



Normandy NFM Limited

N O R T H F L I N D E R S E X P L O R A T I O N

annual report

ANNUAL REPORT FOR EL7150 (TALBOT SOUTH) FOR THE YEAR TO 5 NOVEMBER 1999

1:250,000 SHEET REFERENCE:	THE GRANITES	SF52-3
	MOUNT SOLITAIRE	SF52-4
1:100,000 SHEET REFERENCE:	TANAMI	4858
	BUCK	4958

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SUMMARY

This report describes the exploration activity and results obtained from EL7150 during the 2nd year of tenure to 5th November 1999.

Exploration activity comprised:

- Track Upgrade: 20km
- Gridding: 166.44 line km
- Lag Sampling: 210 samples
- Soil Sampling: 959 samples
- Ground Magnetic Survey: 161.42 line km
- Vacuum Drilling: 1706 holes, 3335 samples
- RAB Drilling: 460 holes, 20035m, 6625 samples
- RC Drilling: 95 holes, 10070m, 10196 samples
- Diamond Drilling: 22 new holes, 5 diamond tails on RC holes
 - PC 1559.8m, 1259 samples
 - Core 1989.5m, 4114 samples
- Water Bore Drilling: 1 hole for 61m
- Petrology: 78 samples

Detailed follow up work was undertaken on the Groundrush prospect this season. This involved the drilling of RC and diamond holes on 50m sections along the entire 1200m strike length of the prospect. The mineralised lode shows widths of 10-30m with grades averaging 3-10g/t. The mineralisation has been tested down to 100Vm.

More intensive exploration work was carried out in the immediate environs of the Groundrush prospect. This involved blanket vacuum drilling coverage, RAB drilling of geochemical anomalies, detailed ground magnetic surveys, and trialing of other geophysical methods.

Elsewhere in the lease work has focused on the three conceptual targets (Freefall, Skysurf and Basejump) with RAB drilling to investigate the nature of the regolith cover, grid based soil sampling programs, follow up Lag sampling and minor vacuum drilling.

A more substantial camp was established adjacent to the Groundrush prospect, the final 20km of the access track were upgraded and a second water bore was drilled as a backup for the original bore.

It is expected that work for the next field season will again focus largely on the Groundrush prospect and the surrounding area. Further infill drilling of the Groundrush mineralisation is necessary and scout drilling is likely to test the mineralisation at depth. The area surrounding Groundrush will continue to be investigated for possible satellite bodies of mineralisation. Reconnaissance work will continue on the prospects elsewhere within the licence.

Contributing Authors:

James Emslie, Chris Campbell, Mike Fardon

TABLE OF CONTENTS

Page Number

1. INTRODUCTION	1
2. TENEMENT DETAILS	1
3. LOCATION, ACCESS AND PHYSIOGRAPHY	2
4. PREVIOUS EXPLORATION	2
4.1 PREVIOUS EXPLORATION BY OTHER COMPANIES.....	2
4.2 PREVIOUS EXPLORATION BY NORMANDY NFM LIMITED.....	2
5. EXPLORATION OBJECTIVES	3
6. GEOLOGY.....	4
6.1 TANAMI REGIONAL GEOLOGY	4
6.2 TALBOT SOUTH GEOLOGY.....	5
7. WORK UNDERTAKEN DURING THE FIRST YEAR OF TENURE (6/11/97 – 5/11/98)	6
8. WORK UNDERTAKEN DURING THIS REPORTING SEASON	7
8.1 FREEFALL.....	7
8.1.1 Gridding and Access Tracks	7
8.1.2 Ground Magnetic Survey.....	7
8.1.3 Lag Sampling.....	7
8.1.4 Soil Sampling	8
8.1.5 Vacuum Drilling	8
8.1.6 RAB Drilling	9
8.2 SKYSURF.....	9
8.2.1 Gridding and Access Tracks	9
8.2.2 Ground Magnetic Survey.....	10
8.2.3 Soil Sampling	10
8.2.4 Vacuum Drilling	10
8.2.5 RAB Drilling	11
8.3 BASEJUMP	11
8.3.1 Gridding and Access Tracks	11
8.3.2 Ground Magnetic Survey.....	11
8.3.3 Lag Sampling.....	12
8.3.4 Soil Sampling	12
8.3.5 RAB Drilling	13
8.4 GROUND RUSH.....	13
8.4.1 Gridding and Access Tracks	13
8.4.2 Ground Geophysics.....	14
8.4.3 Ground Magnetic Survey.....	14
8.4.4 Regolith Sampling	16
8.4.5 Lag Sampling.....	16
8.4.6 Vacuum Drilling	17
8.4.7 RAB Drilling	18
8.4.8 RC Drilling	20
8.4.9 Diamond Drilling	23
8.4.10 Petrology	24
8.4.11 Water Bore	24

9.	EXPENDITURE INCURRED FOR THE REPORTING PERIOD	25
10.	FORWARD PROGRAMME	26
10.1	PROPOSED WORK	26
10.2	PROPOSED EXPENDITURE	26
11.	REFERENCE LIST / ANNUAL REPORT BIBLIOGRAPHY	27

LIST OF FIGURES

		Scale
Figure 1	Normandy NFM Tenement Location Map (Tanami Region, NT) for EL 7150	1:1,000 000
Figure 2	EL7150 Tenement and Prospect Location Map	1:150 000
Figure 3	Talbot South Ground Magnetics	1:100 000
Figure 4	Freefall RAB & Vacuum Drillhole and LAG Sample Location	1:15 000
Figure 5	Freefall Soil Sample Location	1:15 000
Figure 6	Skysurf Soil Sample Location	1:10 000
Figure 7	Skysurf RAB & Vacuum Location	1:10 000
Figure 8	Basejump LAG Sample Location	1:10 000
Figure 9	Basejump Soil Sample Location	1:10 000
Figure 10	Basejump RAB Drillhole Location	1:10 000
Figure 11	Talbot South Gravity Station & TDEM Survey Traverse Location	1:100 000
Figure 12	Groundrush IP-Gradient Array Traverses and Diamond & RC Drillhole Location	1:15 000
Figure 13	Groundrush LAG & Regolith Sample Locations, IP-Dipole to Dipole Traverses and Waterbore Location	1:25 000
Figure 14	Groundrush Vacuum Drillhole Location	1:15 000
Figure 15	Groundrush RAB Drillhole Location*	1:20 000
Figure 16	Groundrush Diamond and RC Drillhole Location	1:15 000

* *Figures larger than A3 - folded into map wallet and attached to rear of report*

LIST OF APPENDICES

Appendix 1	Digital Data: EL7150_99.xls (EXCEL file on CD)
Appendix 2	Geophysics Survey Data (EXCEL file on CD)
Appendix 3	Sampling and Survey Methodology
Appendix 4	Petrological Sample Descriptions

1. INTRODUCTION

EL7150 (Talbot South) is located approximately 100km northwest of The Granites Gold Mine and 45km northeast of the Tanami Mine (Figure1).

Reconnaissance surface sampling effectively delineated geochemically anomalous areas early in 1998. Follow up sampling and subsequent RAB drilling significantly advanced the Groundrush prospect where diamond drilling was undertaken late in the 1998 season. Reconnaissance exploration has continued throughout the licence in 1999, further diamond and RC drilling at Groundrush have defined a significant zone of mineralisation.

2. TENEMENT DETAILS

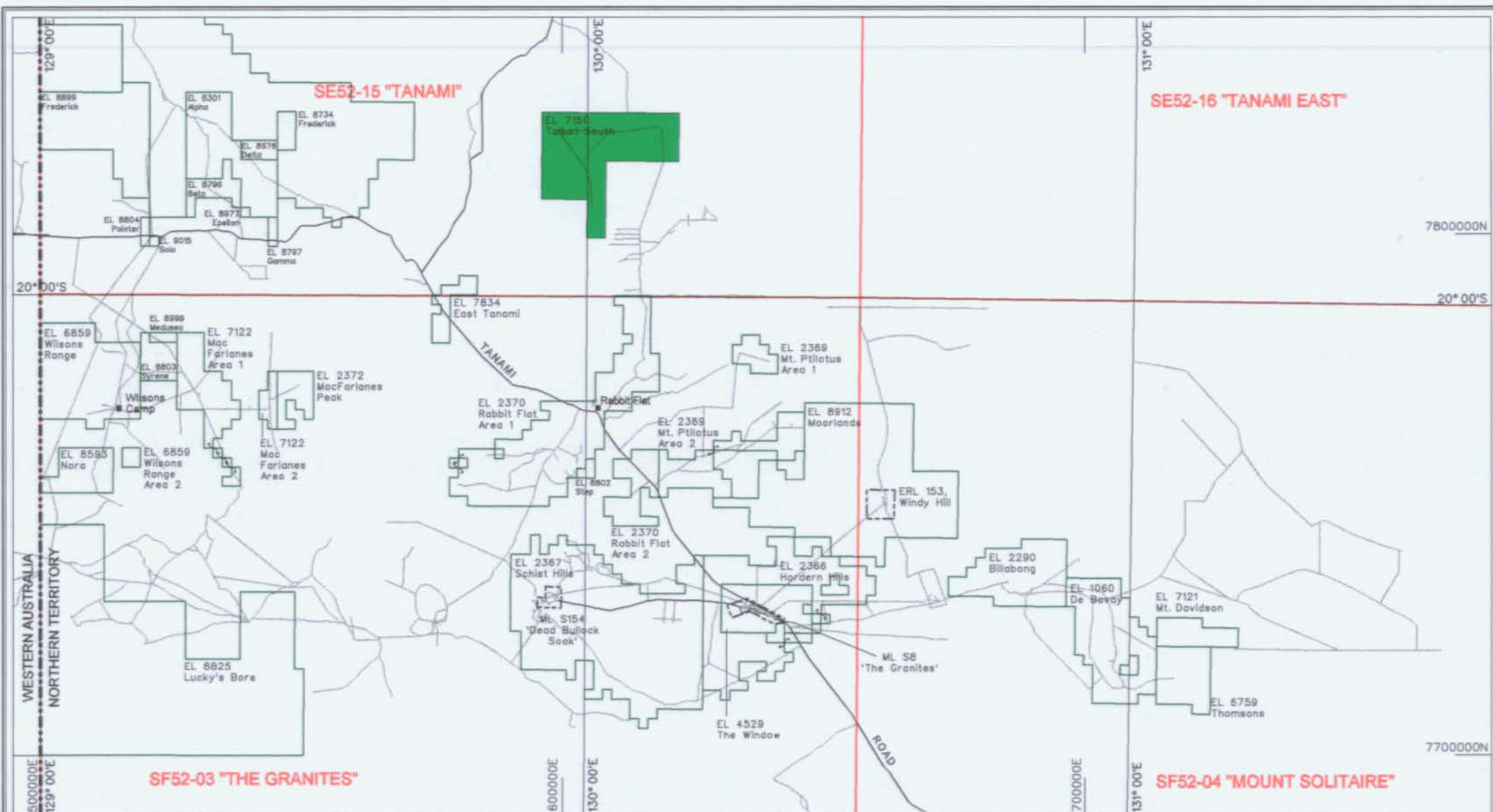
The licence area was targeted by Zapopan NL primarily because of its proximity to the Tanami Mine and the fact that the ground had no history of modern exploration. Zapopan applied for the licence on 1st August 1990. Zapopan underwent a name change in 1996 to Pegasus Gold Australia Pty Ltd. NFM purchased EL7150 in June 1996 as part of a package of Tanami exploration licenses from Pegasus. NFM became known as Normandy NFM in October 1997. The licence was granted in November 1997 and access was negotiated for the start of the 1998 field season. This document is the second report of exploration activity on EL7150.

The exploration licence was granted on 6th November 1997 and clearance was approved by the Central Land Council on 21st November 1997.

EL7150 is situated entirely within Aboriginal Freehold land held by the Central Desert Aboriginal Land Trust.

TABLE 1: Tenement Summary, EL7150

Area Name	Blocks	Km ²	Grant Date	Expiry Date	Covenant (\$)
Talbot South	111	355	6/11/97	5/11/03	300,000



SF52-03 "THE GRANITES"

SE52-16 "TANAMI EAST"

SF52-04 "MOUNT SOLITAIRE"



0 50km

SCALE 1:1,000,000

UTM Zone 52 (AGD86)



Normandy NFM Limited

NORTH FLINDERS EXPLORATION

EL 7150 - TALBOT SOUTH

TENEMENT LOCATION MAP

FIGURE 1
26 OCT 1999



3. LOCATION, ACCESS AND PHYSIOGRAPHY

The Talbot South exploration licence is located approximately 100km north northwest of The Granites Gold Mine and 45km northeast of the Tanami Mine. The licence lies within the south eastern portion of the 1:250,000 Tanami map sheet (SE52-15), as shown on Figure 1.

The licence is accessed by a track established by the company early in 1998, leading north from the Challenger prospect grid which is located in the northern part of EL2370 (Figures 1 and 2). The track was upgraded in the second half of 1999 to allow improved wet weather access to the licence and to withstand the increased traffic due to more intensive exploration activities.

The land surface is typically flat and manifested by a depositional regime of aeolian sands overlying recent sediments or subcropping geology. Low lying laterite ridges up to 10m in elevation are present in the central and northwestern portion of the tenement and a low chert rise is present in the far south of the licence at the Base Jump grid. Vegetation cover is sparse, except at the southern end of the Base Jump prospect grid.

4. PREVIOUS EXPLORATION

4.1 Previous Exploration by Other Companies

It appears that no in-ground exploration has been carried out on the land now comprising EL7150. A search of Open File Company reports was unsuccessful in identifying companies which held tenure of the ground.

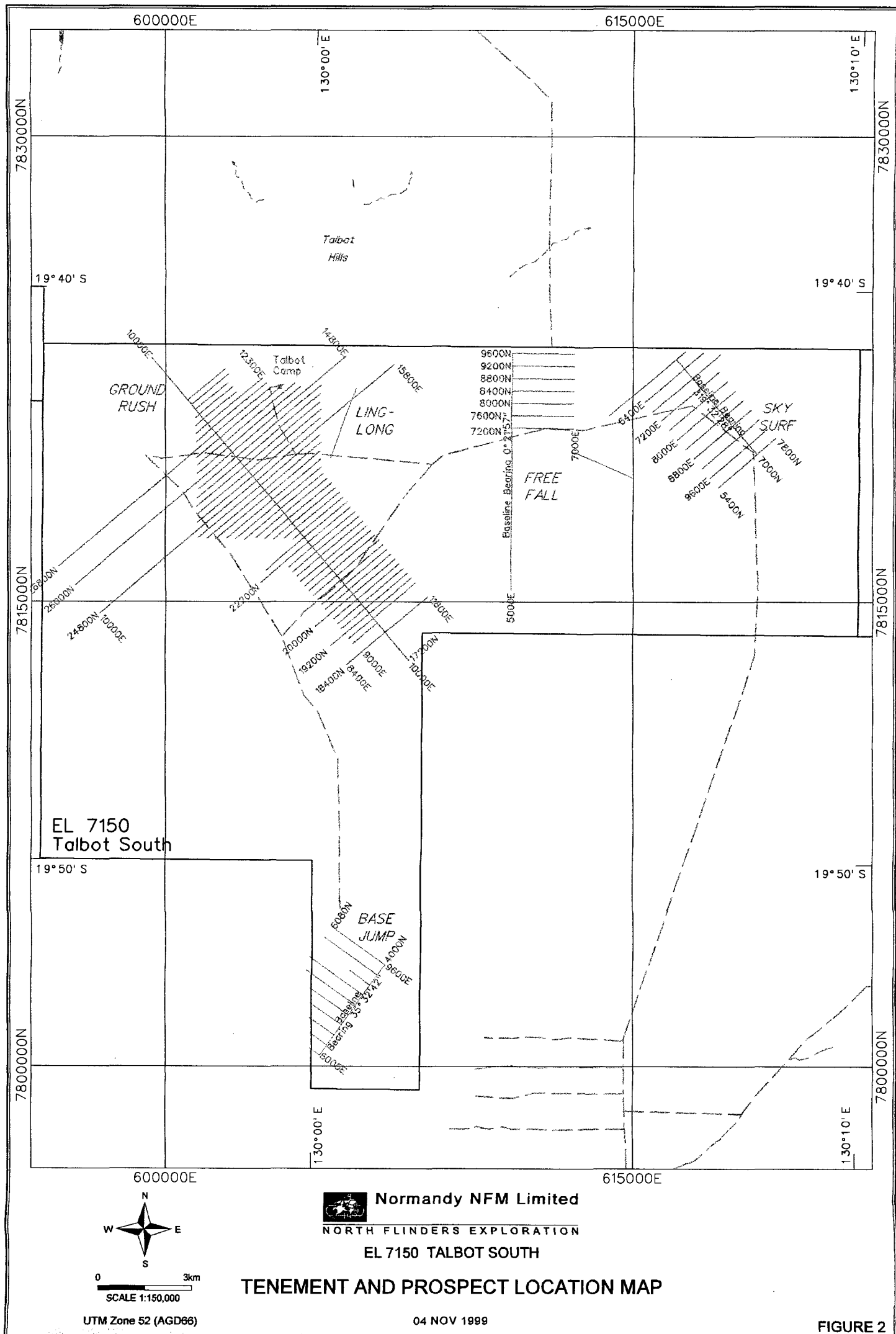
Anaconda Australia applied for a portion of the ground in 1968, in search of gold and base metal mineralisation, however no field work was undertaken.

From 1989 to 1994 Zapopan held tenure of EL5412, a license in close proximity to EL7150. Six gold anomalous prospects were identified within EL5412, the most significant being mineralisation from quartz veins hosted by the Tanami Complex.

4.2 Previous Exploration by Normandy NFM Limited

Normandy NFM gained access to the licence in November 1997.

Work undertaken in the first year of tenure involved the acquisition of aerial photographs and the production of a regolith map of the lease. Initial fieldwork included the establishment of access tracks, gridding over the principal targets (Groundrush, Freefall, Basejump and Skysurf), the completion of a water bore and setting up a temporary field camp. Preliminary exploration incorporated reconnaissance Lag and rock chip sampling. Follow up work on the conceptual target at Freefall included detailed ground magnetics and scout drilling of RAB holes to investigate the nature of the regolith. At Groundrush the more detailed work included soil sampling, close spaced RAB drilling and two diamond holes.



5. EXPLORATION OBJECTIVES

Exploration and mine studies have indicated that gold mineralisation in the region has an association with a range of geological environments. Models of gold occurrence for which the Tanami is believed to be most prospective include:

- Disseminated, stratabound deposits hosted by banded iron formations;
- DBS-Granites styles of mineralisation, controlled by anticlinal folding and iron-rich lithologies
- Discordant stockwork deposits of gold in relatively late stage quartz veins;
- Gold mineralisation in veins hosted by shear zones with strong alteration characteristics;
- Deposits in regolith containing gold concentrated by alluvial, eluvial or lateritic processes.

With these models in mind, the Company's geologists have selected prospective target exploration areas based on regional geological, structural, geophysical and geochemical data.

The detailed assessment of these targets has been undertaken by a range of exploration techniques, designed to reveal the geology of the target area, and the presence of indicator elements, particularly gold itself, in anomalous quantities.

6. GEOLOGY

6.1 Tanami Regional Geology

The Granites-Tanami Goldfield lies in the eastern part of the Early Proterozoic Granites-Tanami Inlier which is part of the Northern Australian Orogenic Province (Plumb 1990). The Inlier abuts the Arunta Complex to the south and east and is overlapped by younger cover sequences including the extensive Paleozoic Wiso Basin on its northeastern margin. To the west, clastic sediments of the Middle Proterozoic Birrindudu Basin overlie and separate the Inlier from similar age rocks in the Halls Creek Province.

Tertiary drainage channels, now completely filled with alluvial and lacustrine clays and calcrete are a major feature of the region. Some drainage profiles are 10 km wide and 100m deep, presenting a formidable barrier to mineral exploration.

Gold mineralisation within the Normandy NFM tenement holding is hosted by the Mt Charles Beds, a sequence of fine to medium-grained turbiditic metagreywackes with lesser amounts of metapelite, graphitic schist, banded iron-formation, chert and basic volcanic rocks (Blake et al 1979). Owing to their more resistant nature, only the cherts and iron-formations and associated interbedded graphitic schists tend to outcrop above the sand plain.

A suite of syn-to post-deformation dolerites and gabbros frequently invade the graphitic schist components of the sequence. Large plutons of mostly undeformed late-to post-orogenic adamellite and minor more mafic variants comprising The Granites Granite suite are widespread throughout the area.

Residual hills of gently folded Carpentarian Gardiner Sandstone unconformably overlie Early Proterozoic lithologies. Younger flat lying Cambrian Antrim Plateau Basalts are also preserved as platform cover in areas protected from erosional stripping.

Complex, polyphase deformation during the Barramundi Orogeny has affected the entire Granites-Tanami Inlier. It appears to have been largely controlled by two sets of regional scale fundamental crustal fractures that trend NNE and WNW. This is evidenced by the orientation of successive phases of macroscopic folding in the region and the consistent sympathetic trends of late tectonic faults.

Peak metamorphism during the Barramundi Orogeny reached amphibolite facies at The Granites Gold Mine, but is more generally greenschist facies as at Dead Bullock Soak. Contact metamorphic aureoles, commonly identified in pelitic schist units by randomly orientated andalusite porphyroblasts, are well developed at the margins of the post-orogenic granite plutons.

6.2 Talbot South Geology

Spot and radiometric images of the area indicate that very little Proterozoic geology outcrops within the exploration licence. However magnetic highs (<500nT) evident from regional aeromagnetic data are considered to be caused by Lower Proterozoic Tanami Complex lithologies.

Three major stratigraphic groups are observed within EL7150. The Tanami Group, which has been extensively intruded by granitoid bodies, does outcrop in places. BMR drilling at 3km spacings on an east west traverse confirmed the presence of the granitoid bodies which occupy approximately half of the licence area.

A major part of the Mt Charles Beds are the meta-wackes, meta-sandstones and meta-siltstones with minor associated meta-dolerites with bedding parallel and crosscutting mineralised quartz veins. At the Basejump and Skysurf grids, cherty meta-sediments form low ridges.

At Basejump, silicate facies BIF's and chert outcrop, while at Freefall outcrop is predominantly lateritic duricrust. RAB drilling has indicated that the laterite was formed over amphibolite grade mafic rocks almost certainly of the Tanami Complex. At the eastern portion of the Freefall prospect limited outcrop of chert, pelitic schists and minor quartz veining was encountered. At Skysurf, highly silicified units outcrop near the baseline and may represent Tanami Complex cherts or silicified and altered Gardiner Sandstone. Further to the east, Gardiner Sandstone forms prominent outcrops with well developed bedding and ripple marks. A small outcrop of conglomerate may represent the basal conglomerate of the Gardiner Sandstone Sequence.

At Groundrush, outcropping units include silicified sandstone of uncertain stratigraphic position. Lateritised dolerite and pelitic schist outcrop to the south, while to the north prominent ridges of Gardiner sandstone show well developed cross bedding indicating an overturned sequence dipping 80° to grid north. Further to the north (outside the tenement boundary), these units are more flat lying dipping 20° towards grid south. At the southern extremity of the prospect grid (20000N), greywacke and quartz veins of the Tanami Complex outcrop.

Recent diamond and RC drilling at Groundrush has given a much greater insight into the geology of that prospect. The bulk of the mineralisation is contained within a meta-dolerite body that strikes north-northeast (grid) and dips steeply (70-80°) toward the west (grid). The dolerite is bounded on both sides by sediments, most commonly these sediments are coarse meta-arkose or meta-greywacke with only minor interbedded siltstone and chert horizons. The mineralisation is associated with the development of multistage quartz veining, chlorite alteration and sulphides.

The Mt Charles Beds of the Tanami Group and the granitoids are unconformably overlain by the Gardiner Sandstone of the Birrindudu Group and the Antrim Plateau Volcanics. The Gardiner Sandstone forms low ridges mainly along the northern margins of the exploration licence, and small pockets immediately east of the Base Jump prospect.

7. WORK UNDERTAKEN DURING THE FIRST YEAR OF TENURE (6/11/97 – 5/11/98)

Normandy NFM gained access to EL7150 in November 1997.

An extensive programme of reconnaissance exploration was undertaken which included the following:

- Establishment of a temporary camp and access tracks.
- Establishment of grids over aeromagnetic prospects – Freefall, Basejump, Skysurf, and Groundrush.
- Acquisition of aerial photography (1:50000) and the production of a regolith map of the licence.
- Reconnaissance Lag sampling over 50% of the tenement with follow up infill sampling following encouraging results from the conceptual targets.
- Rock chip sampling where outcrop was encountered during Lag sampling. Peak values returned from these samples included 11.6ppb Au, 580ppm Cu and 0.2% Zn. 21 samples from these rock chips were sent for petrological description.

Follow up work at Freefall included:

- Ground Magnetic survey (7.4km) to provide control for the aeromagnetic anomaly.
- RAB drilling (230m) to investigate the nature of the bedrock beneath the laterite duricrust.

Follow up work at Groundrush included:

- Detailed Soil and Lag sampling on four widely spaced traverses producing a tighter anomaly over bedrock mineralisation.
- RAB drilling (5517m) on 200m sections over the coincident LAG and Soil anomaly. Peak gold intersections included 24m @ 5.3g/t, 24m @ 3.2g/t, 18m @ 4.1g/t and 27m @ 5.4g/t along an 800m strike length of the anomaly.
- Two Diamond holes were drilled (PC 101.8m, Core 232.9m) to establish the stratigraphy and controls on the mineralisation.

8. WORK UNDERTAKEN DURING THIS REPORTING SEASON

8.1 FREEFALL

Lag sampling was grid based and restricted to four traverses that completed the Lag geochemistry coverage over the prospect. Soil sampling was conducted over a large part of the gridded area after the regolith RAB drilling indicated that soils were a suitable sample medium. A single traverse of Vacuum drilling tested an area where previous Lag sampling had produced anomalies that were not supported by follow up soil sampling. A traverse of RAB drilling was used to determine the most appropriate sampling medium for the area.

Complete assay records and sample descriptions are included in Appendix 1.

8.1.1 Gridding and Access Tracks

An additional 3.7 line km of gridding was established at Freefall this year. Grid peg spacing was 40m on 400m spaced lines, refer to Figure 2.

8.1.2 Ground Magnetic Survey

A single traverse of ground magnetics was undertaken with the objective of providing ground control for the aeromagnetic anomalies and geological definition of the magnetic sources (Figure 3). The survey was conducted by NFM personnel by the methods outlined in Appendix 3 of this report. Data for all the ground geophysics is provided in a digital format in the Appendix 2.

Table 2: Freefall Ground Magnetic Survey Details

Date	Line ID	Traverse start/finish	Length (km)	Comments
March 1999	9200N	6840-5000E	1.84	Continuous sampling rate with GSM-19 & @ 5m with G-856
TOTAL			1.84	

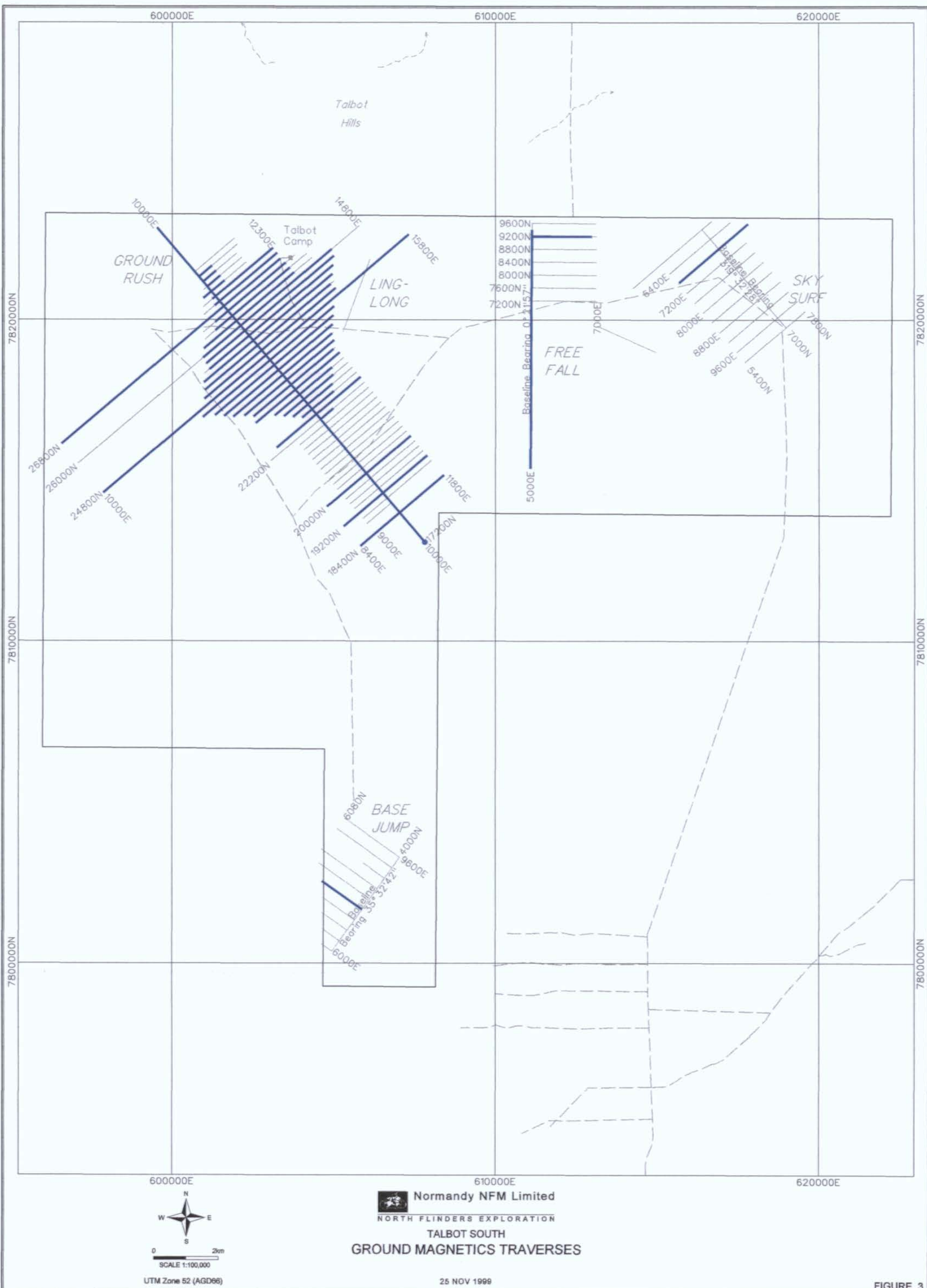
8.1.3 Lag Sampling

Lag sampling at Freefall was grid based and limited to four traverse lines (7200, 7600, 8000, 8400N) with samples collected at 40-80m intervals (Figure 4). This completed the Lag geochemistry coverage over the Freefall area.

Table 3: Freefall Lag Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3191874-3191900, 3194823-3194884	89	Genalysis	Au,As
89			

No anomalous Au results were returned from this round of sampling. Some weak As anomalies were identified (65ppm maximum) from the eastern end of the 7200N line. These As results support a north south striking anomaly at the eastern end of the grid.



8.1.4 Soil Sampling

Following the programme of regolith RAB drilling it was decided that soil samples were an appropriate medium over the Freefall grid (Figure 5). Priority was given to those areas that had already returned Lag anomalies in the hopes of further resolving those anomalies. Samples were taken at 20m intervals along 400m spaced lines (8000-9600N). Around half the samples were collected from areas of transported aeolian sand, the remainder were from ferruginous lag and sand covered terrain.

Table 4: Freefall Soil Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3198847-3199141	295	Genalysis	Au, As
295			

This programme produced no anomalous Au or As results. While some As results were elevated in respect to the background they are not considered significant. With a reappraisal of the regolith RAB drilling it seems that soil sampling may not have been the most appropriate medium as the transported regolith horizon may be thicker than first thought.

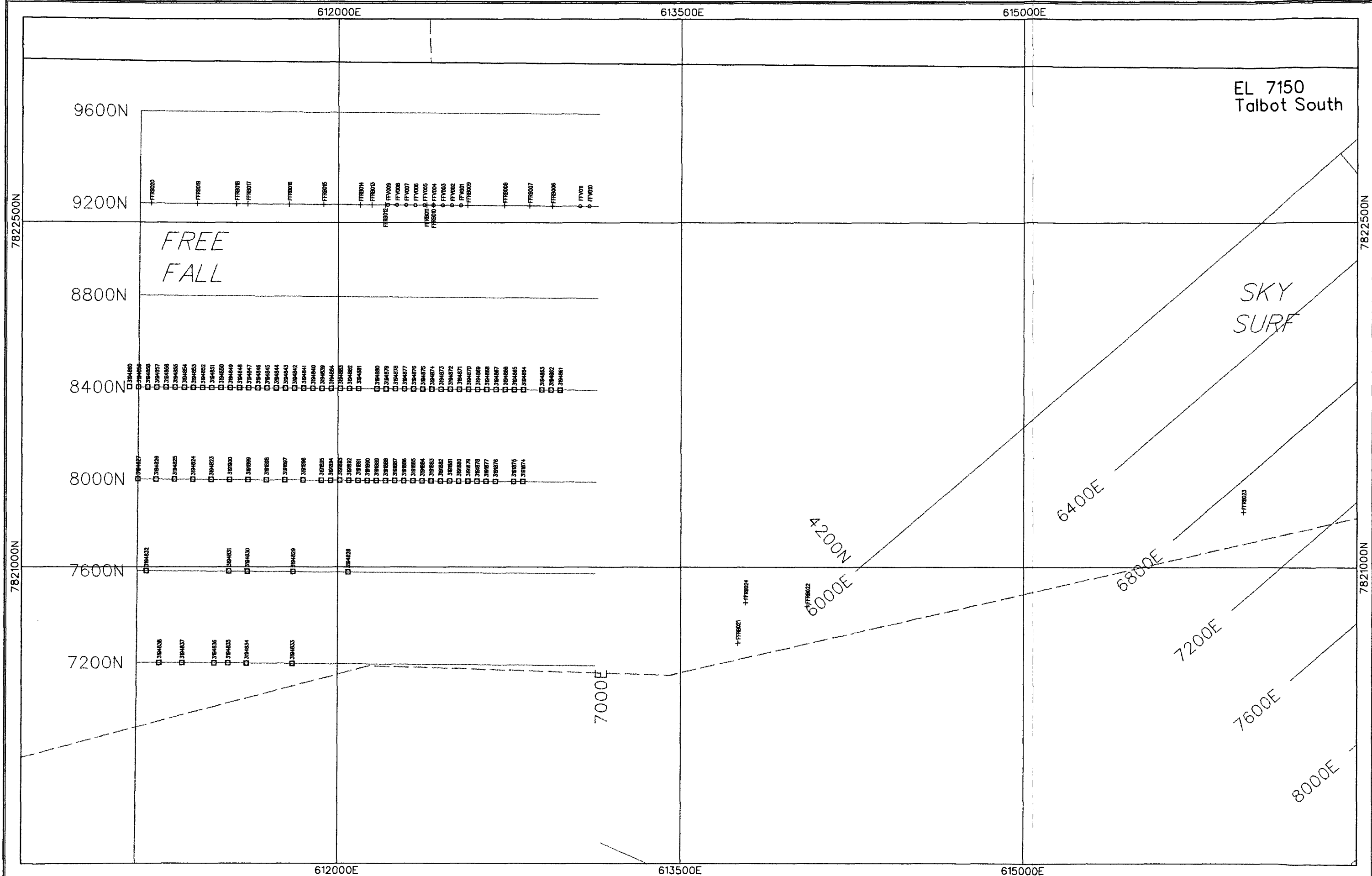
8.1.5 Vacuum Drilling

A short traverse of Vacuum drilling was undertaken on 9200N to test an area where Lag sampling had produced anomalous results but follow up soil sampling found nothing (Figure 4). Where possible Mini Bleg and BOH samples were collected from each hole.

TABLE 5: Freefall Vacuum Drillhole and Sample Details

Programme	Sample Medium	Drillhole ID	Sample Numbers	Number of Samples	Elements
Freefall Vacuum	Mini BLEG	FFV001-011	3235547-3235556	10	Au, As, Cu, Zn, Ag
	BOH	FFV001-011	3211395-3211405	11	Au, Cu, Ag
Total		11		21	

BOH samples of the bedrock produced some anomalous results. A result of 3.8ppb Au was found in the granites at the bottom of one hole, this coincides with a Lag anomaly on the same line. Several holes returned As values above the background level, with a maximum of 28ppm, these were in BOH samples of meta-sediments.



EL 7150
Talbot South

FREE
FALL

SKY
SURF

9600N

9200N

8800N

8400N

8000N

7600N

7200N

612000E

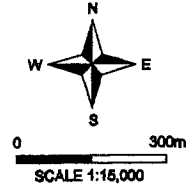
613500E

615000E

612000E

613500E

615000E

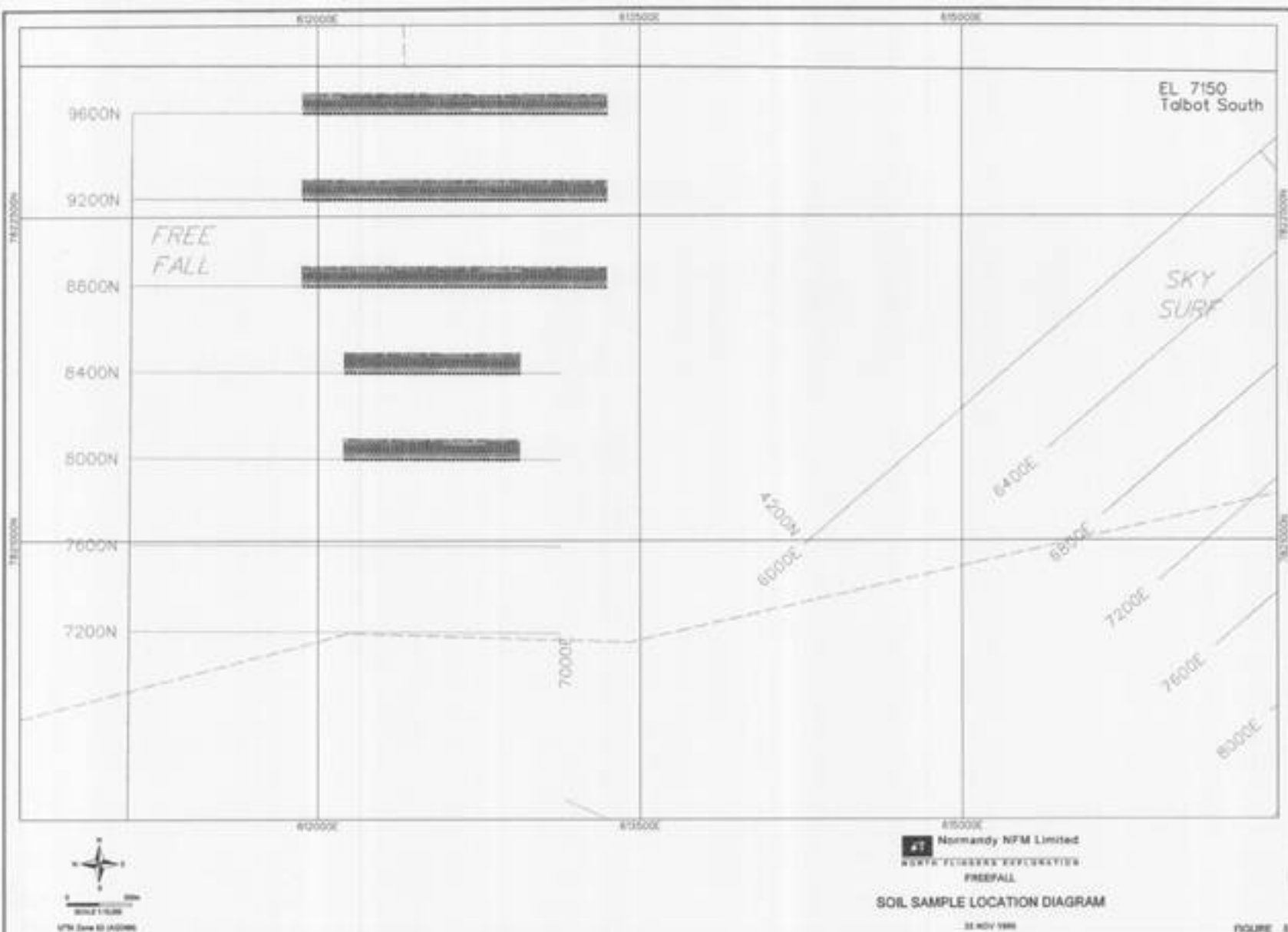


- LEGEND**
- Lag Sample
 - Vacuum Drillhole
 - + RAB Drillhole

Normandy NFM Limited
NORTH FLINDERS EXPLORATION
FREEFALL

RAB & VACUUM DRILLHOLE AND LAG SAMPLE LOCATION DIAGRAM

26 NOV 1999



8.1.6 RAB Drilling

A single traverse of RAB holes was drilled on 9200N in order to evaluate the regolith conditions in the Freefall area and thereby select the most appropriate geochemical sampling method (Figure 4). Holes were spaced at 100-500m intervals with the coverage tightened over areas of Lag Au/As anomalism. Hole depths averaged 51m with the aim being to reach recognisable bedrock. Samples were sent to the Analabs laboratory.

A number of water search holes were drilled in areas thought to be prospective from interpretation of aerial photographs and spot imagery. All of these holes were vertical and samples were collected from six metre composites.

TABLE 6: Freefall RAB Drilling

Programme	Line	Drillholes	Azi (grid)	Dip	No. Holes	Metres	No. Samples
Regolith	9200N	FFRB006-020	90	-60	15	775	254
Water search		FFRB021-024			4	283	43
TOTAL					15	775	254

The eastern end of the traverse shows the regolith to consist of up to 13m of sands and grits. The western and central sections are covered by 4-5m of sand and laterite material. The deep regolith cover means little confidence can be put in the soil sampling. The bedrock intersected during this drilling consisted of pelitic sediments, dolerite and granite.

The four water search holes in the south of the grid mainly intersected siltstone and greywackes. A single anomalous Au assay of 92ppb was found in a greywacke. Only FFRB024 intersected water, the flow rate was <1L/s.

8.2 SKYSURF

A programme of soil sampling was carried out over much of the Skysurf grid in the hopes of producing enhanced gold anomaly resolution and continuity and therefore better RAB targets. A small number of Vacuum holes were drilled testing areas where soil sampling failed to return anomalous results in areas that had previously produced anomalous Lag and RAB results. A limited programme of RAB drilling was undertaken to establish the nature of the regolith cover over the Skysurf grid.

Complete assay records and sample descriptions are included in Appendix 1.

8.2.1 Gridding and Access Tracks

An additional 6 line km of gridding was established at Skysurf this year. Grid peg spacing was 40m on 400m spaced lines. Refer to Figure 2.

8.2.2 Ground Magnetic Survey

A single traverse of ground magnetics was undertaken with the objective of providing ground control for the aeromagnetic anomalies and geological definition of the magnetic sources (Figure 3). The survey was conducted by NFM personnel by the methods outlined in Appendix 3 of this report. Data for all the ground geophysics is provided in a digital format in the Appendix 2.

Table 7: Skysurf Ground Magnetic Survey Details

Date	Line ID	Traverse start/finish	Length (km)	Comments
April 1999	6800N	8200-5400E	2.8	Continuous sampling rate with GSM-19
TOTAL			2.8	

8.2.3 Soil Sampling

Following the programme of regolith RAB drilling it was decided that soil samples were an appropriate medium over the Skysurf grid (Figure 6). Priority was given to those areas that had already returned Lag anomalies in the hopes of further resolving those anomalies. Samples were taken at 20m intervals along 400m spaced lines (6400-8400E). The majority of the samples were collected from areas of aeolian sand, the remainder were from ferruginous lag and sand covered terrain.

Table 8: Skysurf Soil Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3198501-3198846	346	Genalysis	Au, As
		346	

This programme produced no anomalous Au or As results. While some As results were elevated in respect to the background they are not considered significant. With a reappraisal of the regolith RAB drilling it seems that soil sampling may not have been the most appropriate medium as the transported regolith horizon may be thicker than first thought.

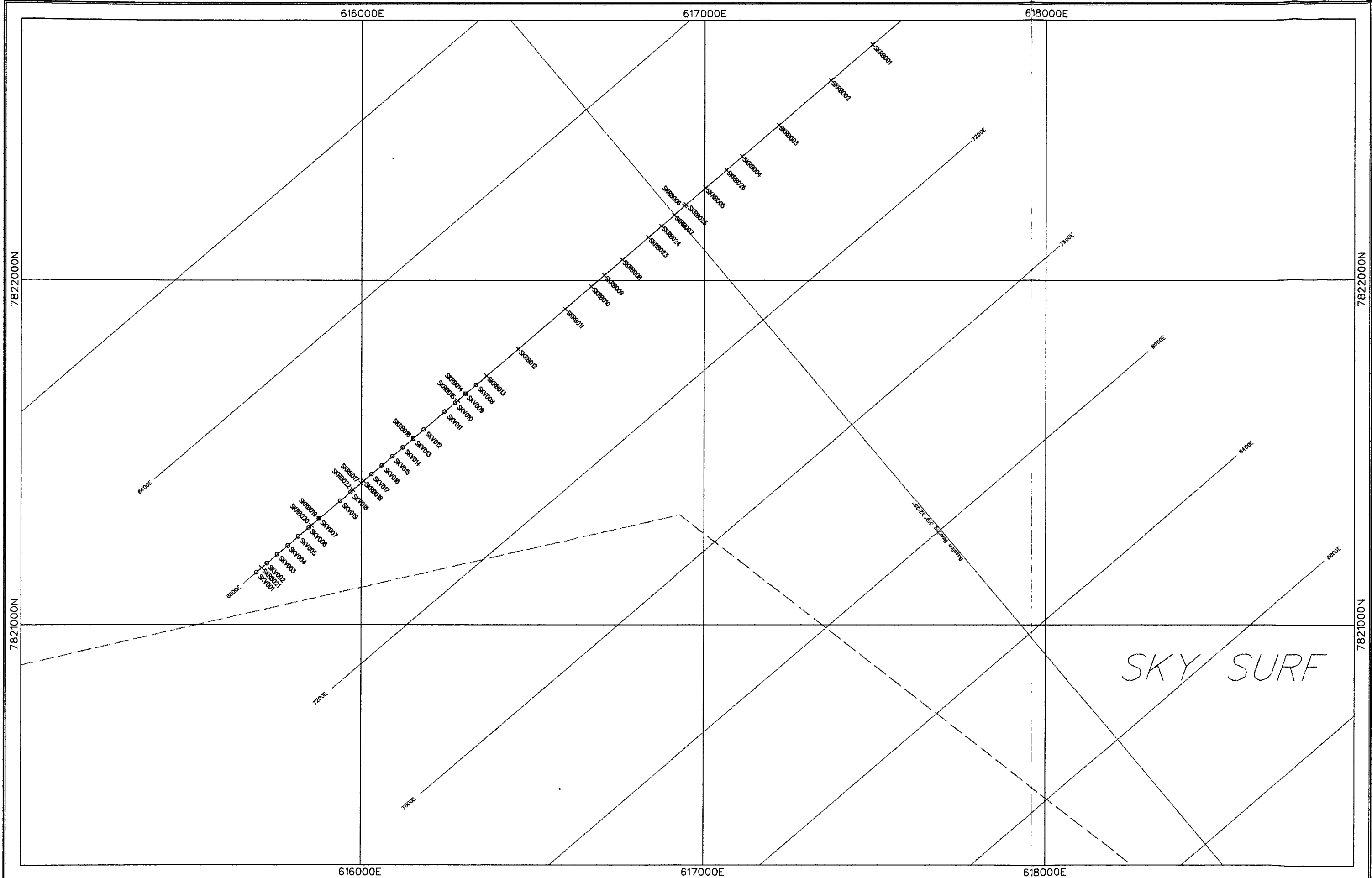
8.2.4 Vacuum Drilling

A short traverse of Vacuum drilling was undertaken on 6800E (Figure 7) to test an area where RAB and Lag sampling had produced anomalous results but follow up soil sampling found nothing. Where possible Mini Bleg and BOH samples were collected from each hole.

TABLE 9: Skysurf Vacuum Drillhole and Sample Details

Programme	Sample Medium	Drillhole ID	Sample Numbers	Number of Samples	Elements
Skysurf Vacuum	Mini BLEG	SKV001-019	3211376-3211394	19	Au, Cu, Ag
	BOH	SKV001-019	3235531-3235546	16	Au, As, Cu, Zn, Ag
Total		19		35	

Anomalous results in the mini BLEG and BOH essentially correlated with each other and with results from earlier Lag. BOH Au anomalism corresponds with Lag As anomalism and RAB As and Au anomalism. All of the anomalous Vacuum drilling results were contained within meta-sediments.



8.2.5 RAB Drilling

A single traverse of RAB holes was drilled on 6800E (Figure 7) in order to evaluate the regolith conditions in the Skysurf area and thereby select the most appropriate geochemical sampling method. Holes were spaced at 75-500m intervals with the coverage tightened over areas of Lag Au/As anomalism. Hole depths averaged 40m with the aim being to reach recognisable bedrock. Samples were sent to the Analabs laboratory.

TABLE 10: Skysurf RAB Drilling

Programme	Line	Drillholes	Azi (grid)	Dip	No. Holes	Metres	No. Samples
Regolith	6800E	SKRB001-026	90	-60	26	1049	341
TOTAL					26	1049	341

The northern portion of the RAB traverse found the regolith to consist of 10-20m of sands and grits. In the central and southern portions of the traverse there was 4-5m of sand and laterite. The deep regolith cover means little confidence can be put in the soil sampling. The bedrock intersected during this drilling consisted of dolerite, siltstones and greywackes. A peak gold value of 140ppb was returned from SKRB022 associated with a 40m interval of As >130ppm. Adjacent to this hole are three others with equally good As.

8.3 BASEJUMP

Work at Basejump was confined to reconnaissance level activities with the objective of identifying anomalous areas for further follow up work. A single traverse of RAB drilling was undertaken to evaluate the regolith cover at Basejump and therefore the most appropriate sample medium. Limited Lag sampling was conducted on two traverses, more extensive soil sampling covered much of the Basejump grid.

Complete assay records and sample descriptions are included in Appendix 1.

8.3.1 Gridding and Access Tracks

An additional 4 line km of gridding was established at Basejump this year. Grid peg spacing was 40m on 400m spaced lines. Refer to Figure 2.

8.3.2 Ground Magnetic Survey

A single traverse of ground magnetics was undertaken with the objective of providing ground control for the aeromagnetic anomalies and geological definition of the magnetic sources (Figure 3). The survey was conducted by NFM personnel using the methods outlined in Appendix 3 of this report and survey data is supplied in Appendix 2.

Table 11: Basejump Ground Magnetic Survey Details

Date	Line ID	Traverse start/finish	Length (km)	Comments
March 1999	7600E	5520-4000N	1.52	Continuous sampling rate with GSM-19& @ 5m with G-856
1.52 line kms				

8.3.3 Lag Sampling

Lag sampling was grid based and limited to two lines 8000E, 8400E (Figure 8). Sample spacing along lines was 40m where suitable material was available. This programme completed sampling over the Basejump grid.

Table 12: Basejump Lag Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3191801-3191837 3191840-3191873	71	Genalysis	Au, As
71			

Results generated only weakly anomalous Au results which failed to correlate with previous Lag anomalies. There were few anomalous As results with a maximum of 30ppm.

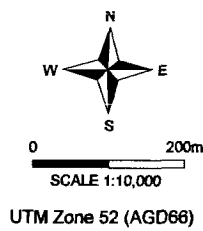
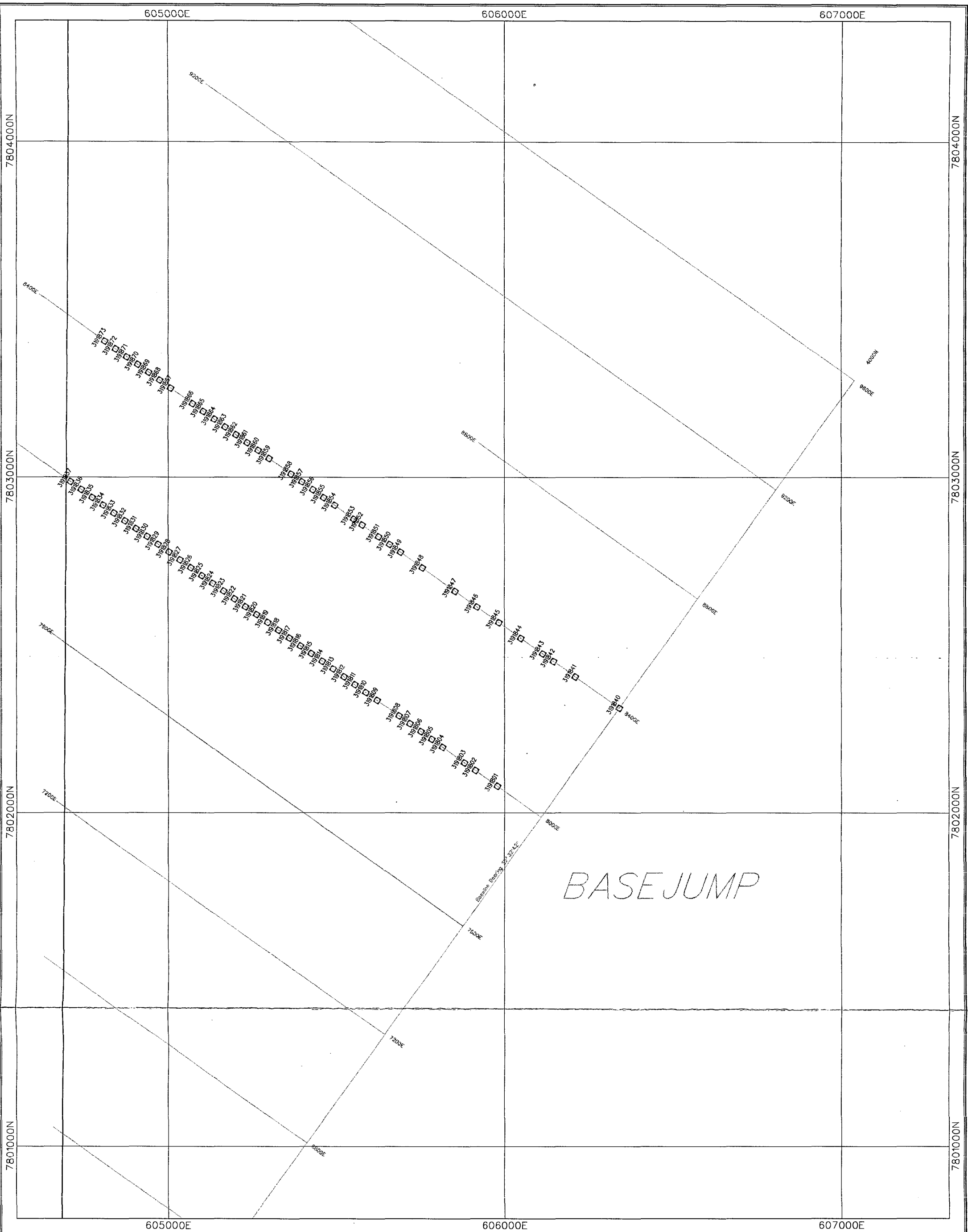
8.3.4 Soil Sampling


Following the programme of regolith RAB drilling it was decided that soil samples were an appropriate medium over the Basejump grid. Priority was given to those areas that had already returned Lag anomalies in the hopes of further resolving those anomalies. Samples were taken at 20-40m intervals along 400m spaced lines 6800-8800E (Figure 9). Most samples came from sub cropping regolith conditions.

Table 13: Basejump Soil Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3199142-3199181 3199188-3199316 3199319-3199467	318	Genalysis	Au, As
318			

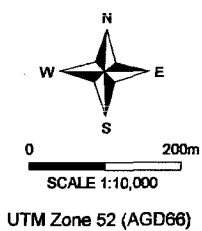
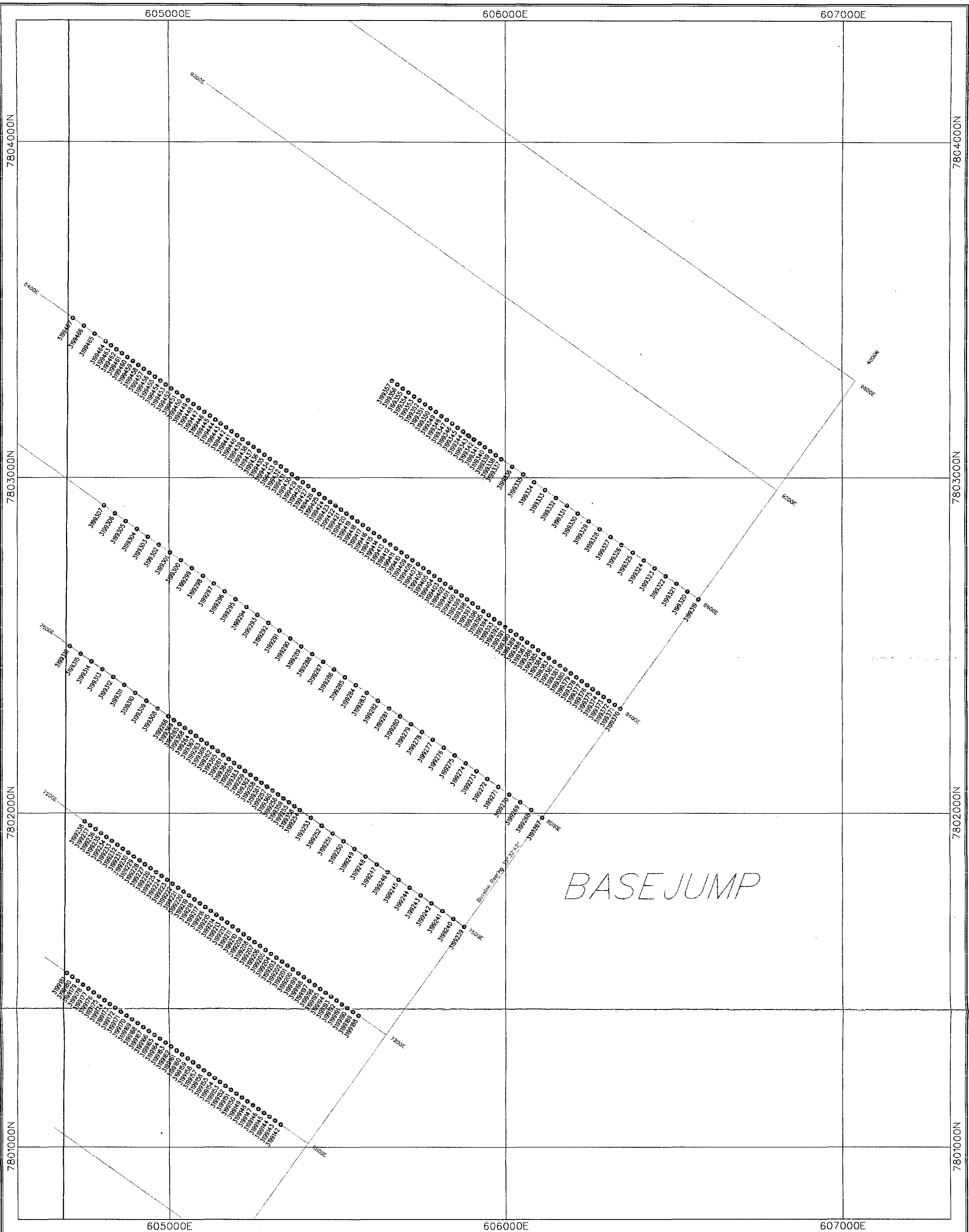
Results for Au and As were poor with peak values of 1.7ppb and 3.5ppm respectively.




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BASE JUMP

LAG SAMPLE LOCATION DIAGRAM

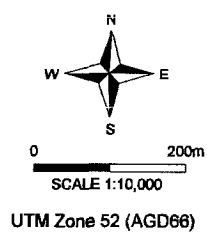
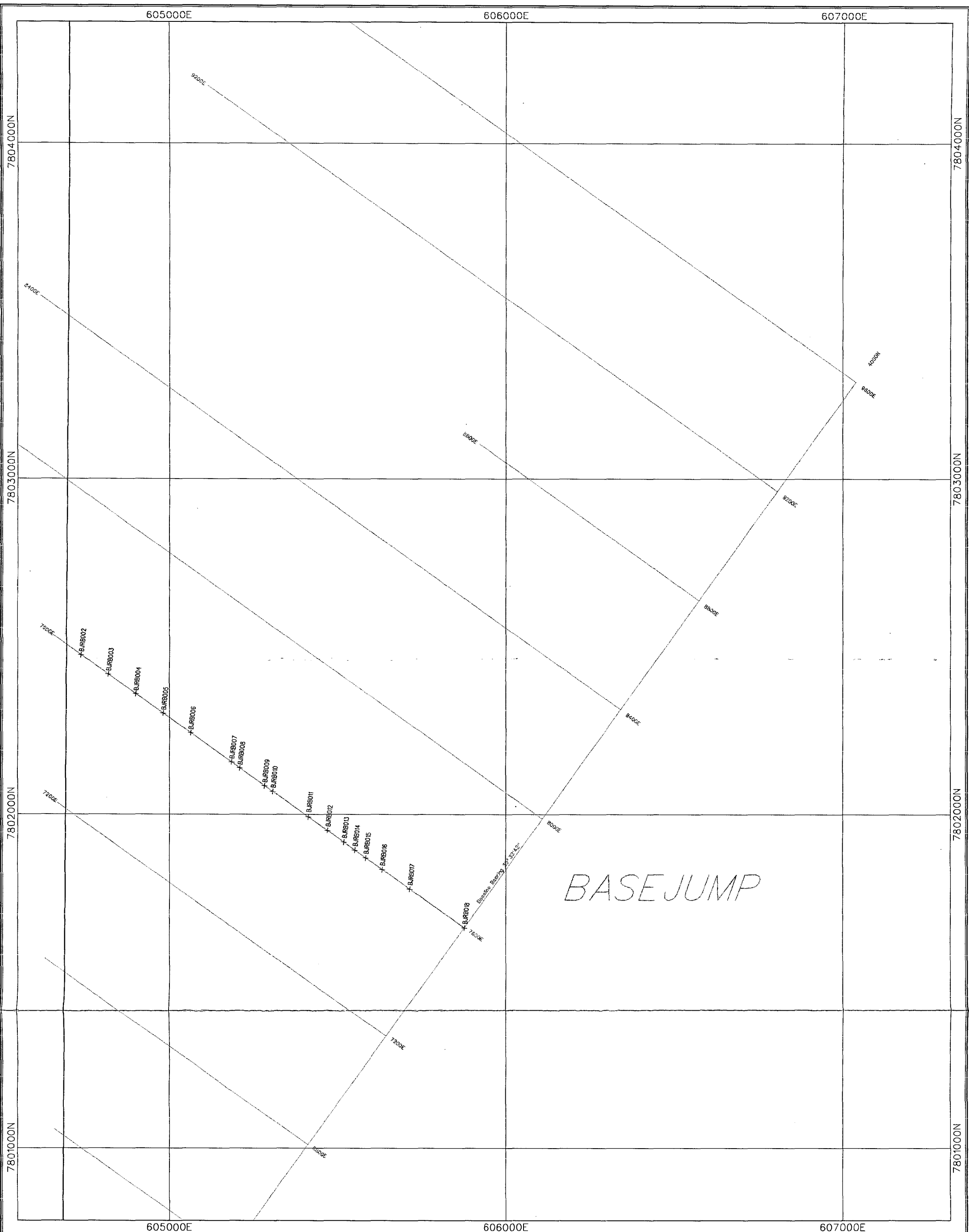
01 DEC 1999




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BASE JUMP

SOIL SAMPLE LOCATION DIAGRAM

01 DEC 1999



 **Normandy NFM Limited**
 NORTH FLINDERS EXPLORATION
 BASE JUMP

RAB DRILLHOLE LOCATION DIAGRAM

01 DEC 1999

8.3.5 RAB Drilling

A single traverse of RAB drilling was completed to investigate the regolith conditions of the Basejump grid (Figure 10). Holes were spaced 100-300m along the traverse (7600E) with all the holes inclined at 60° toward grid north. Holes were drilled to an average depth of 39m and stopped once they reached recognisable bedrock. All samples from the RAB drilling were sent to Analabs laboratory and analysed for Au and As.

TABLE 14: Basejump RAB Drilling

Programme	Line	Drillholes	Azi (grid)	Dip	No. Holes	Metres	No. Samples
Regolith	7600E	BJRB002-018	0	-60	17	673	219
TOTAL					17	673	219

RAB drilling intersected abundant meta-dolerites with lesser graphitic and non-graphitic meta-siltstones. Most of the traverse was over sub-cropping bedrock with thicker aeolian sand to the south. A single 44ppb Au result and a number of As results 50-280ppm were returned from consecutive holes. All these results were in the meta-sediments and did not coincide with the Lag results.

8.4 GROUND RUSH

A programme of detailed RC and diamond drilling was undertaken over the main body of the Groundrush mineralisation. The aim of this drilling was to test the economic potential of the deposit by defining its size, shape and average grade.

Further reconnaissance exploration was carried out surrounding this more intense RC and diamond drilling in the hopes of identifying further satellite bodies of mineralisation. This reconnaissance work incorporated a trialing a range of exploration techniques over the Groundrush mineralisation. This work included minor LAG sampling, orientation Vacuum drilling and regolith RAB drilling.

From these trials an appropriate sampling medium and spacing was selected to extend coverage beyond the areas of known mineralisation. Primarily this involved a large programme of Vacuum drilling with some follow up RAB drilling of anomalies produced during the earlier phases.

Complete assay records and sample descriptions are included in Appendix 1.

8.4.1 Gridding and Access Tracks

As part of the upgrade of the lease access track the section of track through the middle of the Groundrush grid was substantially improved. The track was upgraded to a formed road to cope with the more frequent usage necessary during the intense drilling programmes.

An additional 152.74 line km of gridding was established at Groundrush this year. Grid peg spacing was 40m on 200 & 400m spaced lines. The closer spaced gridding was necessary for the more intense drilling and geochemical sampling programmes. To allow for easier orientation in the field the grid was rotated through 90° this season, what was previously grid west is now grid north.

8.4.2 Ground Geophysics

Table 15: Groundrush Geophysical Survey Details (Figure 11-13)

The Gravity survey work consisted of 165 stations on an 8km traverse 24400N (7500-16500E) and 270 stations on a 1km square grid over an area of 26x8km (SW corner 596000E, 7814000N and NE corner 622000E, 7823000N). A 1km x 1.6km gradient array IP survey was completed over the Groundrush mineralisation, a dipole – dipole line was completed over the two peak chargeability highs.

Sample Type	Date	Number of Readings	Comments
Gravity	July 1999	435	Completed by Daishsat
100m Moving Loop TEM	August 1999	11.6 line km	24800N 5350-13050E 25200N 9050-12950E
Gradient Array IP	September 1999	11.5 line km	40m dipoles 24200-25800N
Dipole/Dipole IP	September 1999	2 line km	24200N 11520-12080E

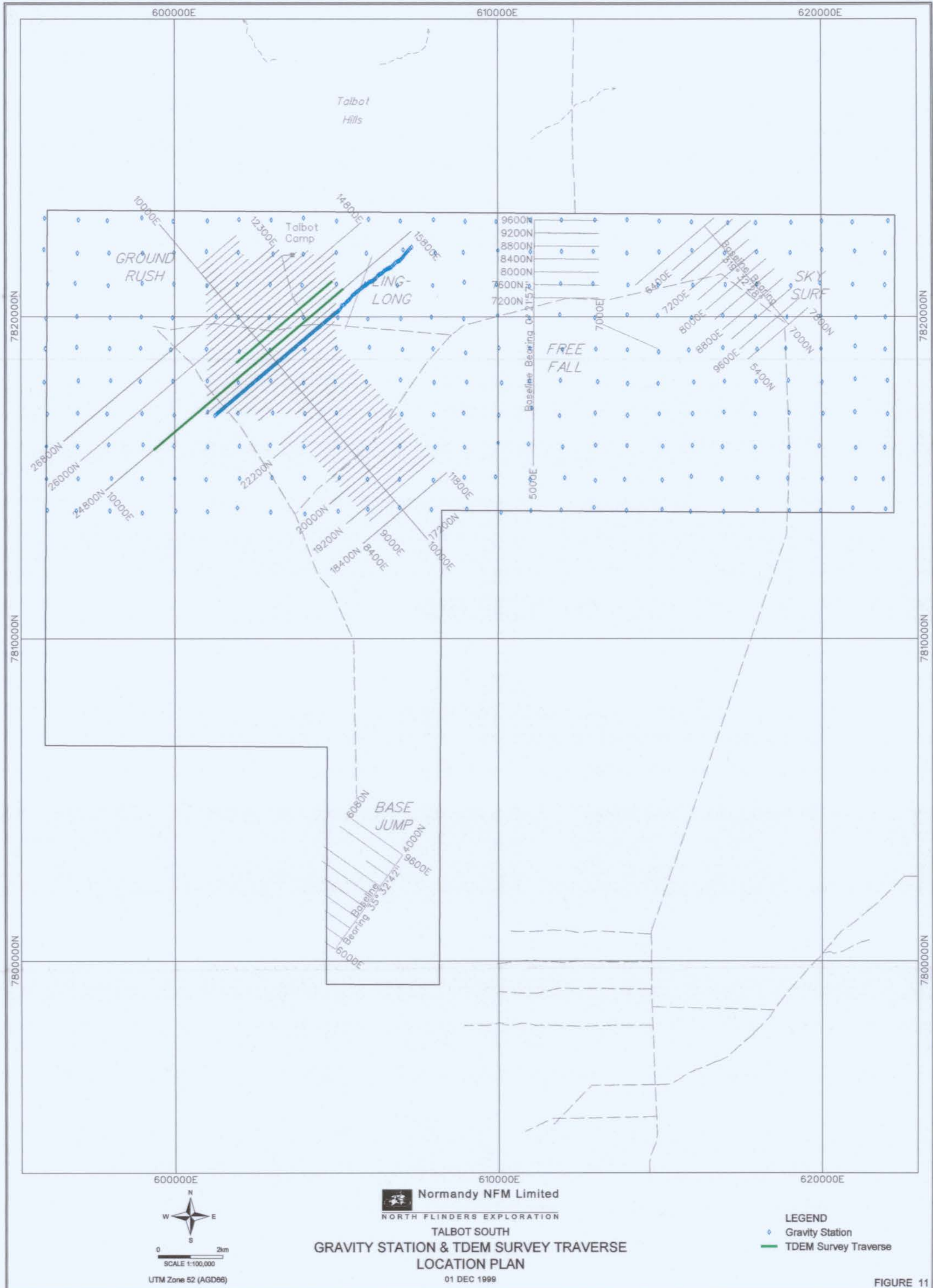
The gravity data gave a high over the sediments and a low over the granites (these lithologies are interpreted from the magnetics), of interest is a 2 milligal high coincident with the Groundrush mineralisation. The gradient array IP shows a weak chargeability high coincident with the Groundrush mineralisation.

8.4.3 Ground Magnetic Survey

A series of ground magnetic surveys were conducted over the entire strike length of the Groundrush aeromagnetic anomaly with coverage extending significantly along strike in both directions (Figure 3). The surveys were undertaken in a series of campaigns which necessitated some overlap of the old and new traverses to allow for a better correlation of the surveys.

The survey was undertaken with the objective of providing ground control for the aeromagnetic anomalies and geological definition of the magnetic sources. In total, 34 lines were surveyed comprising 155.26 line kilometres (Table 15). The survey was conducted by NFM personnel by the methods outlined in Appendix 3 of this report.

Data for all the ground geophysics is provided in a digital format in the Appendix 2.



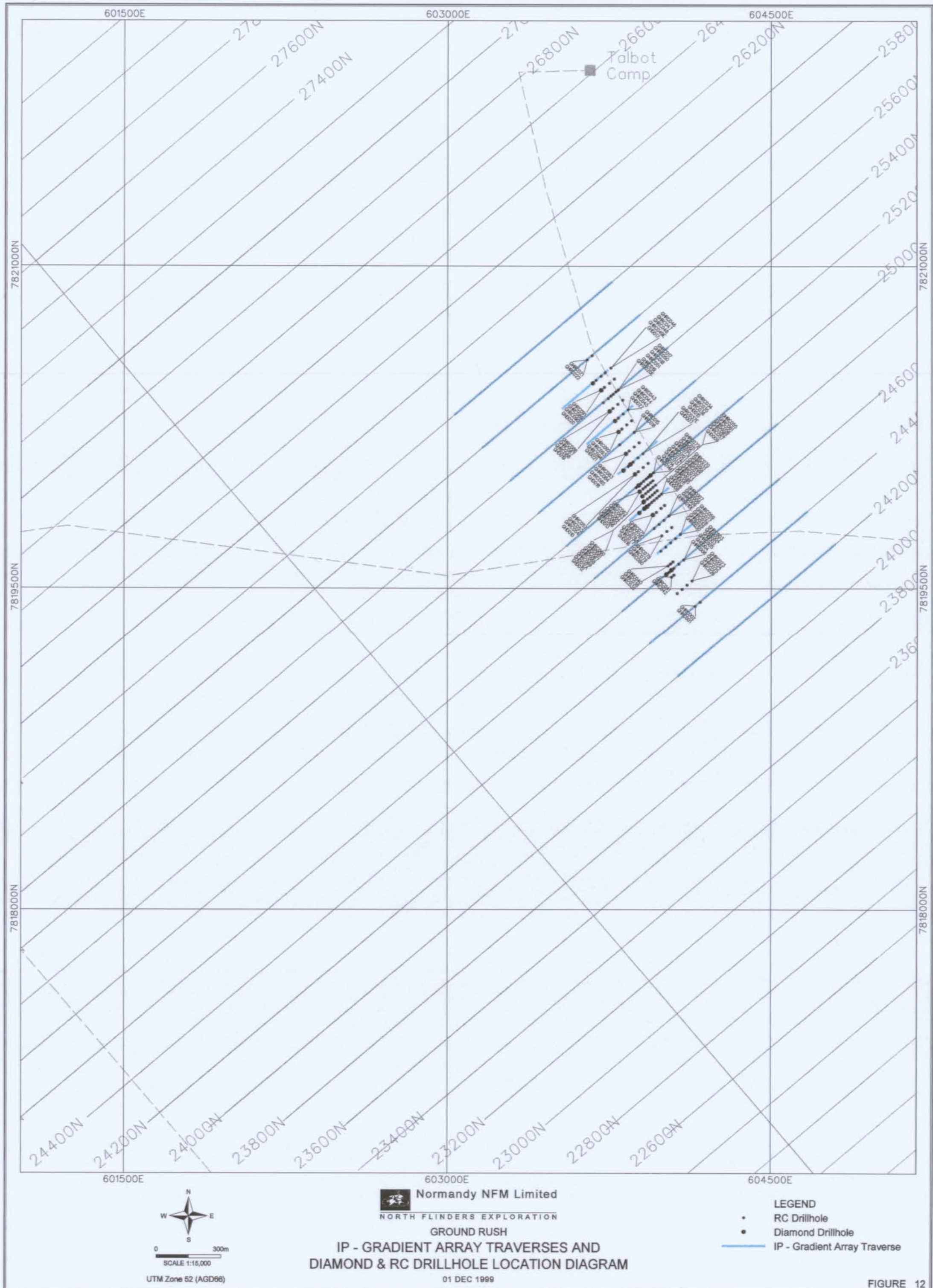


Table 16: Groundrush Ground Magnetic Survey Details

Date	Line ID	Traverse start/finish	Length (km)	Comments
March 1999	26800N	9520-12280E	2.76	Continuous sampling rate with GSM-19 & @ 5m with G-856
	26800N	8480-10000E	1.52	
	26000N	8480-13680E	5.2	
	25600N	10000-12320E	2.32	
	25400N	12200-10000E	2.2	
	25200N	10000-12200E	2.2	
	25000N	12100-10000E	2.1	
	24800N	13000-7480E	5.52	
	24800N	13000-11960E	1.04	
	24600N	10000-12000E	2.0	
	24400N	12200-10000E	2.2	
	23400N	8400-11800E	3.4	
	22400N	9800-11000E	1.2	
	10000E	22400-27800N	5.4	
April 1999	18400N	11800-8400E	3.4	Continuous sampling rate (GSM-19)
	19200N	11800-8400E	3.4	
	20000N	11800-8400E	3.4	
	22400N	11800-8400E	3.4	
	24800N	7600-3400E	4.2	
	24800N	12880-15800E	2.92	
	26000N	13560-14800E	1.24	
	26000N	8600-3400E	5.2	
	26800N	3400-8600E	5.2	
May 1999	22200N	10520-10000E	0.52	Continuous sampling rate (GSM-19)
	22600N	9600-10920E	1.32	
	22800N	11000-9400E	1.6	
	23000N	9200-11200E	2.0	
	23200N	9000-11320E	2.32	
	23600N	11720-8480E	3.24	
	23800N	8280-11920	3.64	
	24000N	12000-8000E	4.0	
	24200N	7800-12200E	4.4	
	24400N	12400-7600E	4.8	
	24600N	7280-12600E	5.32	
	25000N	13000-7680E	5.32	
	10000E	22400-17200N	5.2	
	10000E	22200-22600N	0.4	
	10000E	27600-30000N	2.4	
	28000N	10000-10520E	0.52	
	27800N	10520-10000E	0.52	
	27600N	100000-10520E	0.52	
	27400N	10520-9680E	0.84	
	27200N	9880-12320E	2.44	
	27000N	12320-9800E	2.52	

Table 16: Groundrush Ground Magnetic Survey Details (continued)

Date	Line ID	Traverse start/finish	Length (km)	Comments
	26400N	9320-12320E	3.0	
	26400N	9320-12320E	3.0	
	26200N	12320-8680E	3.64	
	25800N	8440-13600E	5.16	
	25600N	8400-13400E	5.0	
	25400N	13000-8000E	5.0	
	26600N	9480-12320E	2.84	
	25400N	13200-12920E	0.28	
	25200N	12960-7880E	5.08	
TOTAL			155.26	

8.4.4 Regolith Sampling

Through the year advantage was taken of the sumps dug for diamond drilling over the Groundrush mineralisation on sections 25000N and 24400N (Figure 13). The study was undertaken to study the distribution of Au in the cover over Groundrush. The sumps allowed close spaced samples to be collected as well as examining the material in situ. "Whole rock" samples were collected at 20cm intervals down the face of the sump, where possible a second -80# sample was also collected from the same interval. The "whole rock" samples were pulverised prior to analysis, all of the analyses were done by Genalysis using the B/ETA method for gold and B/AAS method for Arsenic.

Table 17: Groundrush Sump Sampling Details

Sample Medium	Sample Numbers	No. of Samples	Laboratory	Elements
-80# soil Samples	3211036-3211050	15	Genalysis	Au, As
"Whole Rock"	3211101-3211139	39	Genalysis	Au, As

Assay results for the twinned sample mediums had a good correlation although the soil samples were often substantially lower. Gold results in the soils were 16-920ppb, for the "whole rock" they were 8.8-2750ppb. Arsenic results in the soils were 5-120ppm, for the "whole rock" they were <5ppm-250ppm.

8.4.5 Lag Sampling

A small trial programme of sampling was conducted over the Groundrush mineralisation (Figure 13). Samples were taken on 500x500m spacing to simulate likely reconnaissance techniques. As part of this study two different sample mediums were tested from each site, firstly the standard +2mm size fraction and then a +2-5mm size fraction.

Table 18: Groundrush Lag Sampling Details

Sample Numbers	No. of Samples	Laboratory	Elements
3193472-3193496	50	Genalysis	Au, Th, Mo, Sb, W, Bi, Sn, U, As, Pb, Ni, Fe, Cu, Zn, Co, Ag
3808580-3808600			
3809001-3809004			
		50	

Both sample mediums produced high order gold anomalies and subdued arsenic values.



8.4.6 Vacuum Drilling

An orientation programme of Vacuum drilling was undertaken over Groundrush this year (Figure 14). The aim of this drilling was part of a larger exercise to test the response of the mineralisation to different sample medium. Three sections were drilled (24400N, 24800N, 25200N) with 10m hole spacing over the interpreted mineralisation and 20m spacing on the flanks. Samples were collected from each drill hole but only those that corresponded to a 40m hole spacing were submitted for assay. Where possible three sample medium were collected from each hole, DSL (drilled stone line), mini BLEG (from the transported horizon immediately overlying bedrock) and BOH (bedrock sample from the bottom of the hole).

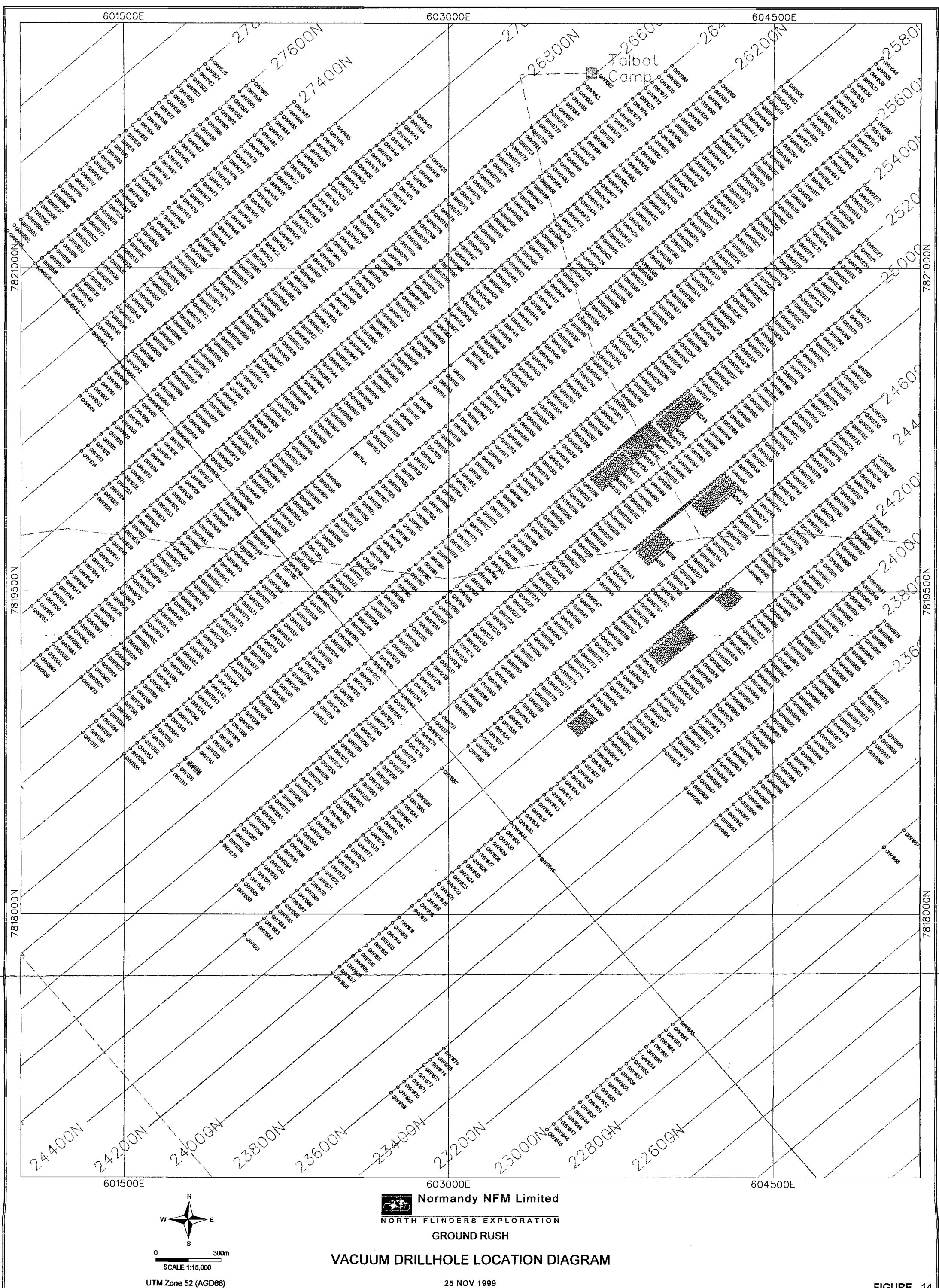
Following on from the orientation programme a large scale geochemical Vacuum drilling programme was commenced to cover the Groundrush mineralisation and surrounding prospective areas (Figure 14). A hole spacing of 40m and section spacing of 200m was used. Initially DSL samples were collected however given the sparse coverage of this material it was dropped as a sample medium.

All Vacuum drilling samples were sent to the Genalysis laboratory.

TABLE 19: Groundrush Vacuum Drillhole and Sample Details

Programme	Sample Medium	Drillhole ID	Sample Numbers	Number of Samples	Elements
Orientation	DSL	GHV001-120	3196201 - 252	25*	Au, As
	B/ETA soil	GHV001-076	3196003; 3196007; 3196011; 3196013; 3196015; 3196017; 3196019; 3196021; 3196025; 3196029; 3196031; 3196033; 3196035; 3196037; 3196039 - 040; 3196042 - 043; 3196045; 3196049; 3196053; 3196057; 3196061; 3196065; 3196067; 3196069; 3196071; 3196073; 3196075	28*	Au, As
	Mini BLEG	GHV001-120	3196001 - 002; 3196004 - 006; 3196008 - 010; 3196012; 3196014; 3196016; 3196018; 3196020; 3196022 - 024; 3196026 - 028; 3196030; 3196032; 3196034; 3196036; 3196038; 3196041; 3196044; 3196046 - 048; 3196050 - 052; 3196054 - 056; 3196058 - 060; 3196062 - 064; 3196066; 3196068; 3196070; 3196072; 3196074; 3196076 - 119; 3196150 - 178	44*	Au, Cu, Ag
	BOH	GHV001-120	3210317 - 3210434	44*	Au, As
Geochemistry	DSL	GHV121-150	3196253 - 3196272	20	Au, As
	Mini BLEG	GHV121-1676	3194885 - 5000; 3195201 - 400; 3196120 - 149; 3196179 - 200; 3196301 - 400; 3198301 - 500; 3199470 - 500; 3199502 - 600; 3211001 - 035; 3211051 - 100; 3211140 - 375; 3211406 - 441; 3211501 - 900	1555	Au, Cu, Ag
	BOH	GHV121-1676	3210317; 3210321; 3210339; 3210343; 3210435 - 808; 3210810 - 3211000; 3235301 - 530; 3235557 - 587; 3236001 - 250; 3236301 - 320; 3236369 - 681; 3236701 - 800; 3237551 - 600	1563	Au, As, +/-Ag, Cu, Zn
Total		1676		3279	

* These are the number of samples sent for assay, during the orientation programme extra samples were collected but not sent for assay.



The orientation Vacuum programme produced significant gold anomalism associated with the Groundrush mineralisation from both the BOH and mini BLEG sample mediums. Mini BLEG anomalism was recorded up to 300m from the mineralised zone. DSL gold results showed a far greater spread with no well defined anomalies. Arsenic results in the BOH samples were generally subdued.

The geochemical Vacuum drilling generated a number of anomalies with elevated gold values in both BOH and mini BLEG samples. Frequently gold anomalism in the BOH sample was reflected by mini BLEG anomalism, arsenic anomalism was rare. The main anomalies produced were a 700m long zone 400m to the east of the Groundrush mineralisation, two 400m long zones along strike to the south of Groundrush. The final anomaly is a 1.4km zone 450m west of Groundrush.

The Vacuum drilling also provided greater knowledge of the surrounding bedrock. The region is dominated by coarse meta sediments with thin metamorphosed layer parallel dolerites. The dolerites are more common and more deeply weathered to the east of the Groundrush mineralisation.

8.4.7 RAB Drilling

There have been three phases of RAB drilling through the past field season. The first phase of drilling was intended to develop an understanding of the regolith cover and therefore the most appropriate sampling medium. Holes were drilled on 800-1400m spaced sections with 100-500m between holes (Figure 15). All holes were drilled to recognisable bedrock.

A number of water search holes were drilled in areas thought to be prospective from interpretation of aerial photographs and spot imagery. All of these holes were vertical and samples were collected from six metre composites.

The third phase of overlap RAB drilling tested anomalies derived from the geochemical Vacuum drilling, Regolith RAB drilling and EM surveys. These targets were all peripheral to the Groundrush mineralisation with most of the drilling concentrating in the Footwall and along strike from the identified mineralisation. Holes were spaced at 25m along section and drilled to a nominal depth of 55m.

TABLE 20: Groundrush RAB Drilling

Programme	Line	Drillholes	Azi (grid)	Dip	No. Holes	Metres	No. Samples
Regolith*	18400N	GHRB251-267,	90	-60	17	541	177
	19200N	GHRB232-234, 238-250	90	-60	16	441	147
	20000N	GHRB215-231	90	-60	17	671	223
	22400N	GHRB206-214, 186-196	90	-60	20	723	240
	23400N	GHRB169-185	90	-60	17	650	215
	24800N	GHRB147-168, 268-280, 327-343	90	-60	52	1769	585
	26000N	GHRB122-146, 281-299	90	-60	44	1178	389
	26800N	GHRB107-121, 300-326	90	-60	42	1465	486
Water Search		GHRB197-205		-90	9	527	87
Overlap**	22400N	GHRB479-499	90	-60	21	1414	466
	24200N	GHRB500-501	90	-60	27	1574	524
	24400N	GHRB408-413, 456-466	90	-60	17	833	275
	24600N	GHRB439-444	90	-60	6	333	110
	24800N	GHRB394-407, 452-455, 502-508	90	-60	25	1418	467

TABLE 20: Groundrush RAB Drilling (continued)

Programme	Line	Drillholes	Azi (grid)	Dip	No. Holes	Metres	No. Samples
	25200N	GHRB371-393, 445-451, 473-478	90	-60	36	1949	645
	25400N	GHRB364-370, 467, 235-237	90	-60	11	611	301
	25600N	GHRB354-363, 469-472	90	-60	14	825	271
	25800N	GHRB344-353, 468	90	-60	11	616	203
TOTAL					402	17538	5811

* All samples from the Regolith and water search RAB programmes were sent to Analabs and analysed for Au and As.

** All samples from the Overlap RAB programme were sent to Amdel and analysed for Au, As, Ag, Bi, Cd, Co, Cu, Mo, Ni, Pb, Sb, Se, Te and Zn. With the exception of GHRB 235-237, these samples were sent to Analabs.

TABLE 21: Groundrush Best RAB Drill Results

Section	Drillhole	Depth Downhole (m)	Intercept (down hole m)	Geology (or comments)
25800N	GHRB 352	4-10m	6m@ 0.37g/t	Dolerite with associated quartz veining
25600N	GHRB 361	22-31m	9m@ 0.38g/t	Dolerite with associated quartz veining
25600N	GHRB 362	34-40m	6m@ 0.26g/t	Dolerite with associated quartz veining
24800N	GHRB 395	16-19m	3m@ 0.5g/t	Dolerite
24200N	GHRB 429	16-55m	39m@ 0.2g/t	Dolerite with associated quartz veining
22400N	GHRB 495	22-25m	3m@ 0.65g/t	Dolerite with associated quartz veining
22400N	GHRB 494	7-19m	12m@ 153ppm arsenic	Dolerite with associated quartz veining
22400N	GHRB 496	46-75m	27m@ 159ppm arsenic	Dolerite with associated quartz veining

Regolith conditions surrounding Ground Rush are typically shallow transported regolith overlying moderately to deeply weathered residual regolith. Induration in the form of silcrete is rare but when it does occur it overlies arkosic sediments in areas of deeper transported regolith cover or on the margins of granites. The average depth of this cover material is five metres. Regolith drilling identified a palaeo drainage channel to the south east of Groundrush where regolith cover increases to 25m. Indurated bands are common in parts of the drainage channel. The drilling indicated that Vacuum coverage was possible over all of the area with the exception of the deeper paleo drainage zones and the indurated areas. The best results came from three holes on 22400N, 2km along strike from Groundrush in the paleo channel. All three holes returned results >58ppb Au and up to 237ppm As.

The nine holes drilled to the north of the Groundrush grid in search of water intersected predominantly quartz arenites, cherts and laminated siltstones. Three holes (GHRB 198, 201, 202) returned fresh water flow greater than 1L/s. The best water flows were generally in the cherts and siltstones.

Overlap drilling of the footwall vacuum anomaly intersected dolerites with some anomalous intersections. Drilling immediately to the south of Groundrush mineralisation identified more dolerites and low order gold anomalies, further south still were more significant gold intersections. To the west of Groundrush RAB drilling intersected both dolerite and greywacke but there were few anomalous results.

8.4.8 RC Drilling

A total of 95 RC holes were drilled during the year in four phases. The first phase of drilling occurred on 200m spaced sections with 30m spaced holes, this drilling was aimed at verifying earlier RAB drilling and testing the mineralisation to 100Vm. Follow up drilling closed the section spacing down to 100m along strike. The third phase of drilling focused on close spaced drilling in the centre of the mineralised body. Drilled on 25m sections and 15m spaced holes, it was hoped that this drilling would better define the orientation of the mineralisation and test the continuity of grade along strike and down dip. A fourth phase of RC drilling closed up the section spacing to 50m with 30m spaced holes. With the addition of the final phase of drilling it is hoped that there will be sufficient information to calculate a resource for the Groundrush mineralisation (Figure 16).

Samples were collected at 1m intervals and then split using a three tier riffle splitter. Where the sample was wet grab samples were taken. A total of 10196 samples were analysed by Analabs for gold by method P625 (see details in Appendix 1).

TABLE 22: Groundrush RC Drill Program

Section	Drillhole ID	Azimuth	No of Holes	Metres	Samples*
24400N	GHRC001-002	45°	2	234	237
24500N	GHRC023-026	45°	4	432	435
24575N	GHRC041-042	45°	2	258	261
24600N	GHRC003-006	45°	4	486	491
24625N	GHRC038-040	45°	3	374	378
24700N	GHRC027-030,059	45°	5	529	533
24750N	GHRC078-080	45°	3	306	304
24800N	GHRC007-010	45°	4	480	565**
24850N	GHRC075-077	45°	3	270	271
24900N	GHRC031-033,058,070-071,095	45°	7	720	721
24925N	GHRC060-061,067-069	45°	5	490.5	488
24950N	GHRC055-057,081-082	45°	5	498	499
24975N	GHRC062-066	45°	5	476	471
25000N	GHRC011-014,072-074	45°	7	768	775
25050N	GHRC052-054	45°	3	306	308
25100N	GHRC034-037	45°	4	436	440
25150N	GHRC083-085	45°	3	300	306
25200N	GHRC015-016	45°	2	252	255
25250N	GHRC092-094	45°	3	270	270
25300N	GHRC043-045	45°	3	360	363
25350N	GHRC086-088	45°	3	288	280
25400N	GHRC017-020,050-051	45°	6	630.5	636
25450N	GHRC089-091	45°	3	288	285
25500N	GHRC046-049	45°	4	402	406
25600N	GHRC021-022	45°	2	216	218
TOTAL	25 lines		95	10070m	10196

* Standards were inserted into the sample sequence every 50-100 samples.

** GHRC009 double sampled from 40-120m.

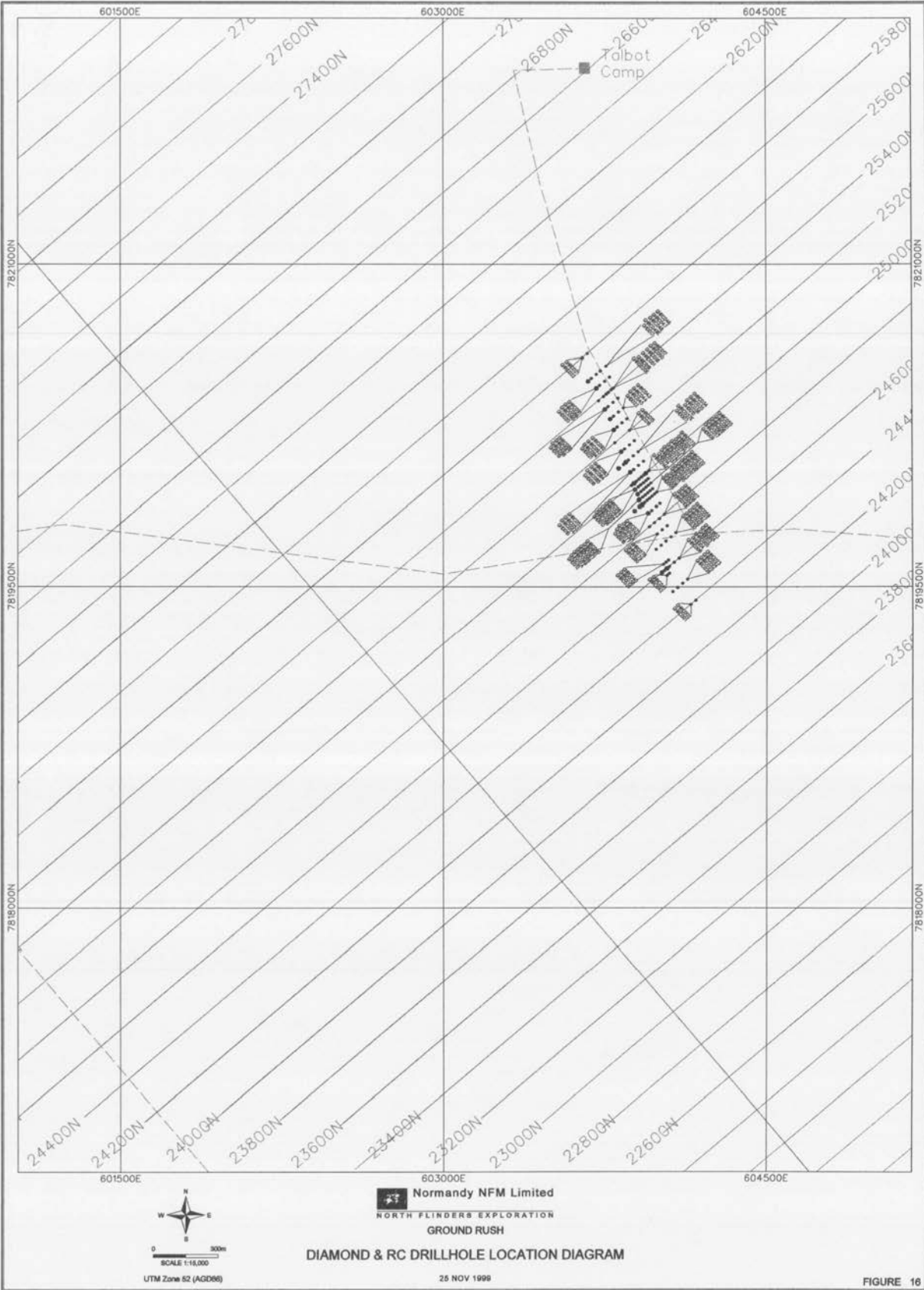
Best results are summarised below while complete assay results and drill hole logs are included as part of Appendix 3.

TABLE 23: Intersections from RC Drilling (>2.5g/t)

Hole No.	Section	Easting	Depth Downhole (m)	Intersection g/t (uncut)	Geology (or comments)
GHRC001	24400N	11325.5	75-76	1m @ 19.1	Dolerite
GHRC002	24400N	11295.5	107-112	5m @ 6.79	Dolerite
GHRC003	24600N	11395	11-25	14m @ 2.67	Dolerite
GHRC004	24600N	11365	29-48	19m @ 2.82	Dolerite
GHRC005	24600N	11335	60-62	2m @ 17.95	Dolerite
GHRC006	24600N	11305.5	90-104	14m @ 38.42	Arkose & Dolerite
GHRC009	24800N	11415	78-85	7m @ 4.86	Dolerite
GHRC010E	24800N	11385	120.1-128.5	8.4m @ 2.65	Dolerite
GHRC011	25000N	11536	28-34	6m @ 4.04	Dolerite
GHRC012	25000N	11505.5	23-30	7m @ 5.57	Dolerite
GHRC012	25000N	11505.5	57-72	15m @ 3.69	Dolerite
GHRC013	25000N	11475	74-78	4m @ 4.90	Dolerite
GHRC013	25000N	11475	88-97	9m @ 5.37	Dolerite
GHRC013	25000N	11475	104-116	12m @ 3.84	Dolerite
GHRC014E	25000N	11445	72-76	4m @ 6.50	Siltstone & Greywacke
GHRC014E	25000N	11445	123-133	10m @ 7.39	Dolerite
GHRC015	25200N	11604.5	17-35	18m @ 3.82	Dolerite
GHRC017	25400N	11675	0-6	6m @ 15.4	Dolerite
GHRC017	25400N	11675	16-20	4m @ 7.83	Dolerite
GHRC018	25400N	11645	20-51	31m @ 4.81	Dolerite
GHRC024	24500N	11330.5	78-83	5m @ 4.00	Dolerite
GHRC025	24500N	11300.5	76-83	7m @ 2.92	Dolerite
GHRC027	24700N	11430.5	22-57	35m @ 3.84	Dolerite
GHRC029	24700N	11370.5	106-115	9m @ 5.48	Dolerite
GHRC032	24900N	11470	0-2	2m @ 15.2	Colluvium
GHRC032	24900N	11470	27-47	20m @ 2.77	Dolerite
GHRC032	24900N	11470	58-70	12m @ 5.03	Dolerite
GHRC033	24900N	11440	95-107	12m @ 10.84	Dolerite
GHRC034	25100N	11570.5	13-20	7m @ 4.37	Dolerite
GHRC035	25100N	11540.5	35-43	8m @ 5.91	Dolerite
GHRC036	25100N	11511	76-90	14m @ 3.85	Dolerite
GHRC037E	25100N	11481	133-142	9m @ 5.57	Dolerite
GHRC039	24625N	11321.5	26-30	4m @ 14.18	Greywacke
GHRC039	24625N	11321.5	99-106	7m @ 5.42	Dolerite
GHRC045	25300N	11590.5	113-121	8m @ 3.55	Dolerite
GHRC049E	25500N	11625.5	97-111	14m @ 8.17	Dolerite
GHRC050	25400N	11661.5	9-33	24m @ 7.54	Dolerite
GHRC051	25400N	11631.5	21-70	49m @ 3.43	Dolerite
GHRC054	25050N	11500.5	61-74	13m @ 4.03	Dolerite
GHRC054	25050N	11500.5	79-90	11m @ 2.57	Dolerite
GHRC054	25050N	11500.5	100-108	8m @ 5.49	Dolerite
GHRC055	24950N	11520.5	15-28	13m @ 6.32	Dolerite
GHRC056	24950N	11490.5	42-68	26m @ 3.20	Dolerite
GHRC057	24950N	11460.5	82-103	21m @ 4.10	Dolerite
GHRC057	24950N	11460.5	115-119	4m @ 9.36	Dolerite
GHRC059	24700N	11460.5	0-3	3m @ 12.67	Colluvium
GHRC060	24925N	11510	26-34	8m @ 6.41	Dolerite
GHRC061	24925N	11495	29-52	23m @ 4.23	Dolerite

TABLE 23: Intersections from RC Drilling (>2.5g/t) – (continued)

Hole No.	Section	Easting	Depth Downhole (m)	Intersection g/t (uncut)	Geology (or comments)
GHRC062	24975N	11525	8-17	9m @ 5.12	Dolerite
GHRC062	24975N	11525	26-34	8m @ 4.10	Dolerite
GHRC063	24975N	11510	12-29	17m @ 7.26	Dolerite
GHRC063	24975N	11510	47-53	6m @ 5.24	Dolerite
GHRC064	24975N	11495	37-42	5m @ 6.03	Dolerite
GHRC064	24975N	11495	57-60	3m @ 11.85	Dolerite
GHRC064	24975N	11495	64-72	8m @ 8.48	Dolerite
GHRC065	24975N	11480	69-81	12m @ 7.91	Dolerite
GHRC065	24975N	11480	105-109	4m @ 22.03	Dolerite
GHRC066	24975N	11465.5	75-84	9m @ 4.85	Dolerite
GHRC066	24975N	11465.5	93-113	20m @ 3.44	Dolerite
GHRC067	24925N	11480	20-33	13m @ 2.81	Dolerite
GHRC067	24925N	11480	54-58	4m @ 6.65	Dolerite
GHRC067	24925N	11480	72-75	3m @ 8.74	Dolerite
GHRC068	24925N	11465	87-91	4m @ 8.64	Dolerite
GHRC068	24925N	11465	113-116	3m @ 7.98	Dolerite
GHRC069	24925N	11450	94-103	9m @ 7.33	Dolerite
GHRC070	24900N	11515	13-18	5m @ 7.59	Dolerite
GHRC071	24900N	11455.5	87-96	9m @ 7.48	Dolerite
GHRC073	25000N	11520	9-21	12m @ 4.70	Dolerite
GHRC073	25000N	11520	37-53	16m @ 3.11	Dolerite
GHRC074	25000N	11490.5	65-77	12m @ 7.75	Dolerite
GHRC076	24850N	11470.5	49-68	19m @ 7.63	Dolerite
GHRC077	24850N	11441.5	85-100	15m @ 11.49	Dolerite
GHRC078	24750N	11450.5	12-42	30m @ 5.23	Dolerite
GHRC079	24750N	11420.5	60-64	4m @ 5.43	Dolerite
GHRC081	24950N	11505.5	21-32	11m @ 7.29	Dolerite
GHRC081	24950N	11505.5	39-50	11m @ 3.32	Dolerite
GHRC083	25150N	11590	36-49	13m @ 2.84	Dolerite
GHRC084	25150N	11560	43-55	12m @ 9.83	Dolerite
GHRC085	25150N	11530	74-85	11m @ 5.27	Dolerite
GHRC086	25350N	11660.5	52-60	8m @ 17.29	Dolerite
GHRC087	25350N	11630.5	25-45	20m @ 6.65	Dolerite
GHRC088	25350N	11600.5	75-97	22m @ 5.12	Dolerite
GHRC089	25450N	11664.5	28-47	19m @ 5.77	Dolerite
GHRC095	24900N	11435.5	96-116	20m @ 5.10	Dolerite



8.4.9 Diamond Drilling

Twenty diamond holes were drilled during the past year and diamond tails were added to five RC holes (Figure 16). Core holes were drilled on most sections underneath the RC traverses to collect more detailed structural information of the mineralisation. Coring also extended the depth coverage over the Groundrush mineralisation to between 100-150Vm.

Samples for the precollars were collected at 1m intervals by riffle splitting unless wet, whereupon grab samples were taken. Core samples were continuous cut (CC) throughout and the half core was sampled on half metre intervals. A total of 1259 precollar samples and 4114 core were analysed by Analabs for gold by method P625 (refer to Appendix 1).

TABLE 24: Groundrush Diamond Drillhole Details

Drillhole ID	Section	Easting	Total Depth	Precollar		Core*	
				Metres	Samples	Metres	Samples
GHD003	24600N	11320.5	140.3	48	48	92.2	190
GHD004	24600N	11290	188	72.1	72	115.9	236
GHD005	25000N	11532.5	54.3	6.5	6	47.8	96
GHD006	24900N	11410.5	194.4	95.4	67	99	201
GHD007	25100N	11450.5	184.5	77.6	39**	106.9	219
GHD008	24900N	11380	215.2	77.6	40**	137.6	281
GHD009	24950N	11440.5	160.8	89.9	52**	70.9	145
GHD010	25050N	11481	149.1	71.5	44**	77.6	159
GHD011	24900N	11425.5	140.1	90	64**	50.1	101
GHD012	24925N	11427	173.9	84	24**	91.8	186
GHD012A	24925N	11430	72	72	36**		
GHD013	24975N	11445.5	151.3	83.5	74**	67.8	136
GHD014	25000N	11460	141.7	71.5	72	70.2	141
GHD015	25100N	11495	136.3	77.6	78	58.7	121
GHD016	24850N	11421	154.7	71.5	72	83.2	168
GHD017	25500N	11605.5	155.2	89.4	90	65.8	133
GHD018	25150N	11510	161.1	71.6	70	89.5	181
GHD019	25350N	11581	209.1	71.6	71	137.5	278
GHD020	25450N	11614.5	191.3	83.5	84	107.8	218
GHD021	25250N	11550.5	152.2	77.5	78	77.7	151
GHD022	25300N	11570.5	191	77.5	78	113.5	229
GHRC010E	24800N	11385	170.2			50.1	103
GHRC014E	25000N	11445	158.2			26.2	54
GHRC020E	25400N	11585	178.7			52.2	185
GHRC037E	25100N	11481	169.7			68.2	139
GHRC049E	25500N	11625.5	139.2			31.3	63
Total				1559.8m	1259	1989.5m	4114

* Standards were inserted into the sample sequence every 50-100 samples.

** 2m composite samples through all or part of the precollar.

All diamond drill holes were inclined at 60° toward 45° (magnetic).

TABLE 25: Intersections from Diamond Drilling (>2.5g/t)

Best results are summarised below while complete assay results and drillhole logs are included as part of Appendix 1.

Hole No.	Section	Easting	Depth Downhole (m)	Intersection g/t (uncut)	Geology (or comments)
GHD001	25200N	11575.5	46-54	8m @ 7.13	Dolerite
GHD002	25200N	11545.5	76-79.5	3.5m @ 5.77	Dolerite
GHD004	24600N	11290	129.5-133	3.5m @ 5.46	Dolerite
GHD005	25000N	11532.5	29.5-37.5	8m @ 4.72	Dolerite
GHD006	24900N	11410.5	132.5-143.5	11m @ 5.39	Dolerite
GHD007	25100N	11450.5	149.5-162	12.5m @ 5.82	Dolerite
GHD008	25000N	11380	159-191	32m @ 3.49	Dolerite
GHD009	24950N	11440.5	116-144	28m @ 4.79	Dolerite
GHD010	25050N	11481	98-106.5	8.5m @ 3.02	Dolerite
GHD011	25000N	11425.5	105.5-138	32.5m @ 3.05	Dolerite
GHD012	24925N	11427	84.5-87	2.5m @ 178.9	Siltstone
GHD012	24925N	11427	122-143	21m @ 8.67	Dolerite
GHD013	24975N	11445.5	68-69	1m @ 44.8	Dolerite
GHD013	24975N	11445.5	142.5-151.3	8.8m @ 4.62	Dolerite
GHD014	25000N	11460	77-116.5	39.5m @ 12.36	Dolerite
GHD015	25100N	11495	119-125	6m @ 4.36	Dolerite
GHD016	24850N	11421	103-119.5	16.5m @ 8.23	Dolerite
GHD018	25150N	11510	132-133	1m @ 36.15	Dolerite
GHD018	25150N	11510	139.5-147.5	8m @ 6.09	Dolerite
GHD018	25150N	11510	160-160.5	0.5m @ 43.2	Dolerite
GHD019	25350N	11581	113-126.5	13.5m @ 3.22	Dolerite
GHD022	25300N	11570.5	103-110	7m @ 57.67	Dolerite

Cross sections for the holes are attached to the rear of this report as Figures ??

Diamond and RC drilling in the last 12 months has defined a number of discrete steeply dipping mineralised zones within the Groundrush dolerite. Significant mineralisation has been identified along a strike length of 1200m between 24400-25600N and down to depths of 100-150Vm. Mineralisation is associated with multi stage quartz veins, chlorite alteration and sulphides (pyrite, pyrrhotite and arsenopyrite).

8.4.10 Petrology

Four petrology reports were commissioned during the reporting period, three from Pontifex and associates and a fourth from Mason Geoscience. 44 samples from RAB chips were thin sectioned and described, a further 14 samples from RC chips and 20 samples from diamond drill core were thin sectioned and described.

The rocks were described as plagioclase rich sandstones (meta arkoses), siltstone, claystone, quartz dolerite, tonalite porphyry and microdiorite. To date the bulk of the mineralisation has been contained within the dolerites.

8.4.11 Water Bore

A single water bore (TSWB02) was drilled adjacent to GHRB201 to the north of the main Groundrush grid (Figure 13). The hole was drilled to a depth of 61m with the water table sitting at 26m below surface. The hole was cased with PVC with slotted casing from 37-55m down hole, quartz gravel was packed around the outside of the casing. A flow rate of >1l/s was measured from the original RAB hole, there was a good flow of water when the water bore was airlifted however this flow rate was not measured.

9. EXPENDITURE INCURRED FOR THE REPORTING PERIOD

TABLE 26: Details of Exploration Expenditure for the Year to 5th November 1999

	Groundrush	Regional	EL7150 TOTAL
Employee Costs			
Salaries & Wages	880242.95	195145.40	1075388.35
Contractors/Consultants/Casuals	16118.53	3110.70	19229.23
Operating Costs			
Office Supplies/Printing	152.18	86.42	238.60
Courier/Freight/Postage	900.00		900.00
Publications/Maps/Subscriptions	175.90		175.90
Travel/Accommodation/Meals	11881.94	3674.38	15556.32
Field Supplies/Consumables	16150.17	72.50	16222.67
Field Living	143.40		143.40
Equipment Costs	17138.98	1965.40	19104.38
Communication	2542.42		2542.42
Vehicle Costs/Fuel	14937.62		14937.62
Drafting Services/Supplies	619.82	581.86	1201.68
Rehabilitation	56.70	355.00	411.70
Survey/Gridding	1411.20		1411.20
Tenement Costs		2220.00	2220.00
Traditional Landowners	94479.54	29261.35	123740.89
Laboratory Costs			
Diamond	57755.85		57755.85
RC	129442.45		129442.45
RAB/Aircore	50688.20	27186.10	77874.30
Vacuum	33990.31	1063.36	35053.67
Surficial (Rock chip etc)	2580.50	17584.30	20164.80
Sample Storage		344.10	344.10
Drilling Costs			
Diamond	288402.57		288402.57
RC	317134.25		317134.25
RAB/AC Drilling	208458.50	32986.75	241445.25
Vacuum	1044.35		1044.35
Other/Consumables	26546.32	1430.76	27977.08
Specialist Services			
Geophysics	18134.99	7773.94	25908.93
Geochemistry	70.00	2322.00	2392.00
Petrology	16815.00	2546.00	19361.00
Metallurgy	7280.00		7280.00
Environmental		4573.00	4573.00
Overheads			
Regional Office Allocation	168512.75	44768.82	213281.57
Field Costs Allocation	187542.31	40154.19	227696.50
Depreciation	109699.47	30670.21	140369.68
TOTAL \$	2681049.17	449876.54	3130925.71
COVENANT \$			300000.00

10. FORWARD PROGRAMME

Based on the results to hand and the likely exploration budget that will be available for the exploration licence, the following work is proposed. If however, during the course of the field programme, unexpected results are received or budgetary constraints applied, then this programme may be extensively altered.

10.1 Proposed Work

Freefall:

- Further regolith RAB drilling 1400m
- An expanded programme of Vacuum drilling programme 250 holes

Skysurf:

- Further regolith RAB drilling 600m
- An expanded programme of Vacuum drilling programme 370 holes

Basejump:

- Small programme of regolith RAB drilling 400m
- Soil sampling 400 samples, or
- Vacuum drilling programme 250 holes

Groundrush:

- Approximately 1400m RC drilling to complete the 50 x 30m drilling coverage along the entire 1200m strike length.
- Approximately 1400m precollars and 1200m diamond core for scout drilling down to 200Vm.
- Further RAB drilling of geochemical anomalies 3800m
- Extending coverage of geochemical Vacuum drilling 775 holes

10.2 Proposed Expenditure

Exploration expenditure on EL7150 is anticipated to exceed \$300000 for the 12 month period to 5th November 2000.

11. REFERENCE LIST / ANNUAL REPORT BIBLIOGRAPHY

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Reports to NT DME

- Adrichem, S.M., Longmire, R.A. First Annual Report for the EL7150 (Talbot South) for the Year to 5 November 1998.

APPENDIX 1 - DIGITAL SAMPLE DATA, ASSAYS AND LOGS

APPENDIX 2 – GEOPHYSICS SURVEY DATA

APPENDIX 3 - SAMPLING METHODS AND ANALYTICAL TECHNIQUES

1.1 SAMPLING METHODS

SURFACE AND VACUUM DRILL SAMPLES

LAG/DSL (Drill-derived Stone Line)

Lag is any hard residual surficial material varying from a coarse sand to rock fragments.

The sample is obtained via a shallow surface scrape, sieved to obtain approximately 250g of material and collected into a plastic zip seal bag. The size of the sieved fraction, which is variable from project to project, is listed in the sample logs.

Reconnaissance spaced sample sites are not marked, however infill sample sites are flagged in the absence of a local grid. Sample type, quality, description and size is noted at the time of collection and recorded via codes outlined in Appendix 2.

The samples are submitted for multielement analysis to provide a screen for other mineralisation styles.

A **DSL** sample is a drill derived "buried" lag sample. Other than using a drill rig to bring the sample to surface, collection methods are identical to lag.

SOIL

Soil material is sieved to obtain approximately 200g of a -2mm sample fraction. The sample is collected into a plastic zip-seal bag which is enclosed into another to prevent contamination during transport.

Reconnaissance spaced sample sites are not marked, however infill sample sites are flagged in the absence of a local grid.

BCL/BLEG (Bulk Cyanide Leach/Bulk Leach Extractable Gold)

Many of the low relief areas have variable amounts of drainage sediments (typically arenitic alluvium +/- clay horizons) which are sampled via a bulk cyanide leach. Sufficient soil is sieved to obtain 5kg of -20# sample which was double bagged within a plastic liner to prevent cross contamination.

The samples may be subcategorised in the NFM database to distinguish sample derivation:

Code	Derivation	Description
VBCL	drill derived	usually vacuum, however some are sourced from RAB drillholes (parent drillhole listed next to sample number in datasheets)
DBCL	drainage	stream sediment from a defined drainage channel
SBCL	soil	surface BCL sample Note: Some drill derived samples have been coded SBCL where the sample represented a buried residual soil.

Regolith/Sump Sampling

"Whole rock" samples were collected at 20cm intervals down the face of the sump, where possible a second -80# sample was also collected from the same interval. The "whole rock" samples were pulverised prior to analysis, all of the analyses were done by Genalysis using the B/ETA method for gold and B/AAS method for Arsenic.

VACUUM DRILLING

Vacuum drilling is undertaken by Normandy NFM using an EDSON 200 series vacuum drill rigs. Holes are vertical with sample collected in the collection flask attached to the rigs vacuum circuit. Sample produced from an entire 1.8m rod filled the collection flask. The depth of hole termination was a function of the depth of transported regolith. The aim was to penetrate in-situ regolith with at least two drill rods. All holes are plugged below ground and are only marked if positioned on an established grid.

DSL Samples

As described above. The sample is sieved to a -5mm +2mm fraction and approximately 250g is collected into a plastic zip seal bag.

Vacuum/BOH Samples

The sample is collected in a perspex tube in which relative down hole depth proportions are retained. The geologist may choose to sample a particular horizon of interest as a selected sample or collect a composite sample. For this reason, sample intervals are variable. Specific sample intervals are listed in the drillhole logs.

The BOH sample represents a basement sample usually collected from the last rod of the hole. Approximately 2kg of sample was bagged and sent to Genalysis Laboratories where it was crushed then pulverised to a nominal 90% minus 75 micron. Gold (1ppb) was assayed for by Graphite Furnace AAS after aqua-regia digestion. Arsenic (5ppm) was assayed for Flame AAS.

Mini BLEG

The mini BLEG sample represents the transported regolith immediately overlying basement. This sample was sieved to pass -2mm with the +2mm fraction discarded. This sample was sent to Genalysis Laboratories where it was subjected to a 24 hour bulk cyanide leach bottle roll. Gold (0.01ppb) copper (0.01ppm) and silver (0.1ppb) were then assayed for by Inductively Coupled Plasma Mass Spectrometry (detection limits follow each element). The initial sample batch sent to Genalysis were assayed for by the wrong technique, namely gold (1ppb) by Graphite Furnace AAS after aqua-regia digestion and arsenic (5ppm) by Flame AAS. These samples were recollected and assayed by the cyanide leach method.

RAB & AIRCORE DRILLING

RAB drilling is largely undertaken by Rockdril Contractors Pty Ltd.

All holes are rehabilitated on completion of drilling by using available drill spoil to back fill the hole.

RAB drillholes are typically composite sampled at 3m intervals where the geology is considered to be prospective. Depending on the program budget, the drillhole may be comprehensively sampled from surface, sampled only at particular lithologies or have been restricted to a bottom of hole sample. Drill spoil is riffle split to obtain 2kg composite samples. While this sample is customarily a 3m composite sample, the sample interval is ultimately left to the geologist's discretion, the first interval is typically 4m. The sample intervals are clearly documented in the drillhole logs accompanying this report.

RAB drill samples were sent to Analabs for gold and arsenic determination by methods P625 (Au) and A603 (As).

RAB holes are rehabilitated on completion of drilling by using available drill spoil to back fill and mound the hole.

RC DRILLING

RC drilling is undertaken by Rockdril Contractors Pty Ltd. All holes are capped on completion as a temporary measure, with the hole number recorded in black paint on the plastic cap. Permanent rehabilitation is achieved by the removal of the protruding collar and insertion of a concrete plug 0.3m below ground. The cavity is back filled and mounded. The hole number is inscribed on a metal tag attached to a wooden peg, positioned adjacent to the plug.

Composite Samples

Drill cuttings are collected over 1m intervals and riffle split to obtain 2kg composite samples. When wet, grab samples are taken.

RC drill samples were sent to Analabs for gold analysis by method P625 and reassay by methods F630 and F642 if necessary.

DIAMOND DRILLING

Diamond drilling is undertaken by Rockdril Contractors Pty Ltd. All holes are capped on completion as a temporary measure, with the hole number recorded in black paint on the plastic cap. Permanent rehabilitation is achieved by the removal of the protruding collar and insertion of a concrete plug 0.3m below ground. The cavity is back filled and mounded. The hole number is inscribed on a metal tag attached to a wooden peg, positioned adjacent to the plug.

CC (continuous cut)

Half cut is typically sampled at 0.5m intervals, however this interval is adjusted where necessary to conform to lithological boundaries. The sampling intervals are clearly documented in the drillhole logs (Appendix 3). The sample is crushed on site.

Scan (scan cut)

10cm intervals of half cut core are collected every 30cm over a 3m length, providing a representative 3m composite sample. This is undertaken as a cost effective method of analysing less prospective rock units. The sample is crushed on site.

SF (screen fire assay)

Uncrushed cut core is dispatched for Screen Fire assay when visible gold is observed.

F (fire assay)

Uncrushed cut core from the interval bracketing the SF sample is dispatched for fire assay.

Core sample analysis methods are identical to RC drill sample analysis as described above.

Diamond and RC holes are capped on completion as a temporary measure, with the hole number recorded in black paint on the plastic cap. Permanent rehabilitation is achieved by the removal of the protruding collar and insertion of a concrete plug 0.3m below ground. The cavity is back filled and mounded. The hole number is inscribed on a metal tag attached to a wooden peg, positioned adjacent to the plug.

All drillhole collars are accurately located by company surveyors utilising theodolite/EDM equipment with reference to pre-established x,y,z control.

All diamond and RC drilling was undertaken by Rockdril Contractors Pty Ltd.

APPENDIX 4 – PETROLOGICAL DESCRIPTIONS

Report #	Author	Date	Work	Geo	Prospect				Notes	Central
Petrology #	Count	ID	Type	NFMSample #	From To	Easting	Northing	Description		EL7150

Central										
EL7150			Talbot South							

P7838	PU	6/05/1999	TS	JDE	Ground	Rush	Photos			
P05460	1	GHRB172	DC		24	33	604707.09	7818581.21	Chips of poorly sorted matrix supported sandstones or wackes with plagioclase-quartz-alkali feldspar as sand-sized grains in a matrix of weathered biotite-sericite. No detrital muscovite. Not typical Madigan Beds.(11180E,23400N)	
P05461	2	GHRB175	DC		30	42	604264.99	7818205.78	Weathered muscovite-biotite slate and metasiltstone. Also chips of quartz-rich to arkosic wackes with fresh to clay-altered feldspar (mostly microcline), in a weathered formerly sericite-biotite-rich matrix.(10600E,23400N)	
P05462	3	GHRB184	DC		22	31	602892.94	7817040.67	Chips variably fresh and weathered metadolerite, heterogeneous amphibole-rich rock, also metapelite (homfels?).(8800E,23400N)	
P05463	4	GHRB178	DC		33	48	603815.26	7817823.88	Chips variably of siltstones, also of wackes with polycrystalline quartz in a fine quartz-sericite schistose matrix with minor to abundant biotite. Zircon is present, and in one chip abundant zircon occurs in a clot of biotite, as seen in mafic clots in granitoids. This suggests derivation from a granitoid with minimal transport. Rarely siltstone seen in bedded contact with wacke.(10010E,23400N)	
P05464	5	GHRB127	DC		15	29	603954.09	7821352.74	(2 chips 15-21m / 3 chips 27-29m) Weathered metadolerite, also coarse to very coarse plagioclase-rich quartzofeldspathic wackes +/- metasiltstone, cut by adularia veins and quartz veins +/- sericite after plagioclase.(12400E,26000N)	
P05465	6	GHRB132	DC		15	24	603191.84	7820705.45	Three chips of very weathered quartzofeldspathic wacke and two of metasiltstone.(11400E,26000N)	
P05466	7	GHRB135	DC		6	9	602658.27	7820252.35	Meta-quartz dolerite with actinolite and rare biotite.(10700E,26000N)	
P05467	8	GHRB136	DC		27	36	602566.8	7820174.68	Generally quartz-poor, sericite-rich pelitic schists with disseminated biotite +/- magnetite. Also altered amphibole-rich chips with clays after feldspars and/or biotite, usually with magnetite, disseminated or in layers. Possibly similar to some Blake Beds metasediments, possibly including a BIF component.(10580E,26000N)	
P05468	9	GHRB151	DC		30	36	604238.42	7820019.89	Chips of sericitic metapelite (slates). Also chips of altered apparent quartzofeldspathic rocks, possibly sandstone or sheared microgranite, and of sparsely plagioclase porphyritic microgranite(?). One chip of vein quartz.(11754E,24800N)	
P05469	10	GHRB141	DC		15	21	601819.8	7819540.34	Arkosic gritty wackes with quartz, microcline > plagioclase. Also siltstone with possibly authigenic alkali feldspar and alkali feldspar-veins.(9600E,26000N)	
P05470	11	GHRB161	DC		33	39	602520.31	7818560.91	Quartz-rich to arkosic wackes, quartz-rich medium grained sandstone (matrix-supported) and metasiltstone.(9500E,24800N)	
P05471	12	GHRB146	DC		12	18	600981.32	7818828.33	Pebbly to gritty arkosic wackes, finer-grained quartz-rich wacke and metasiltstone. All with quartz-sericite-biotite schist as a matrix, or comprising the bulk of the rock. Some alkali feldspar veins.(8500E,26000N)	
P05472	13	GHRB119	DC		12	36	601454.42	7820279.59	12 -15m - Weathered metasiltstones and quartz-rich wacke. 30-36m - Arkosic Wacke.(9800E,26800N)	
P05473	14	GHRB148	DC		33	39	604723.21	7820431.57	Chips of weathered altered basalt to dolerite. Also chips of grain-supported plagioclase-rich sandstone, locally in contact with claystone to siltstone.(12390E,24800N)	
P05474	15	GHRB155	DC		15	21	603358.79	7819272.93	Quartz-rich wackes, highly weathered. Also possible tuff, and a metasiltstone (both biotite-rich).(10600E,24800N)	

Report #	Author	Date	Work	Geo	Prospect	Notes				Central	
Petrology #	Count	ID		Type	NFMSample #	From	To	Easting	Northing	Description	EL7150
P05475	16	GHRB224		DC		33	39	606008.41	7815225.77	Quartz-rich to biotite-rich metamorphosed wackes. Also a quartz-biotite schist with minor plagioclase, representing a metmorphosed fine sandy siltstone.(10000E,20000N)	
P05476	17	GHRB157		DC		30	36	603084.38	7819039.9	(30-33m & 33-36m) One chip unusually metamorphosed quartzofeldspathic wacke. The other chip weathered metadolerite with rare quartz, as well as albitised plagioclase, clays after amphibole and biotite, and rare epidote.(10240E,24800N)	
P05477	18	GHRB164		DC		16	25	602062.97	7818172.54	(16-19m & 22-25m) Biotite-muscovite-quartz(?) schist/hornfels (metasiltstone). Also chips of muscovite-biotite-bearing leucocratic microgmaite similar to Old Pirate Microgranite.(8900E,24800N)	
P05478	19	GHRB208		DC		33	39	605522.07	7817961.36	Matrix-rich sandy to gritty pelites and partly sheared vein quartz.(11400E,22400N)	
P05479	20	GHRB194		DC		12	30	604454.92	7817055.16	(12-15m, 21-24m & 27-30m) Gritty arkosic wacke, arkosic to quartz-rich wackes and a sandy metasiltstone (muscovite-biotite schist) facies. The wackes have quartz and microcline in a quartz-muscovite-biotite matrix with opaque grains (?magnetite or sulphide).(10000E,22400N)	
P05480	21	GHRB228		DC		45	48	605398.61	7814707.94	Arkosic (microcline-bearing) wackes with or without metamorphic muscovite and magnetite as well as biotite, a weathered silicified granitoid and a layered biotite-muscovite-alkali feldspar hornfels with disseminated magnetite as in Blake Beds metasediments.(9200E,20000N)	
P7846	PU	1/06/1999	TS	CC	Ground Rush	photos					
P06822	1	GHRC012		DC	3141091	60	61	603921	7820010	Weathered albite-chlorite-smectite-leucoxene-limonite altered granophyric quartz dolerite. Abundant limonite possibly at least partly after carbonate +- sulphide	
P06823	2	GHRC012		DC	3141104	72	73	603921	7820010	Weakly sericite-clay-altered biotite-quartz microdiorite. Veins of adularia contain limontie after pyrite.	
P06824	3	GHRC013		DC	3141240	86	87	603897	7819990	Albite-hornblende, to albite-chlorite-sphene-pyrite-altered, granophyric quartz dolerite. Rarely albite-quartz veins.	
P06825	4	GHRC013		DC	3141265	110	111	603897	7819990	Weakly chloritised and sericitised, plagioclase porphyritic biotite microtonalite.	
P06826	5	GHRC014		DC	3141304	29	30	603875	7819971	Metamorphosed matrix-poor quartzofeldspathic fine to medium grained sandstone with schistose biotite and areas of quartzofeldspathic micromosaic.	
P06827	6	GHRC014		DC	3141311	36	37	603875	7819971	Microcline-rich arkosic coarse grained sandstone, with biotite and a sparse quartzofeldspathic micromosaic.	
P06828	7	GHRC014		DC	3141348	73	74	603875	7819971	Biotite-bearing but eseentially grain-supported plagioclase-rich sandstone and sandy siltstone. Rare quartz veins.	
P06829	8	GHRC014		DC	3141353	77	78	603875	7819971	Plagioclase-rich grain-supported coarse sandstone with biotite, very minor chlorite and sericite, cut by adularia veins and quartz veins: minor leucoxene, apatite and zircon.	
P06830	9	GHRC014		DC	3141391	115	116	603875	7819971	Meta-quartz dolerite with hornblende, albite and sphene in most chips as well as granophyre and quartz. Rare chips with chlorite or with carbonate, some chips with pyrite. Also has quartz veins and laminated carbonate-chlorite veins.	
P06831	10	GHRC017		DC	3141741	77	78	603791	7820425	Plagioclase-rich sandstones and siltstones with biotite and/or chlorite. Also albite-chlorite-altered basalts with or without plagioclase phenocrysts (Groundrush Dolerite?).	
P06832	11	GHRC017		DC	3141743	79	80	603791	7820425	Plagioclase-rich medium to very coarse sandstones with chlorite, locally with carbonate and/or sericite, also quartz veins, and sericite-rich claystones with chlorite, apatite and leucoxene. Rare zircon in some sandstone chips.	
P06833	12	GHRC020		DC	3147257	59	60	603722	7820366	Plagioclase-rich medium and coarse sandstones with less abundant quartz and biotite, also leucoxene, apatite and rare zircon. Matrix-poor to clearly grain-supported and not greywacke.	

Report #	Author	Date	Work	Geo	Prospect					Notes	Central
Petrology #	Count	ID	Type	NFMSample #	From	To	Easting	Northing	Description		EL7150
P06834	13	GHRC022	DC	3147527	104	105	603647	7820563	Chlorite-albite to carbonate-albite-altered plagioclase-rich to quartz-rich to mafic dolerite. Also quartz dolerite with rare limonite after pyrite.		
P06835	14	GHRC022	DC	3147540	117	118	603647	7820563	Chlorite-biotite-albite-leucoxene-altered quartz dolerite, with narrow quartz veins and poor textural preservation.		

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Petrology #	Count	ID	Type	NFMSample #	From To	Easting	Northing	Description		EL7150

Central										
EL7150			Talbot South							

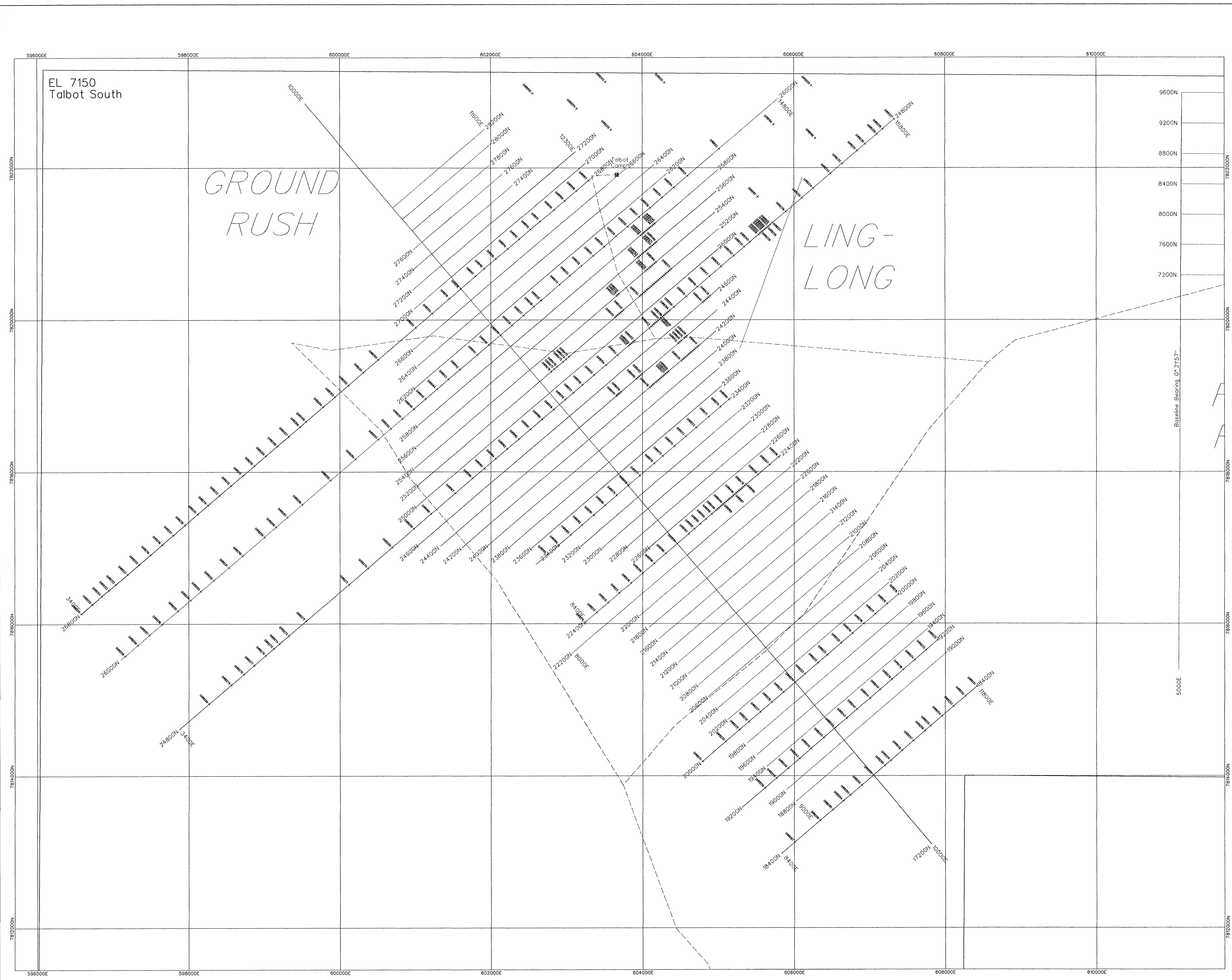
P7865	PU	2/07/1999	TS	JDE	Ground Rush					
P05485	1	GHRB243	DC	3067303, 304	27	33	606693.93	7814758.37	Chips of vein quartz +- chlorite. Also chips of weathered amphibole-rich schists with leucoxene, also quartz (enclosing apatite), interpreted as sheared, altered, meta-quartz dolerite.	
P05486	2	GHRB250	DC	3067347	10	13	605611.54	7813839.23	Weathered biotite granodiorite with fresh quartz and microcline, with clays +- leucoxene +- limonite after plagioclase and biotite	
P05487	3	GHRB259	DC	3067454	31	34	607272.74	7814200.35	Clay-rich chips with very poor textural preservation and no evidence of former dolerite. Also quartzofeldspathic chips with clays apparently after amphibole, possibly quartz microdiorite or metasediments?	
P05488	4	GHRB265	DC	3067512	40	43	606510.49	7813553.07	Chips variably of vein quartz, metachert rich in apatite, quartz-biotite-plagioclase schist (metasiltstone). Also altered possible quartz-amphibole schists, locally with apatite lenses.	
P05489	5	GHRB274	DC	3067585, 589	28	43	599193.1	7815735.51	Three chips of quartz-plagioclase porphyritic dacite. Two chips of massive meta-quartz dolerite. One chip of vein quartz with early epidote and later prehnite in fractures	
P05490	6	GHRB277	DC	3067622, 629	19	43	598861.52	7815433.94	Amphibole-rich chips with chlorite and sericite, possibly metapyroxenite. Also carbonaceous quartz-sericite-biotite-andalusite hornfels (as seen in Blake Beds and Davidson Beds metasediments).	
P05491	7	GHRB279	DC	3067650, 654	28	40	598556.62	7815195.03	Altered microcline-plagioclase-biotite chips, and quartz-microcline-plagioclase chips +- altered biotite, which represent a single granitoid +- vein quartz, or several granitoid varieties?	
P05492	8	GHRB290	DC	3067654	43	46	598709.82	7816899.42	Two chips of fine-grained amphibolite (metabasalt or metadolerite), one with vein quartz and a vein of adularia. Also one chip of vein quartz. Unlikely to represent Tanami Mine Basalt.	
P05493	9	GHRB291	DC	3067764, 765	43	49	598526.89	7816744.07	Sericitised feldspar-quartz-biotite-muscovite hornfels, also sericitised hornfels with biotite, muscovite and/or altered possible andalusite, also vein quartz. Possibly similar to hornfels on P05490.	
P05494	10	GHRB296	DC	3067827, 832	18	36	597642.68	7815993.22	Two chips of weathered amphibole-rich metabasalt or metadolerite. Other chips of quartz-biotite-muscovite-feldspar(?) cordierite(?), metasedimentary schist or hornfels.	
P05495	11	GHRB307	DC	3067911, 915,	16	34	599320.12	7818467.2	Two chips of sparsely porphyritic intrusive rhyolite. Three chips of K-spar-rich arkosic metasandstone with epidote and biotite. Four chips of quartz-poor quartz-muscovite-biotite schist, possibly metasiltstone.	
P05496	12	GHRB312	DC	3067963, 968	22	40	598557.88	7817819.91	Five chips of weathered basalt, dolerite and quartz dolerite. A single chip of quartz-muscovite-biotite schist or hornfels, with altered possible ex-feldspar.	
P05497	13	GHRB314	DC	3067993, 996	30	42	598252.98	7817561	Three chips of green clays after biotite-bearing probable ultramafic to mafic rocks. Other chips of altered tonalite, possibly with quartz veining or flooding in one chip.	
P05498	14	GHRB315	DC				598115.77	7817444.49	Three chips of granitoid (granodiorite or adamellite). Two chips of indeterminate probable metasediments. One chip of weathered quartz-poor quartz-feldspar-biotite gneiss.	
P05499	15	GHRB318	DC	3068051	42	45	597643.18	7817043.17	Fine-grained weakly foliated mafic hornfels (hornblende-plagioclase-opaque oxide), rarely with altered biotite.	
P05500	16	GHRB321	DC	3068102, 103	31	37	597185.83	7816654.8	Chips of massive to foliated mafic hornfels one cut by a vein of fine-grained microtonalite(?). Other chips of tonalite-trondhjemite and vein quartz with minor plagioclase.	
P06836	17	GHRB323	Dc	3068128, 132	33	47	596941.91	7816447.67	Weathered chips of probable mafic hornfels chips. One chip of tonalite to trondhjemite with rare altered biotite.	

Report #	Author	Date	Work	Geo	Prospect					Notes	Central
Petrology #	Count	ID		Type	NFMSample #	From	To	Easting	Northing	Description	EL7150
P06837	18	GHRB325		DC	3068153, 163	15	47	596724.67	7816263.19	Biotite-plagioclase schist, altered and weathered (igneous or sedimentary?) One chip, a quartz veined and flooded quartzofeldspathic rock (igneous or sedimentary?) with the composition of a fine-grained adamellite. One chip of heterogeneous quartz-chlorite/albite-chlorite of indeterminate genesis.	
P06838	19	GHRB331		DC	3068251	24	28	606834.64	7822224.55	Chips of uraltised, albitised to saussuritised and leucoxenised dolerite with rare quartz. Different from other dolerites from Groundrush in being late, undeformed and very weakly metamorphosed dolerite.	
P06839	20	GHRB334		DC	3068302	60	61	606255.33	7821732.61	Albite-chlorite-epidote-leucoxene-altered plagioclase to quartz-rich granophyre (or quartz-rich fractionation products of dolerite).	
P06840	21	GHRB336		DC	3068318	15	16	605889.45	7821421.91	Uralitised and partly saussuritised quartz dolerite with rare residual clinopyroxene and patches of limonite after pyrite, locally in quartz-prehnite aggregates. All of low metamorphic grade, comparable with P06838, 39.	
P06841	22	GHRB338		DC	3068341, 346	27	45	605645.53	7821214.78	Altered to weathered quartz dolerite-related granophyres with albite, sericite, altered biotite and chlorite +- smectites in less weathered chips, limonite, smectites and leucoxene in more weathered chips.	
P06842	23	GHRB339		DC				605569.31	7821150.05	Weathered quartz dolerite with clays and rare clouded clinozoisite, also leucoxene.	

TABLE 1: SUMMARY OF ROCK NAMES AND MINERALOGY

SAMPLE	DRILL HOLE, m	ROCK NAME
P 06651	GHD007, 169.45m	Low-intensity sericite-chlorite altered micro-tonalite porphyry
"	"	Laminated biotite-chlorite rock (altered sheared ?dolerite)
P 06652	GHD008, 119.2m	Chlorite-biotite-actinolite meta-quartz wacke
"	"	Chlorite-actinolite-biotite meta-laminated sediment
P 06653	GHD008, 138.05m	Veined, low-intensity chlorite-biotite-actinolite altered meta-arkose:
"	"	- Low-intensity chlorite-biotite-actinolite altered meta-arkose
"	"	- Early quartz-feldspar veins
"	"	- Late quartz-calcite-actinolite-chlorite veins
P 06654	GHD008, 141.15m	Veined, actinolite-albite-biotite meta-dolerite
P 06655	GHD008, 149.95m	Heterogeneous meta-dolerite
P 06656	GHD008, 198.3m	Biotite-actinolite meta- micrographic quartz dolerite
"	"	Biotite(-actinolite) meta- micro-diorite porphyry
P 06657	GHD009, 122.15m	Veined, actinolite-biotite-sulphide meta- micrographic quartz dolerite:
"	"	- Actinolite-biotite-sulphide meta-micrographic quartz dolerite
"	"	- Quartz-actinolite-chlorite-gold vein
P 06658	GHD009, 143.8m	Veined, actinolite-biotite-sulphide meta- micrographic quartz dolerite:
"	"	- Actinolite-biotite-sulphide meta-micrographic quartz dolerite
"	"	- Quartz-calcite-actinolite-chlorite-gold vein
P 06659	GHD010, 112.7m	Deformed actinolite-biotite meta- micrographic quartz dolerite
P 06660	GHD010, 121.6m	Albite-biotite-pyrite meta- micro-tonalite porphyry
P 06661	GHD010, 123.6m	Low-intensity chlorite altered micro-tonalite porphyry
"	"	Biotite-actinolite meta-basite
P 06662	GHD010, 124.2m	Actinolite-biotite meta- micrographic quartz dolerite
P 06663	GHD010, 125.2m	Actinolite-chlorite altered mylonite (altered mylonitised basic rock)
P 06664	GHD012, 152.9m	Veined, deformed actinolite altered meta- micrographic quartz dolerite
"	"	Veined, actinolite-chlorite altered mylonite
"	"	Early quartz-calcite-chlorite-actinolite veins
"	"	Late calcite-quartz veins
P 06665	GHD012, 158.35m	Fractured and chlorite overprinted, actinolite meta- micrographic quartz dolerite
"	"	Fractured and chlorite overprinted, actinolite-biotite meta-micro-diorite porphyry
P 06666	GHD012, 159.8m	Veined and chlorite overprinted, biotite altered meta- micrographic quartz dolerite
"	"	Veined and chlorite overprinted, actinolite-biotite meta- micro-diorite porphyry
"	"	Actinolite-sericite meta- micro-tonalite porphyry
P 06667	GHD013, 90.8m	Veined, actinolite meta- micrographic quartz dolerite
P 06668	GHD013, 122.7m	Veined, actinolite(-biotite) meta- micrographic quartz dolerite

SAMPLE	DRILL HOLE, m	ROCK NAME
P 06669	GHD013, 127.15m	Deformed, veined actinolite-chlorite meta- micrographic quartz dolerite
P 06670	GHD013, 136.73m	Deformed, veined, actinolite-biotite-chlorite meta- micrographic quartz dolerite:
"	"	- Deformed actinolite-biotite-chlorite meta- micrographic quartz dolerite
"	"	- Deformed quartz-actinolite-gold veins



EL 7150
Talbot South

GROUND
RUSH

LING-
LONG

Baseline Bearing 0° 21' 57"

5000E

1600

metres

SCALE 1:20000

Normandy NFM Limited

NORTH FLINDERS EXPLORATION

Tanami Reconnaissance : Northern Territory

GROUND RUSH

RAB DRILLHOLE LOCATION DIAGRAM

CR 1999 - 0488

FIGURE 15