLE SA 5034

COPY TO :

Mr Duncan Archibald
North Flinders Mines Ltd
24 Greenhill Rd
WAYVILLE SA 5034

YOUR REFERENCE : Order No. 29457

MATERIAL : 12 Rock speciments

IDENTIFICATION : NWA056 - NWA067

WORK REQUESTED : Thin section preparation, petrographic description and report, with comments as specified.

SAMPLES & SECTIONS : Returned to you with this report.

PONTIFEX & ASSOCIATES PTY. LTD.

SUMMARY COMMENTS

This report discusses twelve rock specimens from the Arunta Inlier in the Northern Territory. Five of these samples are from relatively widely spaced localities, but seven (NWA-060 to 066 inclusive) are from a small area some 400 m north-south by 200 metres east-west, including the Black Knight prospect and part of the Yundurbulu Range. A second sample labelled Yundurbulu Range is from a locality some 4 km south of the Black Knight area, however.

There are two samples from **Red Hackle Dam**, which include a weathered granodiorite gneiss (NWA-056) as a low-temperature hydrothermal quartz-rich rock with disseminated microspherulitic pyrite (NWA-067). The gneiss is possibly amphibolite facies but has been altered and weathered.

A single sample from **Bowness** (NWA-057) is a weathered quartz-muscovite-biotite schist with sericite apparently after andalusite porphyroblasts which seem to have been slightly rotated, have biotite-rich 'eyebrows' and seem to be syntectonic.

A further single sample from **Wodalla** (NWA-058) is also a weathered quartz-muscovite-biotite schist but is much more quartz-rich than NWA-057 and probably represents a metasandstone. It has some minor fibrolitic sillimanite and may have been metamorphosed to low amphibolite facies.

The most southerly sample labelled **Yundurbulu Range** (NWA-059) is a quartz-sericite-chlorite-rutile rock with sericite apparently after cordierite, and seems to represent a pelitic hornfels similar to NWA-060, from the Black Knight portion of the Yundurbulu Range.

The samples from the **Black Knight** prospect (see map, attached) include a microcline-cordierite-biotite-quartz hornfels (NWA-060) of high amphibolite or hornblende hornfels facies, and a related strongly sericitised rock (NWA-061), which is closely similar to NWA-059. These again seem to represent normal to potassic pelites. Samples NWA-062 to 064 and 066 seem to be metamorphosed quartz-rich greywackes with sericite partly after plagioclase as well as biotite and muscovite. Sample NWA-064 has minor microcline, and disseminated arsenopyrite of authigenic/metamorphic origin. Some quartz veins occur in NWA-064 and 066, with an apparently sericite-rich envelope in NWA-064. Sample NWA-066 is schistose, with a crenulation cleavage and boudinaged quartz veins probably

formed together with the first schistosity in the rock, whereas the other samples of metasandstone seem to be hornfelses. The more hornfelsic rocks may have suffered low amphibolite/hornblende hornfels facies metamorphism, compared with greenschist facies in NWA-066. Sample NWA-065, a schistose metasiltstone to metapelite, also seems to have suffered greenschist facies metamorphism.

It seems that some contact metamorphism is evident in the Black Knight-Yundurbulu Range area with some regional metamorphism also in this area and in the more widely spaced samples. Greywacke, siltstone and shale, as well as early granitoids are represented.

Black Knight

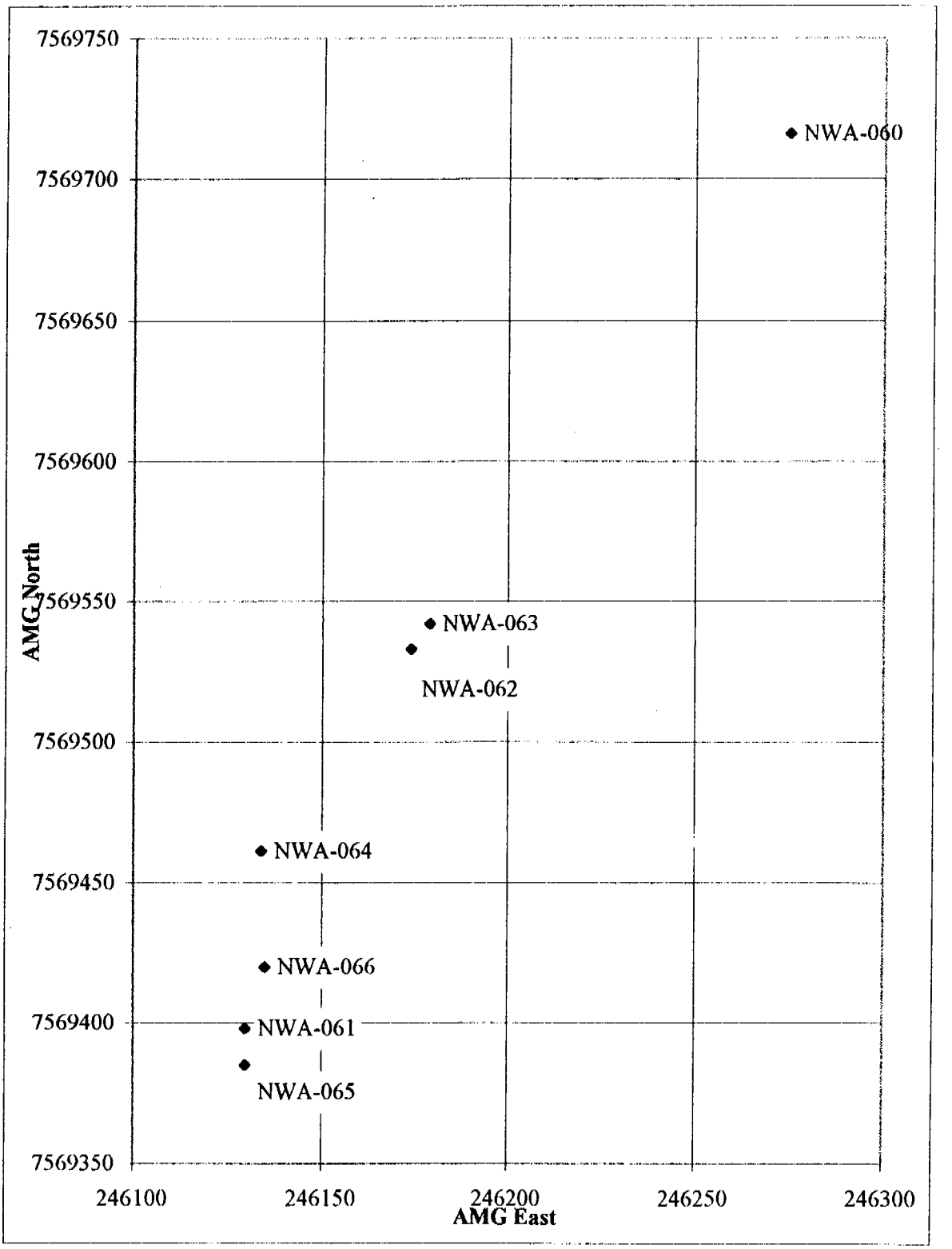


Fig. 1: Map of Black Knight prospect showing locations of samples described in Report No. 7256

INDIVIDUAL DESCRIPTIONS

NWA-056
216980 E, 7574150 N

Weathered and possibly retrogressed former augen gneiss derived from a granitoid, with augen formerly felspar, quartz and biotite. Now composed of quartz, clays, sericite to fine muscovite, and accessory opaque oxide.

Field Note: Red Hackle Dam, E.L. 8367 (Red Hackle).
Quartz-sericite-chlorite rock. What is the rocks mineralogical composition (give percentages) and texture?
What is the metamorphic grade?
What type of alteration is present?
Are the fine agglomerations of sericite an alteration product?
What is the groundmass composed of (give in percentages)/

Original Mineralogy	Vol %
Felspar augen	5%
Quartz augen	7%
Biotite augen	3%
Fine quartz	35%
Fine felspar	50%
Oxide	<1%

The hand-specimen of this sample seems to represent a sheared and retrogressed augen gneiss with felspar and quartz augen in a fine schistose matrix. In thin section, it can be seen that the former felspar augen, to 8 mm long, have been replaced by aggregates of partly shredded decussate sericite to fine muscovite with interstitial kaolin. The quartz augen are polycrystalline and may have been recrystallised, but are up to 15 mm long. There are lenses of shredded biotite aggregates (now probably vermiculite) also with interstitial kaolin, which may represent former augen. The matrix is a former quartzofelspathic micromosaic with most grains from 0.05 to 0.5 mm in size, and with the felspar(s) altered to clays and limonite. Disseminated but sparse small opaque oxide grains are also present, with some alteration to leucoxene.

The original lithology was a granitoid gneiss with quartz and felspar augen. There has been intense weathering and possibly some low-temperature hydrothermal alteration.

NWA-057
247043 E, 7562262 N

Weathered quartz-muscovite-biotite schist with sericitised, apparently syntectonic probable andalusite porphyroblasts, weakly rotated with some biotite as 'eyebrows'.

Field Note: Bowness prospect, EL 8363. Highly foliated biotite-sericite chloritic quartz pelitic schist with prominent biotite porphyroblasts. Occurs at the margin of the Bowness Fault.
What is the mineralogy of the rock?
What is the metamorphic grade?
Are the porphyroblasts a metamorphic feature?
How closely does this compare with the porphyroblasts in NWA-059 and NWA-061?
How does the porphyroblast growth relate to the foliation?

Mineral	Vol %
Quartz	35%
Muscovite	55-60%
?Andalusite	1-2%
Biotite	5-7%

In hand-specimen, this is a brown weathered schist with some paler porphyroblasts visible on the cut surface. In thin section it is seen to be a well-foliated quartz-muscovite-biotite schist with grains 0.3 mm in length. There are sparse totally sericitised porphyroblasts, which seem to have been andalusite, and are totally altered to sericite ± muscovite ± biotite, with rare poikilitic inclusions of quartz. These seem to be syntectonic with some rotation and also some biotite-rich 'eyebrows' formed by late compaction solution at a high angle to the schistosity (i.e. the opposite of pressure shadows).

This is an amphibolite facies metapelite which has little in common with NWA-59 or 61.

NWA-058
195400 E, 7569559 N

Weathered quartz-muscovite-biotite schist with minor fresh to sericitised fibrolitic sillimanite, and rare porphyroblasts of muscovite: metasandstone?

Field Note: Wodalla Prospect, EL 8367 (Terrier). Fine-grained highly foliated biotite-limonite-?sillimanite-quartz pelitic schist
What is the metamorphic grade of this rock?
What is its mineralogical composition?
What environment may this rock have been formed i.e. prior to metamorphism?
How does porphyroblast growth relate to the foliation?

Mineral	Vol %
Quartz	80%
Muscovite	7%
Biotite	10%
Sillimanite	3%

This rock seems to be relatively quartz-rich compared with the previous sample, with some possible muscovite porphyroblasts. In thin section, it is seen to be dominated by quartz grains to 1.5 mm long with some inclusions of fibrolitic sillimanite. Between the quartz grains are anastomosing foliae of schistose muscovite, clay-limonite-altered (weathered) biotite and sericite apparently after fibrolitic sillimanite. Some fresh biotite is also evident, and there are muscovite flakes to 1 mm long. The only possible porphyroblasts are muscovite flakes to 4 mm long elongate at about 40° to their cleavage planes. These seem to be post-tectonic and may have postdated the metamorphic peak also. There are rare zircons to 0.1 mm long.

The original lithology was possibly a sandstone, possibly a medium to coarse grained sandstone, judging from the size of the zircon grains. The rock shows amphibolite facies metamorphism as in the previous sample.

NWA-059
248350 E, 7565500 N

Quartz-sericite-chlorite-rutile rock with sericite possibly after cordierite (or andalusite?), suggesting a former magnesian pelite rather than a granitoid.

Field Note: Yundurbulu Ridge, EL 8363. Sericite-quartz-altered granite dyke?
Is this rock of primary granitic composition?
Is this rock altered, if so what sort of alteration?
What is the mineralogy?
Does this rock have any indications of stress, i.e. foliation, deformed quartz crystals?
What is the metamorphic grade of this rock?

Mineral	Vol %
Sericite	75-80%
Quartz	15-20%
Chlorite	3-4%
Rutile	1-2%

This seems to be a massive pale granular, possibly granitic rock with some disseminated apparent muscovite. In thin section, it can be seen to be composed predominantly of totally sericitised poikilitic or poikiloblastic grains to 8 mm in size, with abundant inclusions of granular quartz. There are also disseminated clear to clouded poikiloblastic flakes of chlorite to 1.5 mm long, apparently clinochlore, and patches of decussate fine grained muscovite. The main accessory is rutile to 0.1 mm grainsize, suggesting that the original lithology was poor in Fe and Ca, and therefore that the sericitised grains may have been cordierite or (less probably) andalusite. The clouded chlorite flakes seem to have lamellar leucoxene and may have replaced phlogopite. The original metamorphism was of amphibolite facies with greenschist facies retrogression.

The original lithology seems to have been a magnesian pelite, but this depends on the nature of the sericitised grains. There is no schistosity or other indications of stress and the metamorphism may have a hornfelsic component.

NWA-060
246275 E, 7569716 N

Layered microcline-cordierite-biotite-quartz hornfels with a weak schistosity and disseminated opaque oxide. Metapelite.

Field Note: Yundurbulu Range, EL 8363 (Terrier). Spotted layered biotite, cordierite? A hornfels?
What is the mineralogy of this rock?
What is the metamorphic grade?
Are the porphyroblasts pre, post or syntectonic?
What may the primary rock have been?

Mineral	Vol %
Microcline	60%
Cordierite	25-30%
Biotite	7-8%
Quartz	2-3%
Clays	tr
Oxide	2-3%
Tourmaline	tr

This is a limonite-coated, apparently massive but spotty rock with weak compositional layering. The thin section shows some quartz-rich layers which have been thrown into an asymmetrical fold with an amplitude of about 5 mm on one side of thin section. The rest of the rock is dominated by small poikilitic grains of microcline about 0.4 mm in size, with abundant small inclusions of quartz. There are also diffuse lenses and layers rich in schistose biotite ± clay-altered small grains of uncertain origin. The spots visible in hand-specimen are lenses, to 5 mm wide, of poikiloblastic cordierite grains with a common elongation parallel to the layering, and low-angle grain boundaries. Individual cordierite grains are up to 5 mm or more in length. The lenses may have been originally porphyroblasts, but seem to have been polygonised to recrystallised so that individual grains can no longer be termed porphyroblasts. Accessories include opaque oxide (?ilmenite) and rare green tourmaline. The ilmenite suggests that this rock was originally less magnesian compared with the previous sample. The abundant microcline seems to indicate high potassium in this sample.

The cordierite was apparently recrystallised along with the biotite and microcline and may be syntectonic, although deformation may have been weak. Upper amphibolite/hornblende hornfels facies metamorphism is indicated.

NWA-062
246174 E, 7569533 N

Quartz-biotite-muscovite hornfels apparently derived from quartz-rich greywacke: neither layering nor porphyroblasts observed.

Field Note: Black Knight, EL 8363 (Terrier): Grey-black altered biotite-quartz-cordierite rock with remnant dark and light bands.
What is the mineralogical composition of this rock?
What is the metamorphic grade?
In the layering compositional: does it reflect primary layering or metamorphic layering or both?
How does this layering compare with NWA-060?
Is the spotting and porphyroblastic growth related to metasomatism?
Is the rock altered? What kind of alteration?

Mineral	Vol %
Coarse quartz	35-40%
Fine quartz	35%
Sericite	15-20%
Biotite	10%
Zircon	tr

In hand-specimen, this is a grey, rather massive rock in which no layering is visible. There are poorly defined spots to 4 or 5 mm long, however, in a darker matrix. In thin section there is no layering evident, but there are abundant larger quartz grains, from 0.5 to 2 mm in maximum diameter, in a matrix variously and irregularly rich in decussate biotite or sericite. Smaller quartz grains, mostly 0.1 to 0.3 mm in size, are also common to abundant. There are rare zircon grains to 0.1 mm long.

This rock is similar to some samples of Madigan Beds in the Tanami Inlier, where these are close to small granitoid intrusions, but this sample lacks the detrital muscovite and tourmaline seen in the Madigan Beds. It seems to represent a hornfelsed greywacke or mass-flow arenite, however. As neither layering nor porphyroblasts were seen, many of your questions cannot be answered. Some of the larger single crystal quartz grains seem to define a weak bedding lamination, but not a compositional layering as suggested in your notes. There is no similarity at all with NWA-060, which is dominated by microcline and cordierite, and alteration is not apparent. The metamorphic grade is uncertain (greenschist to low amphibolite/hornblende hornfels).

NWA-063
246179 E, 7567542 N

Quartz-sericite-(muscovite-altered biotite) metasandstone with sericite possibly after plagioclase. Very similar to NWA-060.

Field Note: Black Knight, EL 8363 (Terrier): Massive biotite-quartz-cordierite rock.
What is the mineralogical composition of this rock? Textures?
How does this rock compare with NWA-064-065, 060-062.
What is the metamorphic grade?
Does this rock exhibit any sort of alteration?

Mineral	Vol %
Coarse quartz	30%
Fine quartz	35%
Sericite	25%
Muscovite	3%
Altered biotite	7%
Oxide	tr

This is a similarly grey massive rock to sample NWA-062 and may be a gritty metasandstone. In thin section, it can be seen to be dominated by single crystal quartz grains to 1.5 mm in size (i.e. smaller than in NWA-62) in a quartz-sericite-rich matrix with limonite and clays apparently after biotite, some primary opaque oxide and some coarser metamorphic muscovite to 0.7 mm long. It seems more probable, in this sample, that the sericite has replaced former microgranular felspar, compared with the previous sample, but there is some possibility of the sericite having replaced felspar in that sample also, representing retrograde metasomatism.

Again a quartz-rich greywacke would seem to be the original lithology, with sericitic alteration of a possibly hornblende hornfels/amphibolite facies metamorphic assemblage.

light, although one crystal of arsenopyrite occurs on the margin of the vein. The rock adjacent to the vein seems to be richer in sericite and poorer in microcline than that further away.

The original lithology was a mass-flow arenite and seems to have been metamorphosed to lower amphibolite or hornblende hornfels facies with some retrogression affecting a possible plagioclase component. It is similar to NWA-061-063 but not to NWA-060 It has not been silicified but was originally quartz-rich.

NWA-065
246130 E, 7569385 N

Sericite-quartz-biotite schist with lenses of silt-sized quartz grains and some muscovite porphyroblasts: metamorphosed silty shale of lower metamorphic grade than the previous samples.

Field Note: Black Knight, EL 8363 (Terrier): Sheared biotite-sericite(?) rock.
What is the mineralogy of this rock?
Is this rock altered?
What is the metamorphic grade?
How does this rock compare with NWA 063-064, 066.

Mineral	Vol %
Sericite	80%
Quartz	15%
Altered biotite	5%
Limonite	tr

In hand-specimen, this rock resembles the quartz-muscovite-biotite schist NWA-058, with less abundant limonite and possibly more abundant quartz. In thin section, it is seen to be an irregularly layered, fine grained quartz-muscovite-biotite schist, albeit with very minor biotite relative to muscovite/sericite. It has irregular millimetre-scale layers and lenses relatively rich in quartz to 0.2 mm grainsize (silt to very fine sand), and some lenses and kinked to recrystallised porphyroblasts and aggregates of muscovite ± altered biotite. Small lenses of vein quartz occur in small areas and there are diffuse veins rich in limonite, locally around narrow limonite lined fractures. It is not similar to NWA-063-064 or NWA-066, but could be an interbedded finer-grained silty shale. It seems to have been less highly metamorphosed (to greenschist facies).

NWA-066
246135 E, 7569420 N

Quartz-sericite schist with a crenulation cleavage and a quartz vein parallel to the schistosity but boudinaged by the crenulation cleavage: metasandstone similar to NWA-061-064, but more sheared and of lower metamorphic grade.

Field Note: Black Knight, EL 8363 (Terrier): Sheared quartz-sericite schist with cross cutting quartz vein.
What is the mineralogy of this rock?
Is the rock altered?
What is the metamorphic grade of this rock?
What is the relationship of the quartz vein to the host rock: is there a vein selvedge? Is the vein cross cutting the deformation?

Mineral	Vol %
Quartz	75%
Sericite	20-25%
Limonite	2-3%
Zircon	tr

In hand-specimen, this seems to be a sheared metasandstone, similar to NWA-062-064 but more schistose. In thin section there are abundant largely polycrystalline (recrystallised) quartz grains to 2 mm long in a quartz-sericite schist with a spaced crenulation cleavage. The schistosity resembles S-C fabrics as seen in some granitoid masses in the Tanami Inlier, with spaced sericite-rich lamellae parallel to the crenulation cleavage, and more quartz-rich zones containing the original schistosity (S_1). The quartz vein occurs as lenses to 5 mm wide and was apparently parallel to the first schistosity (S_1), but has been broken into lenses (boudinaged) by the crenulation cleavage (S_2). The quartz lenses in the host rock are also elongate parallel to the schistosity (S_1). The veins have some limonite apparently after pyrite ± carbonate, but no clearly defined selvedge was seen. It is possible that some of the sericite represents alteration, but not necessary. The rock has been metamorphosed to greenschist facies.

NWA-067
216971 E, 7574113 N

Cherty to microspherulitic quartz with microspherulitic to microframboidal pyrite and minor to abundant limonite: probably a rock of low-temperature hydrothermal origin.

Field Note: Red Hackle Dam, EL 8367 (Red Hackle): Silicified quartz-rich sandstone(?) with ironstone hematite-limonite and sulphur coating.
Is there any evidence of primary sulphides?
Is there any evidence of alteration?
What may the primary unweathered rock have been?
Is the silicification due to weathering or primary alteration?

Mineral	Vol %
Quartz	90%
Pyrite	10%
Limonite	<1%
Barite	tr

This rock seems to represent supergene or low-temperature hydrothermal silica with a deep red to yellow limonitic weathering rind and a grey siliceous interior. The thin section shows domains of microcrystalline quartz clouded by microframboidal pyrite, and areas of zoned microspherulitic quartz which may have been originally chalcedony. Two small apparently residual patches of barite occur 4 mm apart, but with the same optical orientation. There are rare crystal-lined very small cavities and the larger cavities seen in the hand-specimen seem to have been formed by leaching, rather than being primary and crystal-lined. The weathering rind is enriched in limonite but has apparently no sulphur evident visibly or by smelling the sample.

The thin section confirms the supergene or, more probably, low-temperature hydrothermal origin of this rock. There may have been no protolith and this rock may be entirely a newly formed product of silica-saturated solutions. The mineralogy above refers to the fresh core, not the limonite-rich rind.

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

Aquifer 1 Bore

Big Bore

Arnic Dam

TROUTBECK

RIDGE

Spring Creek

BOWNESS

LANDER

Long Waterhole

Waterloo

Yuendumu

Blackhill

Blacktellow Creek

RIVER

0 5000
metres

5028096 STREAM SEDIMENT SAMPLE
WITH SAMPLE NUMBER
ABBREVIATED TO READ 8096

CR97/172A1

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER
STREAM SEDIMENT BLEG
SAMPLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 50,000 | Figure 4

../general/rpt171.dgn

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

Leichhardt Bore

Big Bore

TROUTBECK

LEASE 7600N

Spring Creek

Tin Bore

BOWNESS

LANDER

Long Waterhole

1640E

10000N

RIVER

Blacksmith Bore

Blackfellow Creek

Blacksmith

Anzac Dam

5050178 5050179 5050180 5050181 5050177 5050187 5050188 5050192 5050194 5050195 5050196 5050190 5050182 5050183 5050184 5050185 5050186 5050189 5050187

0 5000 metres

5050177 DBCL SAMPLE

CR97/172A

North Flinders Mines

North Flinders Mines Limited

EL 8363 TERRIER
STREAM SEDIMENT BLEG
SAMPLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 50,000 | Figure 5

../general/rpt171.dgn

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

Fleachhaut Bore

Pig Bore

Airport Dam

TROUTBECK

BOWNESS

LANDER

Gordon Hathaway

RIVER

Blackfellow Creek

Blackhill Bore

Blackhill

0 5000
metres

5100763 COMPOSITE ROCK CHIP SAMPLE
WITH SAMPLE NUMBER
ABBREVIATED TO READ 0763

CR97/172A

North Flinders Mines Limited	North Flinders Mines
	EL 8363 TERRIER
	COMPOSITE ROCK CHIP SAMPLE LOCATION PLAN
Data By : NFM	FEBRUARY 97
Scale: 1: 250,000	Figure 6

../general/rpt171.dgn

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

NAV1351 NAV1350 NAV1324 NAV1322 NAV1304 NAV1303 NAV1300 NAV1299 NAV1298 NAV1338 NAV1335 NAV1315 NAV1312 NAV1297 NAV1294 NAV1287 NAV1293 NAV1286 NAV1281 NAV1274 NAV1280 NAV1273 NAV1267 NAV1261 NAV1266 NAV1224 NAV1229 NAV1223 NAV1218 NAV1210 NAV1215 NAV1209 NAV1232 NAV1198 NAV1197 NAV1189 NAV1180 NAV1179 NAV1251 NAV1256 NAV1165 NAV1760 NAV1159 NAV1144 NAV1143 NAV1151 NAV1150 NAV1128 NAV1127 NAV1136 NAV1135 NAV1120 NAV1725 NAV1703S NAV1704 NAV1702O NAV1726 NAV1739 NAV1748 NAV1754

TROUTBECK
BOWNESS
LANCER
Long Waterhole
Spring Creek
Tin Pore
RIVER
Blackhill Pore
Anzac Dam
Access Dam
Blacktellow Creek
Blackhill

Complete rectangle

0 5000 metres

NAV1120 VACUUM DRILLHOLE

CR 97 / 172A

North Flinders Mines

EL 8363 TERRIER
ANZAC DAM AND ACCESS DAM
VACUUM DRILLHOLE LOCATION PLAN

North Flinders Mines Limited

Date: FEBRUARY 97 By: NPEM Scale: 1 : 50,000 Figure 7

../general/rpt171.dgn

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

TROUTBECK
BOWNESS
LANDER
RIVER
Blackhill Bore
Big Bore
Anzac Dam
Blackfellow Creek
Blackhill
Long Waterhole
Th Dam
Gauging Weir
Gauging Abutment

5202455 5202454 5202428 5202426 5202444 5202443 5202440 5202441 5202442 5202439 5202417 5202418 5202408 5202407 5202404 5202402 5202403 5202401 5202398 5202391 5202397 5202390 5202385 5202379 5202384 5202378 5202372 5202366 5202371 5202070 5202075 5202069 5202055 5202066 5202064 5202063 5202062 5202056 5202041 5202055 5202044 5202078 5202077 5202076 5202036 5202043 5202035 5202026 5202025 5202356 5202353 5202018 5202361 5202357 5202010 5202011 5202385 5202382 5202008 5202005 5201997 5201990 5201996 5201989 5201982 5202274 5201973 5201881 5201966

5203007 5203006 5203005 5203004 5203003 5203002 5203001 5203000 5202999 5202998 5202997 5202996 5202995 5202994 5202993 5202992 5202991 5202990 5202989 5202988 5202987 5202985 5202984 5203008 5203016 5203027 5203036

0 5000 metres

5202965 VBCL SAMPLE

CR97/172A

North Flinders Mines

EL 8363 TERRIER
ANZAC DAM AND ACCESS DAM VACUUM
DRILLHOLE BLEG SAMPLE LOCATION PLAN

North Flinders Mines Limited

Data By : NFM	FEBRUARY 97	Scale 1 : 50,000	Figure 8

./general/rpt17f.dgn

EL 8363
Terrier

245000E 250000E 255000E 260000E 265000E 270000E 275000E

7575000N 7570000N 7565000N 7560000N 7555000N

Leichhardt Bore

Elk Bore

Anzac Dam

Blockhill Bore

TROUTBEECK

BOWNESS

LANDER

RIVER

Long Waterhole

Blackfellow Creek

Blockhill

NAB266 NAB264 NAB257 NAB258 NAB262 NAB265 NAB263 NAB256 NAB267 NAB261 NAB260 NAB259

0 5000 metres

NAB251 RAB DRILLHOLE

CR 97 / 172A

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER

ANZAC DAM RAB DRILLHOLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 50,000 | Figure 9

../general/rpt171.dgn

EL 8363
Terrier

238000E 240000E 242000E 244000E 246000E 248000E

7572000N 7570000N 7568000N 7566000N 7564000N 7562000N 7560000N 7558000N

TROUTBECK

BOWNESS

Spring Creek

BOWNESS BASELINE 108° 00' TN

10000N

15500N

13600E

20400E

0 250 500 1000
metres

0399 VACUUM DRILLHOLE (PREFIXED BTV)

CR97/172A1

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER
BOWNESS AND TROUTBECK
VACUUM DRILLHOLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 15,000 | Figure 10

../general/rpt171.dgn

EL 8363
Terrier

238000E 240000E 242000E 244000E 246000E 248000E

7572000N 7570000N 7568000N 7566000N 7564000N 7562000N 7560000N 7558000N

TROUTBECK

BOWNESS

Spring Creek

TROUTBECK BASELINE 108° 00' TN

BOWNESS BASELINE 108° 00' TN

10000N 15000E 20400E

0 250 500 1000
metres

5202626 VBCL SAMPLE

CR97/172A

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER
BOWNESS AND TROUTBECK VACUUM AND
RAB DRILLHOLE BLEG SAMPLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 15,000 | Figure 11

../general/rpt171.dgn

EL 8363
Terrier

238000E 240000E 242000E 244000E 246000E 248000E

7572000N 7570000N 7568000N 7566000N 7564000N 7562000N 7560000N 7558000N

1520N

920E

TROUTBECK

TROUTBECK BASELINE 102° 00' 00" TN

LANE

360E

1550N

Spring Creek

BOWNESS

10000N 5400E

BOWNESS BASELINE 105° 00' 00" TN

RIVER

2040E

10000N

Corriston

Homestead

0 250 500 1000
metres

BTB118 RAB DRILLHOLE

CR 97/172A

North Flinders Mines Limited

North Flinders Mines

EL 8363 TERRIER
BOWNESS RAB
DRILLHOLE LOCATION PLAN

Data By : NFM	FEBRUARY 97	Scale 1 : 15,000	Figure 12

../general/rpt171.dgn

EL 8363
Terrier

238000E 240000E 242000E 244000E 246000E 248000E

7572000N 7570000N 7568000N 7566000N 7564000N 7562000N 7560000N 7558000N

TROUTBECK

TROUTBECK BASELINE 108° 00'00" TN

15200N 9200E 8400E 13600E 15500N 20400E 10000N 16400E

BOWNESS

BOWNESS BASELINE 108° 00'00" TN

Spring Creek

5100395 5100396 5100397 5100398 5100399 5100400 5100707 5100708 5100709 5100710 5100784 5100785 5100786 5100787 5100788 5100789 5100790 5100791 5100792 5100793 5100794 5100795 5100796 5100797 5100798 5100799 5100800 5100801 5100802 5100803 5100804 5100805 5100806 5100807 5100808 5100809 5100810 5100811 5100812 5100813 5100814 5100815 5100816 5100817 5100818 5100819 5100820 5100821 5100822 5100823 5100824 5100825 5100826 5100827 5100828 5100829 5100830 5100831

0 250 500 1000
metres

5100337 COMPOSITE ROCK CHIP SAMPLE

CR97/172A

North Flinders Mines Limited

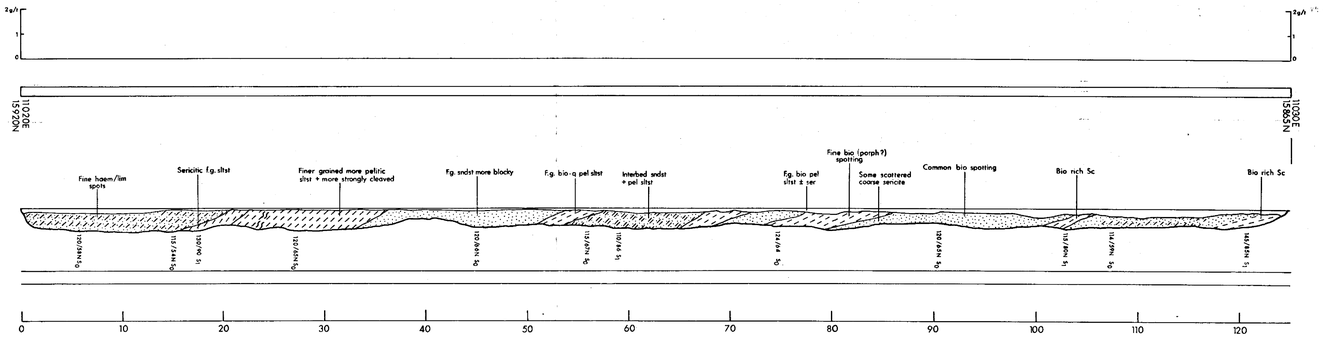
North Flinders Mines

EL 8363 TERRIER
TROUTBECK COMPOSITE ROCK
CHIP SAMPLE LOCATION PLAN

Data By : NFM | FEBRUARY 97 | Scale 1 : 15,000 | Figure 13

../general/rpt171.dgn

COSTEAN BTC 001 TROUTBECK PROSPECT · AZIMUTH 130° mag. FROM 11020mE, 15920mN



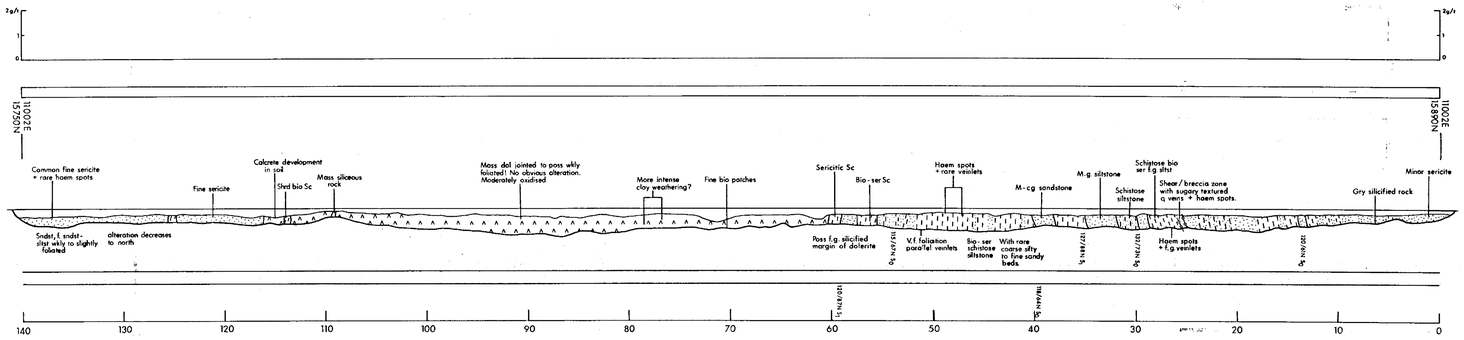
ASSAY · NORTH WALL

SUMMARY

0 GEOLOGY · NORTH WALL
1
2
3

FLOOR

COSTEAN BTC 002 TROUTBECK PROSPECT · AZIMUTH 194° mag. FROM 11002mE, 15750mN



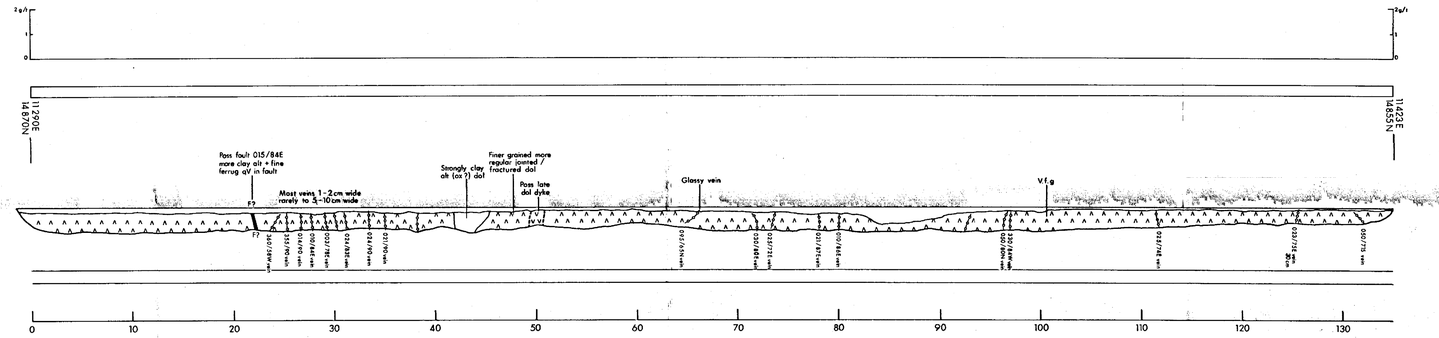
ASSAY · WEST WALL

SUMMARY

0 GEOLOGY · WEST WALL
1
2
3

FLOOR

COSTEAN BTC 003 TROUTBECK PROSPECT · AZIMUTH 110° mag. FROM 11 290mE, 14 870mN



ASSAY · NORTH WALL

SUMMARY

0 GEOLOGY · NORTH WALL
1
2
3

FLOOR

LEGEND

Brown silty / sandy soil, usually with gravel to cobble colluvium, often with pedogenic carbonate development above dolerite.

Dolerite. Fine to medium grained. Probable dykes, post dolerite sill intrusion.

Dolerite. Massive, non-foliated. Coarse to rarely medium grained. Margins occasionally sheared and/or silicified. Probable sills.

LANDER ROCK BEDS

Fine grained biotite - sericite - quartz schist. Strongly foliated (Meta - pelite)

Medium to fine grained quartz - biotite - sericite schist. Moderately to weakly foliated. (Meta - siltstone)

Medium to coarse grained quartz - biotite ± sericite psammitic schist. Weakly to non foliated. (Meta sandstone)

Alteration zone (interpreted). Variable leached clay - kaolinite ± limonite ± quartz zone. Probably developed dominantly in Lander Rock Beds. No primary texture preserved. May be fault or shear related.

Quartz vein

Geological Boundary

F —— F Fault

115/67N S_o Strike and dip of bedding

127/88N S_1 Strike and dip of foliation

010/84E vein Strike and dip of vein

LOCATION DIAGRAM
SCALE 1:2500

SCALE 1:250
METRES
5 0 5 10 15 20 25

NORTH FLINDERS MINES LIMITED

DATA BY	N.F. MINES	NOV.'96
DRAWN	CARTOGRAPHICS	DEC.'96
CHECKED		
APPROVED		
AMENDED		

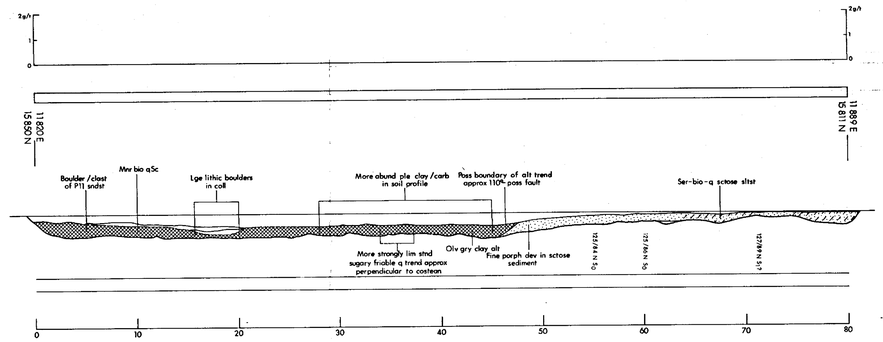
North West Arunta Reconnaissance: Northern Territory

TROUTBECK
COSTEAN BTC 001, 002, 003
Showing Assays, Summary & Geology

SCALE: 1:250	FIGURE 15	BT/XE 001

CR97/172A

COSTEAN BTC 004 TROUTBECK PROSPECT · AZIMUTH 133° mag. FROM 11820mE, 15850mN



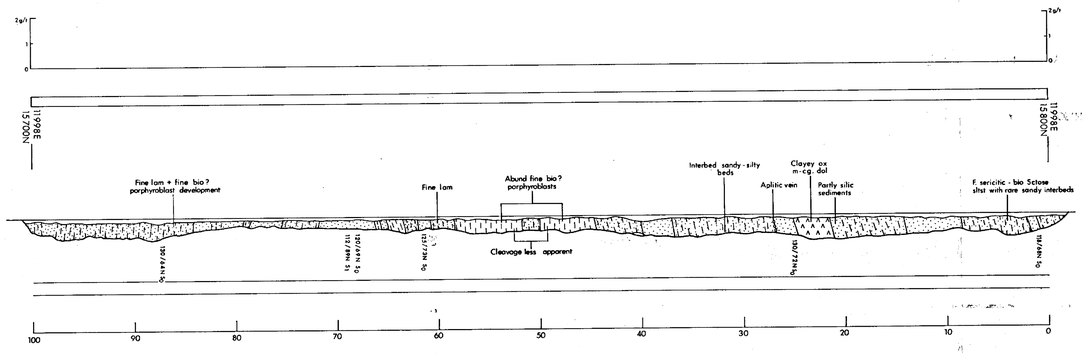
ASSAY · NORTH WALL

SUMMARY

0 GEOLOGY · NORTH WALL
1
2
3

FLOOR

COSTEAN BTC 005 TROUTBECK PROSPECT · AZIMUTH 194° mag. FROM 11998mE, 15700mN



ASSAY · WEST WALL

SUMMARY

0 GEOLOGY · WEST WALL
1
2
3

FLOOR

LEGEND

Brown silty / sandy soil, usually with gravel to cobble colluvium, often with pedogenic carbonate development above dolerite.

Dolerite. Fine to medium grained. Probable dykes, post dolerite sill intrusion.

Dolerite. Massive, non - foliated. Coarse to rarely medium grained. Margins occasionally sheared and/or silicified. Probable sills.

LANDER ROCK BEDS

Fine grained biotite - sericite - quartz schist. Strongly foliated (Meta - pelite)

Medium to fine grained quartz - biotite - sericite schist. Moderately to weakly foliated. (Meta - siltstone)

Medium to coarse grained quartz - biotite ± sericite psammitic schist. Weakly to non foliated. (Meta sandstone)

Alteration zone (interpreted). Variable leached clay - kaolinite ± limonite ± quartz zone. Probably developed dominantly in Lander Rock Beds. No primary texture preserved. May be fault or shear related.

Quartz vein

Geological Boundary

F — F Fault

115/67N S_o Strike and dip of bedding

127/88N S_{1-2} Strike and dip of foliation

010/84E vein Strike and dip of vein

LOCATION DIAGRAM
SCALE 1:2500

SCALE 1:250
METRES
5 0 5 10 15 20 25

NORTH FLINDERS MINES LIMITED

DATA BY	N.F. MINES	NOV.'96
DRAWN	CARTOGRAPHICS	DEC.'96
CHECKED		
APPROVED		
AMENDED		

North West Arunta Reconnaissance : Northern Territory

TROUTBECK
COSTEAN BTC 004, 005
Showing Assays, Summary & Geology

SCALE: 1:250 | FIGURE 16 | BT/XE 002

CR97/172A