May 2011

M2C- Geology- Exploration

Long Plains Diamond Drilling

AUD $2,000,000

Statement of Business Objectives

Grange Resources wishes to do sufficient exploration work including definition drilling to publicly disclose a JORC compliant resource on as much of the total strike extent of “Long Plains” as is possible.

Ref: jorc2004print_v2.pdf (attached)

The Board of Grange Resources has allocated and approved A$2,000,000 to this objective. (subject to an AFE)

Ref: Feb 24 2011 Board minutes:

” Resolved: That approval be given to undertake a program of definition drilling at Long Plains during 2011 at a cost not to exceed $2 million. “

Contents

Project Description –Context and Available Data

Context:

Long Plains is an under-explored potential mill feed source within ~14km of the Savage River concentrator.

It is not currently listed with a JORC complaint resource estimate.

Available Data:

The entire area has had a number of ground and airborne geophysical surveys completed over the last 50 years.

The northern part (NZ) has had aerial and ground mag surveys done as well as variably spaced diamond and reverse circulation (RC) drilling, so it's exploration is well advanced.

The central and southern parts (CZ-SZ) has had aerial geophysics done and very limited drilling , consequently this area is poorly understood.

This difference in existing exploration coverage requires a customized exploration approach for each of these areas.

Project Description-Summary of planned work.

1. Ground Geophysics

100m spaced ground magnetometer survey to define CZ-SZ drill targets and corroborate continuity of geological model. $15,000 completed by Aug 2011

2. Upgrade roads and tracks for CZ-SZ drilling

1.9km Upgrade tracks and 1.56km new roads for ~$84,000

3. Exploration Diamond Drilling

7 x 300m spaced diamond drill holes on CZ-SZ for ~ $726,000

4. Definition Diamond and RC Drilling

20 x 100m spaced 4 diamond and 16 RC drill holes on NZ between 5396280-5397280mN (1 km strike length) for ~ $1,200,000

* Actual classification of the resource will be dependent upon a geostatistical\ study of the acquired data, including variography.

Physicals> Work Plan

Part 1	Zone	Activity	Type	Contractor	Line km	Est. Cost	Shifts	Months
	CZ-SZ	Ground Mag	Survey	GAP Geo	7.2	$ 15,000	5	0.2

Part 2	Zone	Activity	Type	Contractor	Metres	Est. Cost	Shifts	Months
	CZ-SZ	Road constr	Bush	Fagan	2,149	$ 50,958	19	2
	includes drill moves							

Part 3	Zone	Level	Type	Holes	Metres	Est. Cost	Shifts	Months
	CZ-SZ	Drilling	Inf-HQ3	7	2,256	$ 726,400	120	3.75
	includes drilling, assays, 2 techs, 1 ute, gyro, ori, consumables, 1 geo, but no site prep or drill moves							

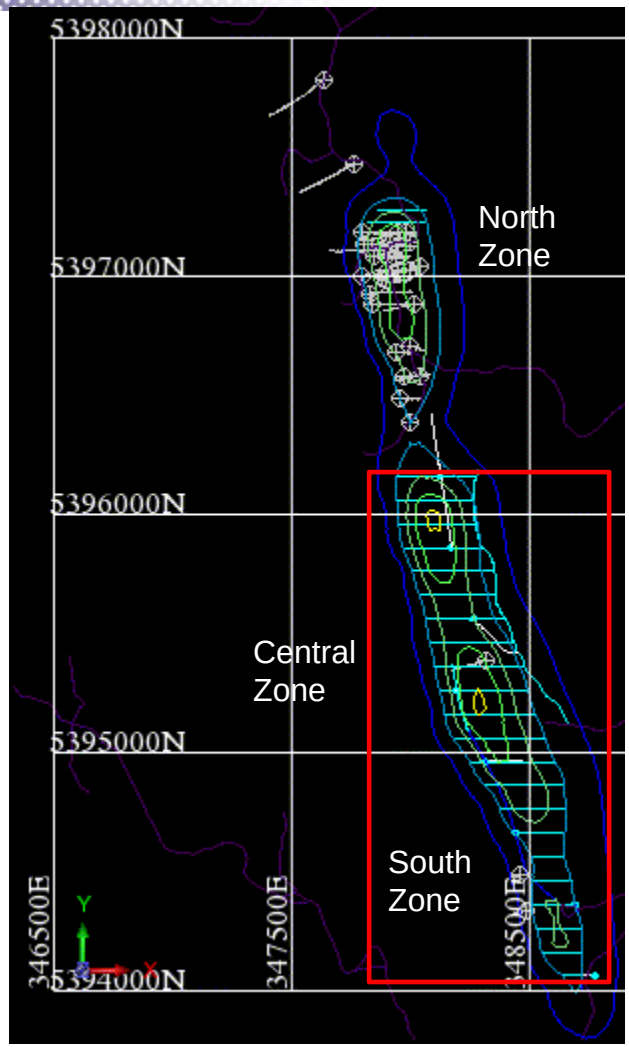
Part 4	Zone	Level	Type	Holes	Metres	Est. Cost	Shifts	Months
	NZ	Drilling	Inf-HQ3	4	1,200	$ 488,000	80	0.2
	NZ	Drilling	Inf-RC3	16	3,223	$ 708,500	54	1.3
	Total NZ Drilling			20	4,423	**$ 1,196,500**	134	1.5
	includes drilling, assays, 2 techs, 1 ute, gyro, ori, consumables, 1 geo, ***drill pads and moves***							

Total Long Plains 2011 Budget- Planned Expenditure	**$ 1,988,858**
Total Long Plains 2011 AFE Approved funding	**$ 2,000,000**

Part 1 Ground Geophysics

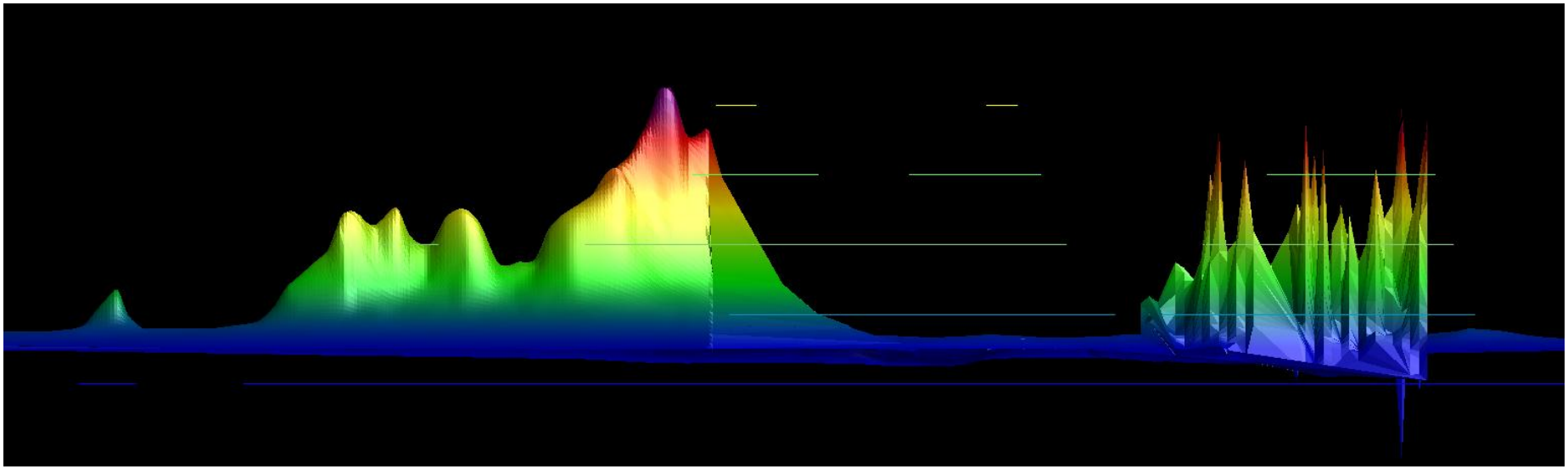
7 line km of new grid has been cut between late May and 9th June 2011 in preparation for a ground magnetics survey to be conducted mid-July 2011. (Subject to this AFE's approval)
The ground magnetic surveys provide much better resolution of the drill target (as seen on the next slide).

From the point of view of this AFE, a ground mag survey is required to minimize the risk of incorrect drill targeting.
Est .cost of ground mag = $13,000



LP Exploration

Aerial Magnetics vs Ground Magnetics

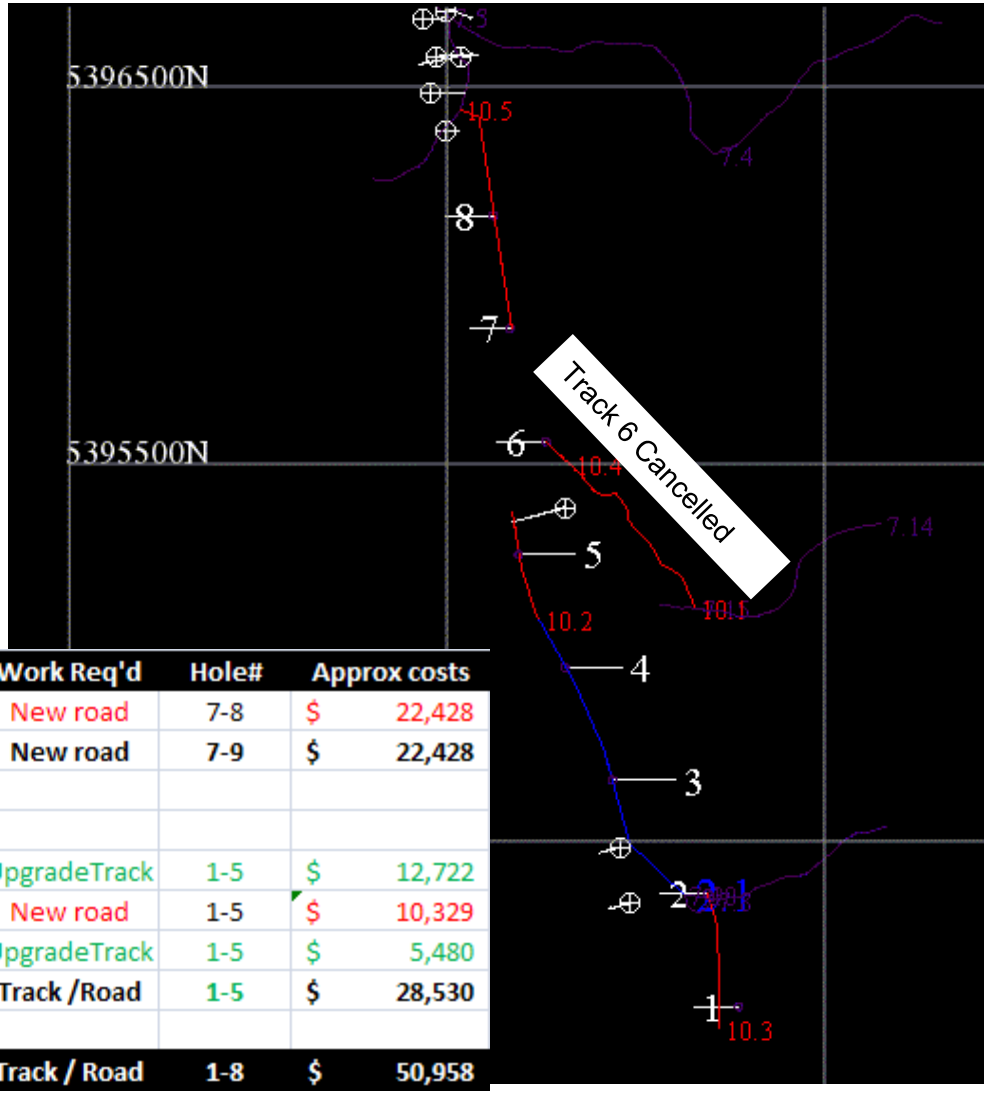


Highlights the value of the time & expense of conducting ground mag to help define drill targets

Part 2 Access to Central and South Zones

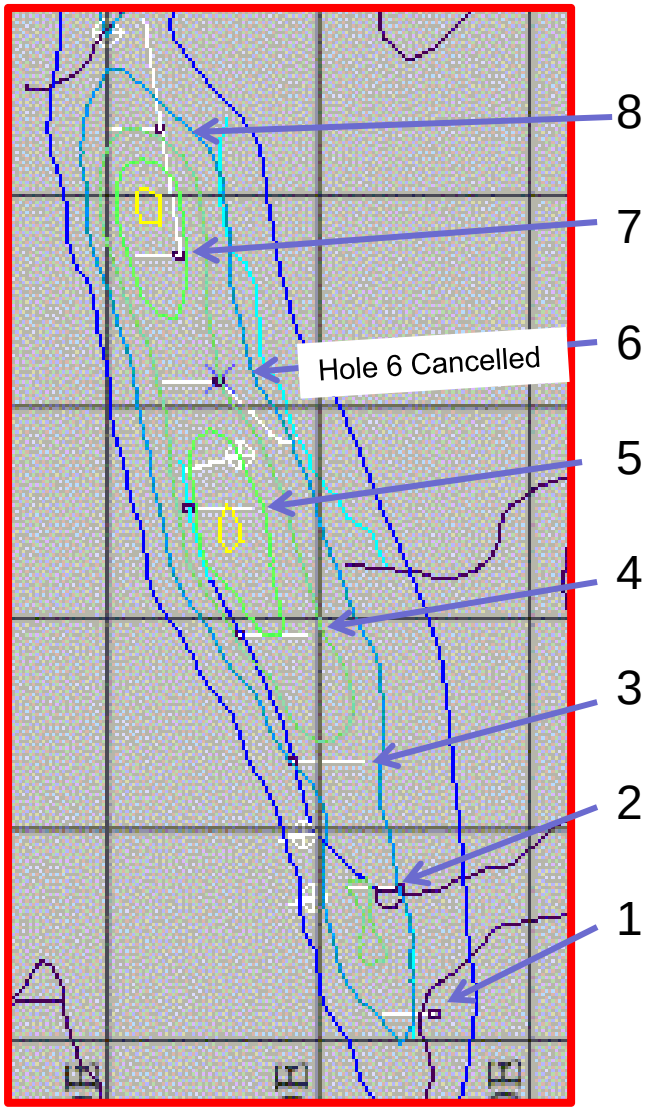
1km of new road and clearing of 1.2Km of existing overgrown tracks to enable drill access for holes 1,2,3,4,5,7 and 8

Hole 6 has been cancelled to allow more NZ drill metres.



North Access Roads and Tracks			m	Work Req'd	Hole#	Approx costs
New North Ridge Ext	106		640.8	New road	7-8	$ 22,428
	Total length roads NZ		640.8	New road	7-9	$ 22,428
South Access Roads and Tracks						
S. Ridge	28		848.1	UpgradeTrack	1-5	$ 12,722
S. Ridge Ext	8		295.1	New road	1-5	$ 10,329
S.Tail	8		365.3	UpgradeTrack	1-5	$ 5,480
Upgrading tracks to roads and new roads SZ			1,508.5	Track /Road	1-5	$ 28,530
New Access Roads and Upgrading Tracks			2,149	Track / Road	1-8	$ 50,958

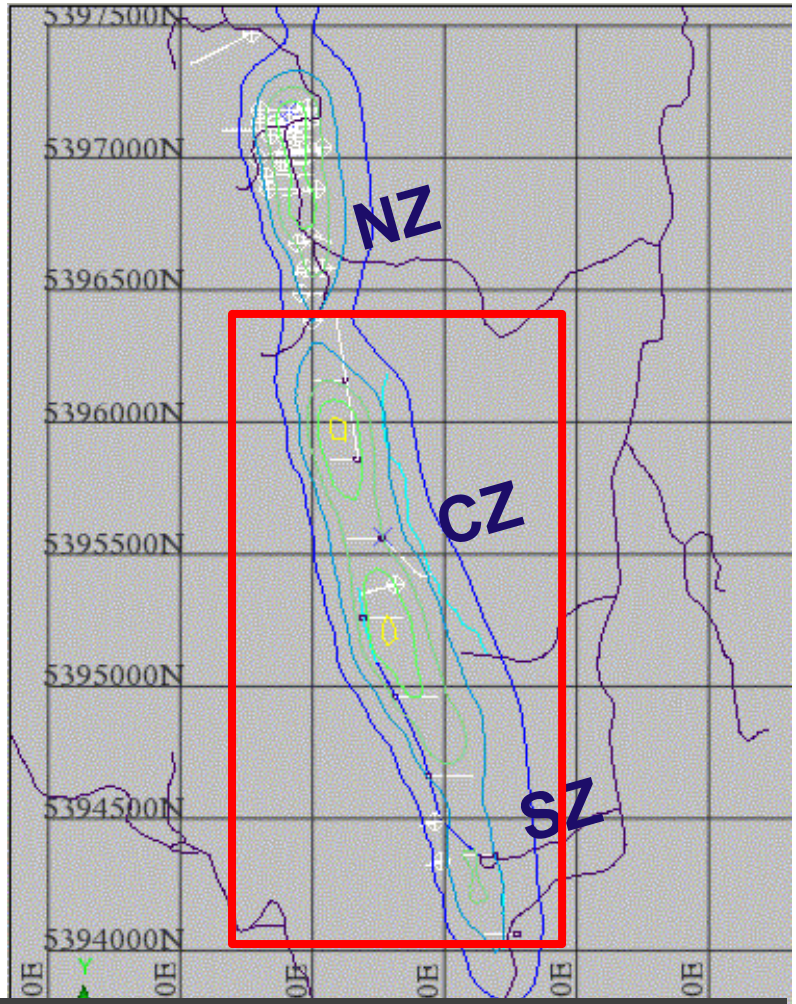
Part 3 - 300m spaced Exploration drilling CZ-SZ



Hole length

Avg=256m

Max =300m



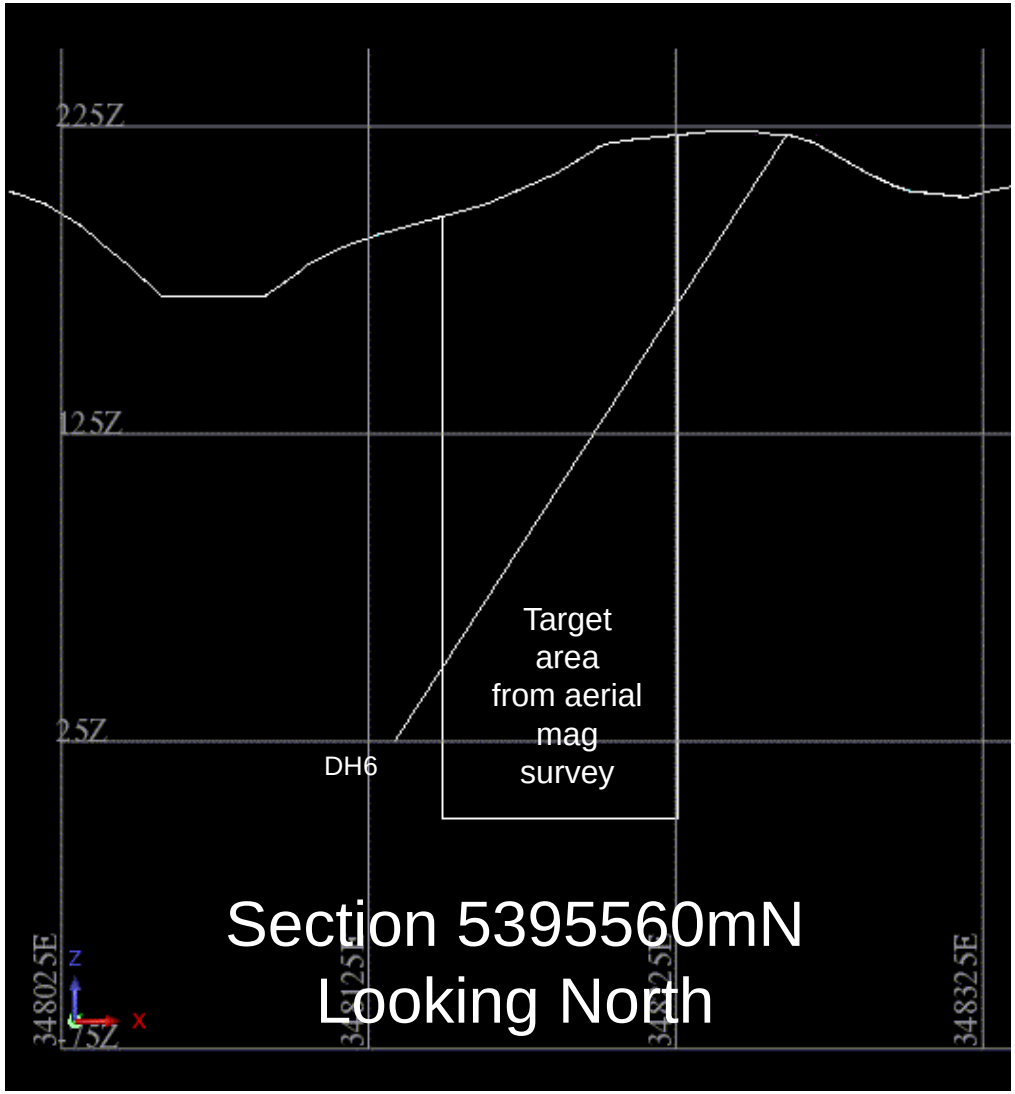
~ 7km total strike length~ 5 Km untested

Total Magnetic Intensity (nT) contours.

Part 3 Typical drill design

- Diamond drill (HQ3 size)
- Holes spaced 300m apart
- Inclined ~ -60^0

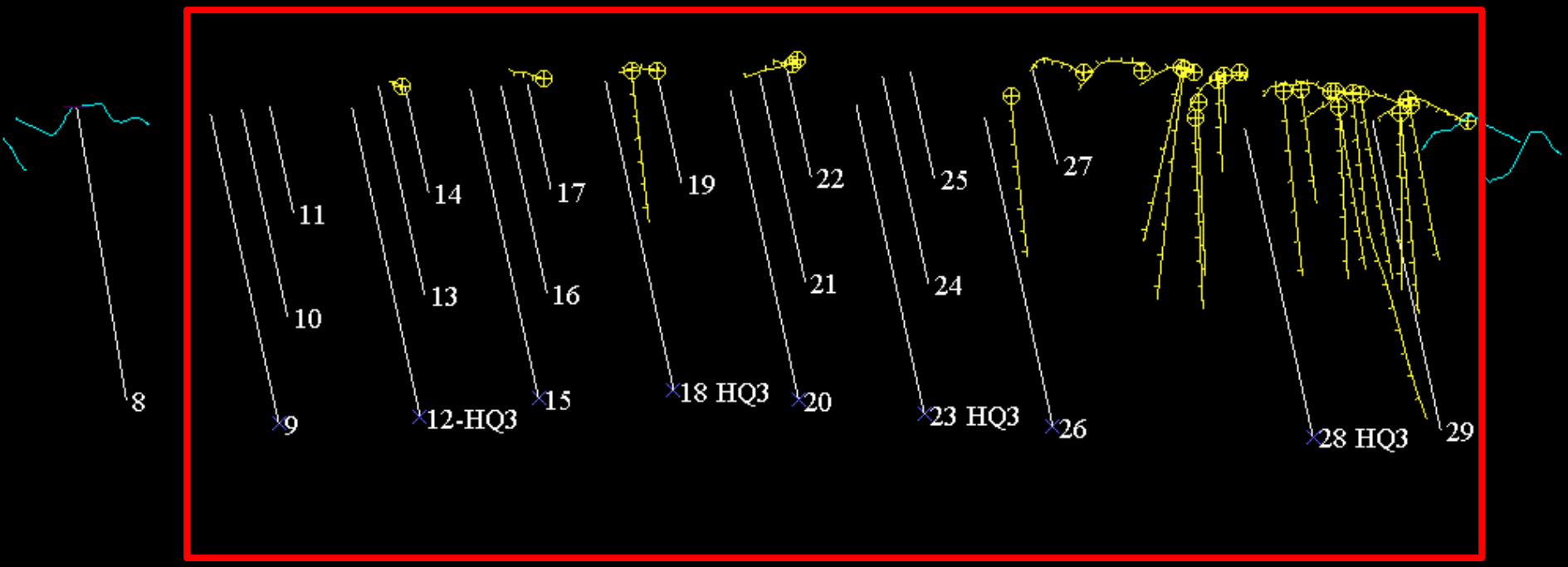
- Holes drilled east or west depending on best access
- Test full width of interpreted magnetic target.
- Avg 256m hole length



Part 4 – 20 x 100m spaced Definition Drilling NZ

Holes 9-29 Hole length Avg=210m Max =300m
All holes reverse circulation except for 4 (denoted HQ3)

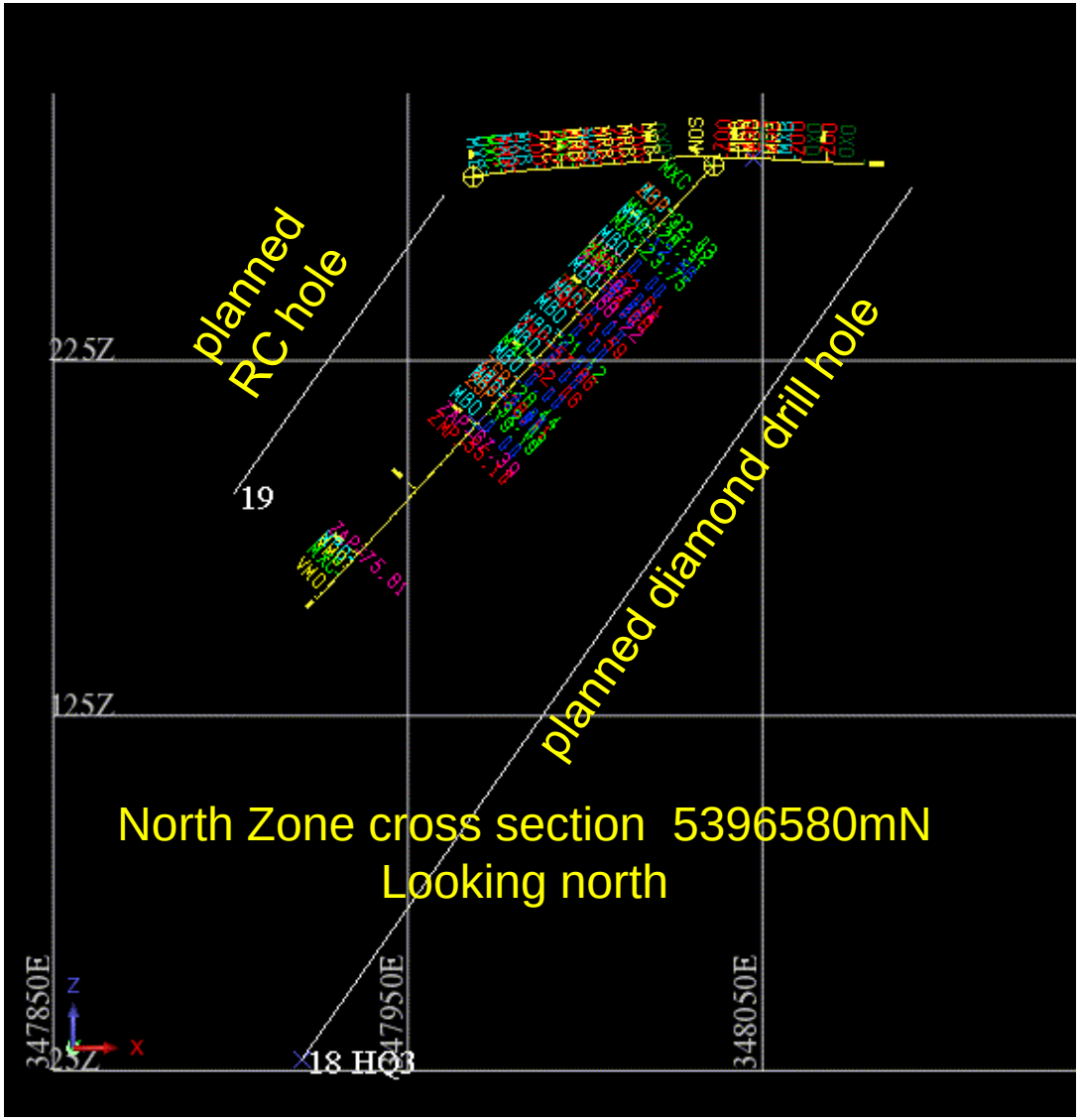
SZ CZ NZ



North Zone Perspective long section looking West

Part 4- Typical Definition Drill Design

- Diamond and RC holes spaced 100m apart
  - Inclined ~ -60^0
- Holes drilled in fences across strike
- Test full width of interpreted magnetic target.
- Diamond hole on longest / deepest design hole



Expected Results - based on “Classification Guidelines”

North Zone :

Augment existing drill spacing to allow at least an inferred and possibly partly indicated resource to be estimated between 6380mN and 7250mN (1km strike length).

Central and South Zones:

- Complete ground mag to corroborate continuity and guide drill targeting.
- Complete very widely but regularly spaced drilling at 300m spacing, to test the entire strike length of the mag anomaly; so as to confirm source of magnetic anomaly and to infer geological continuity.
- At conclusion of the CZ-SZ drill program the data may not be of sufficient quality and quantity to estimate an inferred resource but will will inform a decision to either:
    a) continue developing the CZ-SZ targets into an inferred resource or
    b) discontinue exploration work

Long Plains Guidelines to Classification

"Resources informed by drilling spaced at distances greater than the maximum range of mineralization continuity should be classified as inferred."[1]

"Resources informed by drilling spaced at distances within the maximum range of mineralization continuity may be classified as indicated."[1]

"In order to achieve measured resource category, the estimate should be informed by drilling spaced at distances sufficient to confirm mineralization continuity with high confidence and to establish the geometry of the deposit."[1]

Assumption : <u>for drill design purposes</u> "Long Plains" DTR values are assumed to display variography with a maximum range of 100m.

(based on North Pit max range =140m, South Pit max range =70m)

[1] *Ref: Snowden Variography 2006 North Pit p.56*

- Ref Section 6.1 Grade continuity, Variography and Estimation Parameter North Pit , Snowden 2006 p. 56

Reporting Strategy:Central and South Zones
Potential quantity and grade is conceptual in nature.

Central and South Long Plains Iron mineralization is currently so poorly understood that any public disclosure after this 7 hole x 300m spacing drill campaign would likely have to be lodged under clause 18 of the JORC code. (ie: It would likely not qualify as a resource)

Clause 18 JORC:

It is common practice for a company to comment on and discuss its exploration in terms of target size and type

Should not be misrepresented or misconstrued as an estimate of Mineral Resources or Ore Reserves

The terms Resource and Reserve must not be used in this context

Any statement referring to potential quantity and grade of the target must be expressed as ranges and must include

(1) **a detailed explanation of the basis for the statement, and**

(2) **a proximate statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.**

Justification

With the North pit a maturing prime asset for Grange, new ore sources need to be found and enough time and money devoted to their development so that Grange can have a ready supply of mill feed. We have seen the effects of being overly reliant on one pit (east wall failure in North Pit).

Having a ready and alternate feed source would allow the company to ride out any temporary but severe restrictions to the ore supply.

This potential deposit at Long Plains is on strike with our existing resources and is a logical next step to secure a long life asset at minimal cost.

Safety & Environment

A full risk assessment has not been done at time of AFE submission

The project is subject to approval by the Environment section of Mineral Resources Tasmania (MRT) and it is expected that ongoing fauna and flora surveys will need to be done as new tracks are prepared. Most of these have been surveyed already.

The planned work is also governed by the exploration code of conduct which provides advice of minimizing damage to the environment whilst conducting drilling and exploration operations.

Exploration and Definition Drilling Risk Assessment

GRANGE RESOURCES

GRANGE RISK ASSESSMENT WORKBOOK

LongPlains Exploration and Definition Drilling

DATE: Enter Date Here

Catastrophic (5)	Certain (5)	Extreme 18-25
Major (4)	Likely (4)	High 11-17
Moderate (3)	Possible (3)	Moderate 6-10
Minor (2)	Unlikely (2)	Low 1-5
Insignificant (1)	Rare (1)	

Insignificant (1)	Certain (5)	Extreme 18-
Minor (2)	Likely (4)	High 11-17
Moderate (3)	Possible (3)	Moderate 6-10
Major (4)	Unlikely (2)	Low 1-5
Catastrophic (5)	Rare (1)	

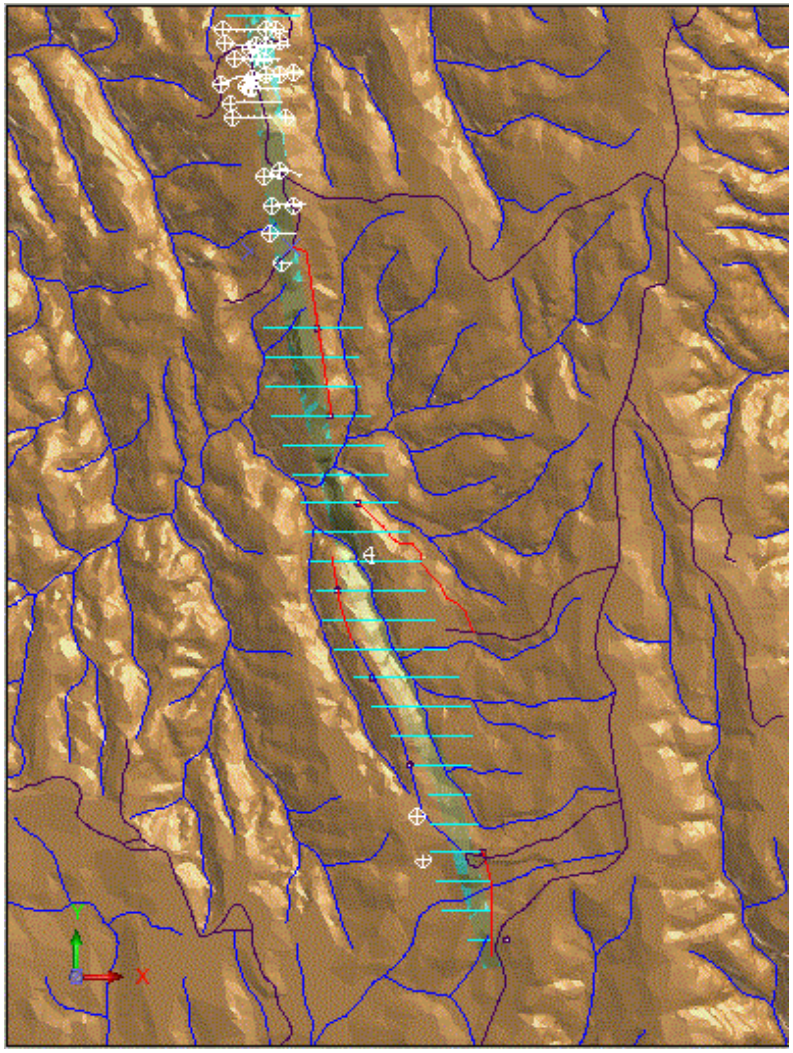
M:\Geology\Exploration\Long_Plains\Exploration Data\2011 program\AFE May 2011\[F-AFE 1002 Long Plains Geo

No.	Event/Risk	Consequence Type	Consequence	Likelihood	Current Risk (Inherent)	Current Control Measures	Improvement Opportunities	Consequence	Likelihood	Residual Risk	Manager
1	Drilling injuries	Operational	3	2	9	Hire reputable drillers		3	2	9	Roger Hill
2	Unplanned environmental damage	Environmental	2	2	5	Existing Controls	New Controls	2	2	5	Roger Hill
3	Unplanned harm to fauna	Environmental	2	3	8	Existing Controls		2	2	5	Roger Hill
4	Miss target- null hole	Operational	3	2	9	Ground mag	Adjust holes based on results of ground mag	3	2	9	Roger Hill
5	Cost over-runs diamond drilling	Financial	3	4	17	Daily cost accruals		3	2	9	Roger Hill
6	Cost over-runs reverse circulation drilling	Financial	3	3	13	Daily cost accruals		3	2	9	Roger Hill
7	Cost over-runs track clearing	Financial	2	3	8	Daily cost accruals- close supervision	Hire dedicated field man	2	2	5	Roger Hill
8	Cost over-runs logging, assaying	Financial	1	3	4	Daily cost accruals- close supervision		1	2	2	Roger Hill
9		-						0	0	#N/A	Roger Hill

Project Benefits

Enables the first stage of publicly disclosed project development to commence.

- *Sends a clear signal to stakeholders that Grange is serious about exploration.*
- Defines a Strategic Asset for SR
- Actively brings the project into the Resource “pipeline”.
- Enables an informed basis for long-range capital planning.



Figures

- New Road Alignments and Tassie Devil Surveys
- 2008 Ground mag (left) vs 2005 AGSO TMI Aero Mag (right)
- 2011 Work completed -Grid Cutting
- 2011 Work completed –Tasmanian Devil Survey

New Proposed Road Alignments and Tassie Devil Surveys > works completed

Line cutting new track alignments (light blue)

3.2 line km @ $10,800 excl GST.

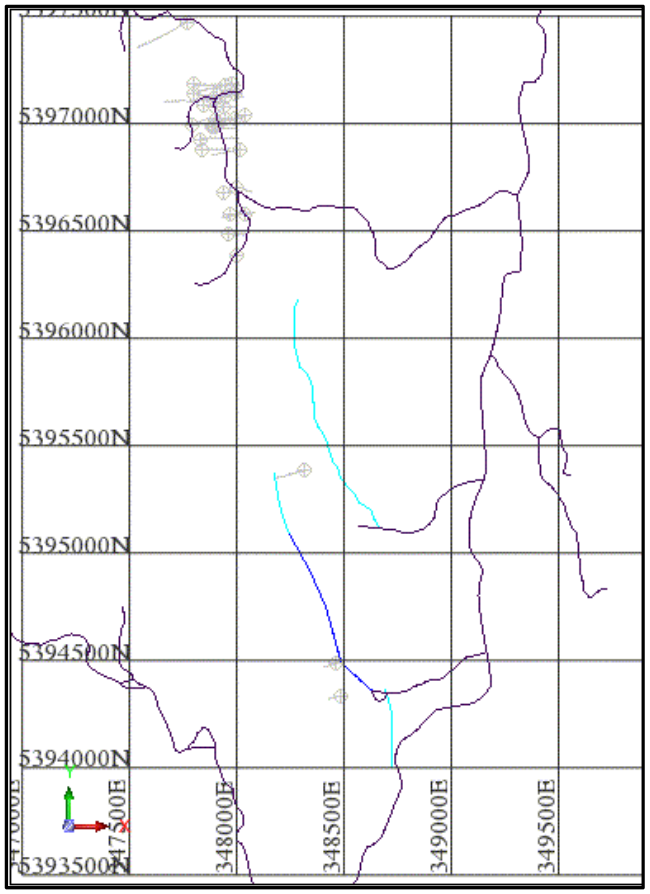
Completed 17 May 2011

New tracks required for mag survey and drill access.

Fauna survey completed to check for threatened/endangered species habitat

Completed 6-7 June 2011

~ $9,000 excl GST.



2008 Ground mag (left) vs 2005 AGSO TMI Aero Mag (right)

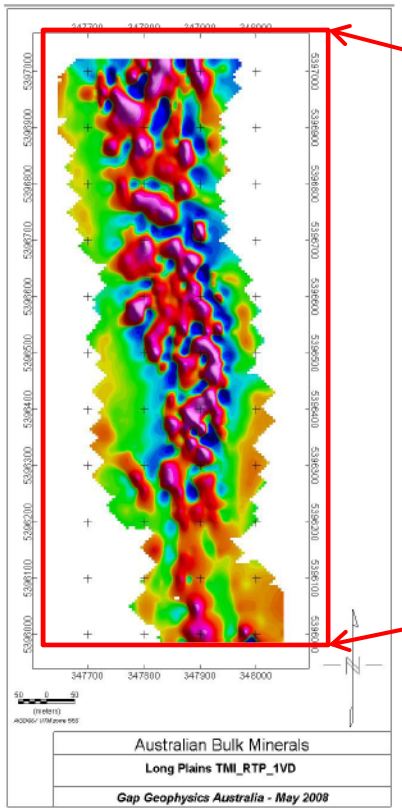
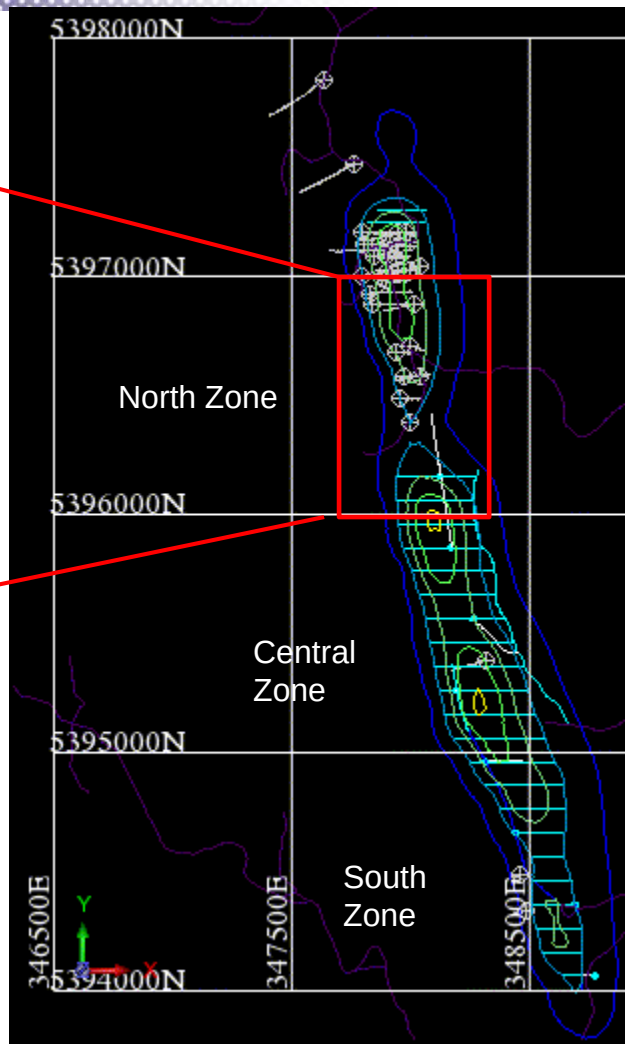


Figure 4 Long Plains Grid – colour image of TMI First vertical Derivative (1VD).

2008 ground mag
1st Vertical Derivative
Total Magnetic intensity
25m line spacing

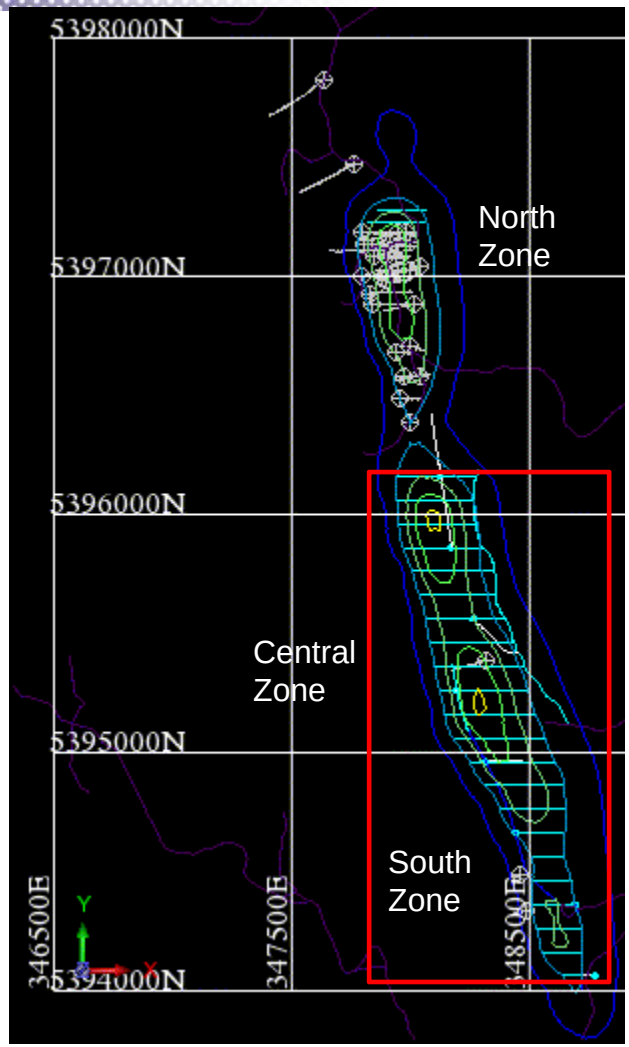
2008 ground mag1st Vertical Derivative Total Magnetic intensity 100m line spacing



2011 Work completed -Grid Cutting

7 line km of new grid has been cut between late May and 9th June2011 in preparation for a ground magnetics survey to be conducted mid-July 2011.
Est .cost of grid cutting= $22,000
The ground magnetic surveys provide much better resolution of the drill target (as seen on the previous slide).

From the point of view of this AFE, a ground mag survey is required to minimize the risk of incorrect drill targeting.
Est .cost of ground mag = $30,000



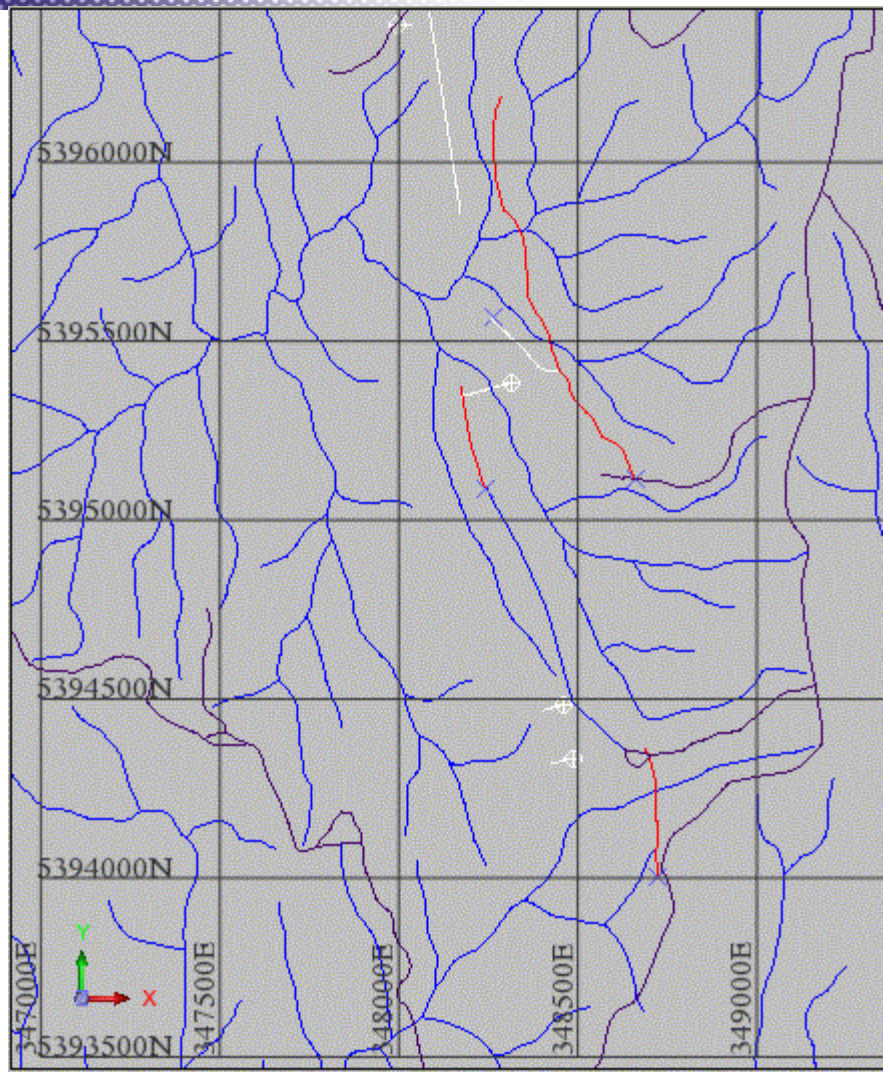
2011 Work completed –Tasmanian Devil Survey

A new fauna habitat assessment and fauna survey for Tasmanian Devils and other fauna was conducted in June 2011 on 3.2 km of proposed new track alignments (red).

Report is pending as at June 11th

Actual .cost of line cutting= $11,760
Inv Gr001
Est .cost of fauna survey= $9,000

Detailed drill planning shows new desired alignments (white), which may require a third survey.



Roads, Tracks and drainage shown

JORC references

- Mineral Resource definition
- Inferred Resource definition
- Indicated Resource definition
- Fig 1-general relationship between resource and reserve classes
- Clause 18-Reporting of Exploration results
- Reporting of current CZ and SZ results under Clause 18

Mineral Resource-Defined

- 19. A ‘Mineral Resource’ is a concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.
- Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource. If the judgement as to ‘eventual economic extraction’ relies on untested practices or assumptions, this is a material matter which must be disclosed in a public report.

ref p.7 Para 19 JORC2004print.pdf.

Inferred Resource

An ‘Inferred Mineral Resource’ is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence.

It is inferred from geological evidence and assumed but not verified geological and/or grade continuity.

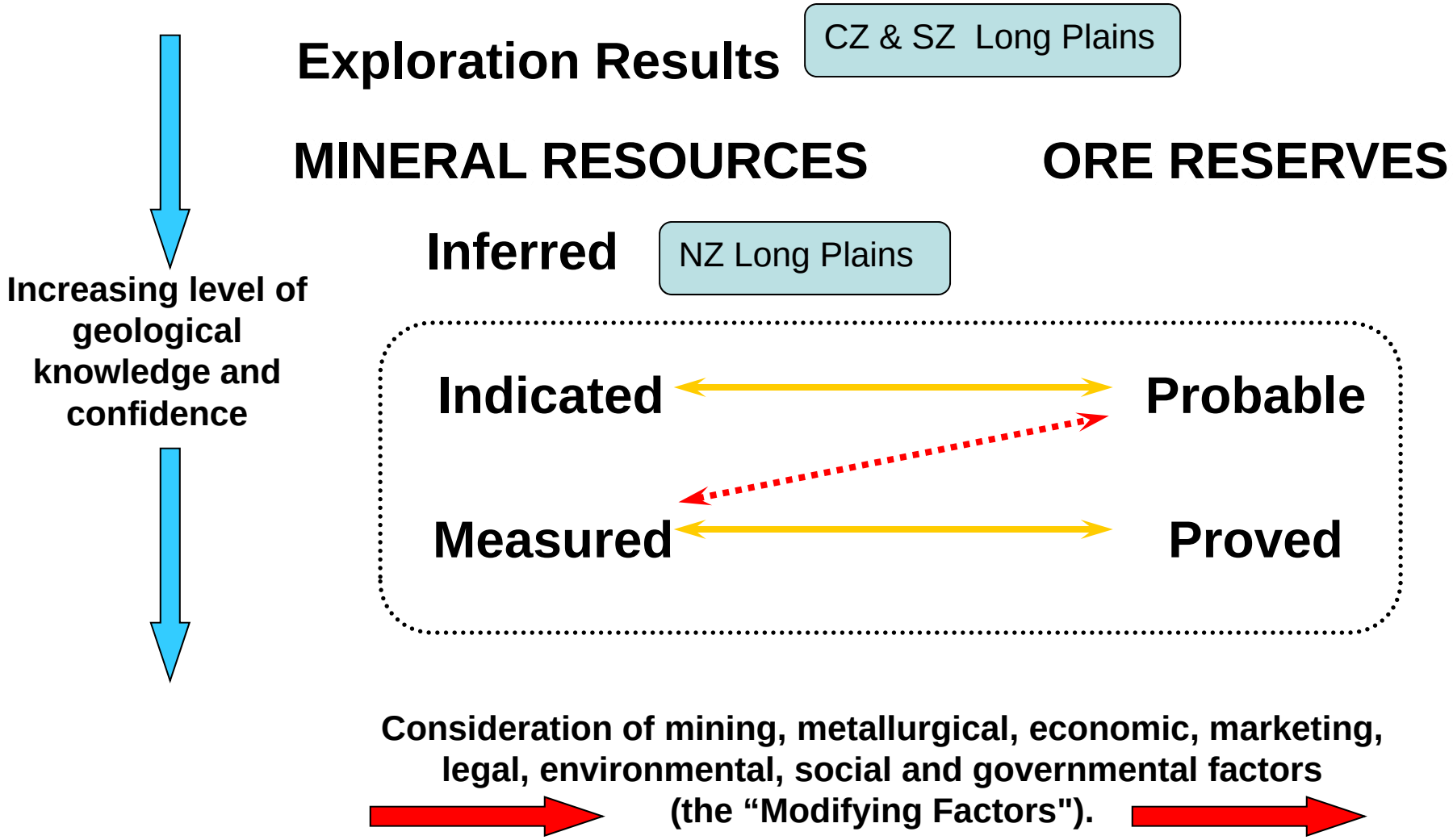
It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability.

Indicated Resource

An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence.

It is based on exploration, sampling, and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely spaced or inappropriately spaced to confirm geological or grade continuity, but are spaced closely enough for continuity to be assumed.

Figure 1 General relationship between Exploration Results, Mineral Resources & Ore Reserves



JORC Clause 18 - Reporting of Exploration Targets ref p.7 Para 16,17,18 JORC2004print.pdf.

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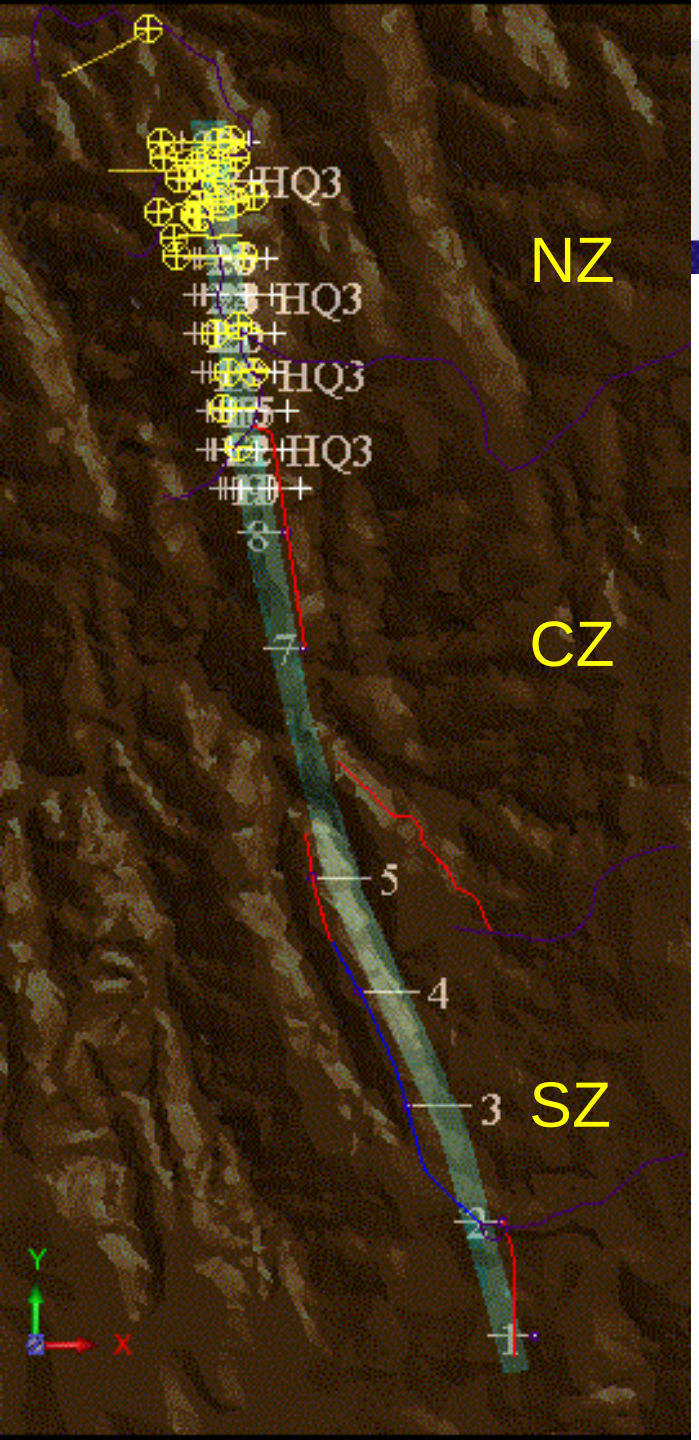
Reporting of Central and South Zones Long Plains

Intent to report under JORC Clause 18

Public Reporting of tonnages and grades outside the categories covered by the Code is not permitted unless the situation is covered by Clause 18, and then only in strict accordance with the requirements of that clause.

Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports could cause confusion.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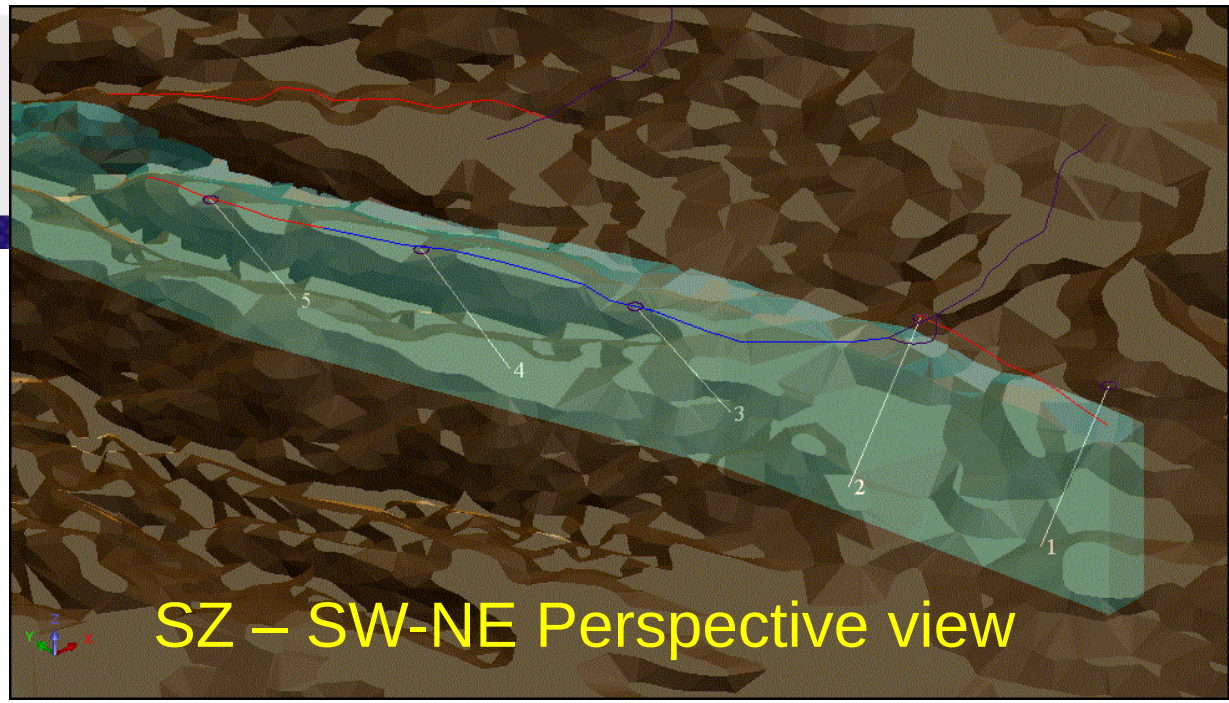
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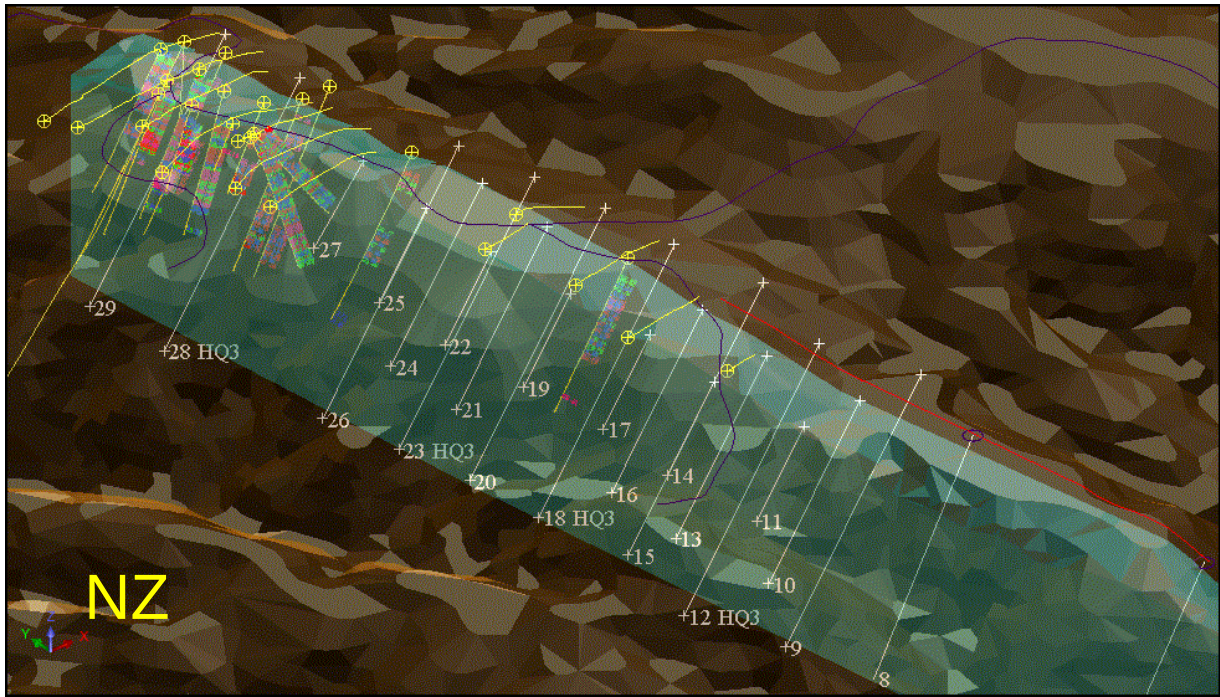
SZ – SW-NE Perspective view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