

# Orion Metals Limited

**Rare Earth Elements,  
Gold & Tech Metals Explorer**



Rare Earth & Strategic Metals  
Conference, Sydney  
22 June 2011

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- In accordance with Listing Rules 5.1 and 5.12 of the Australian Securities Exchange technical information contained in this report has been compiled by Mr. Adrian Day BSc (Geology), MAIG, MSEG, MGSA who is a competent person and member of the Australasian Institute of Geoscientists. Mr Day has relevant experience to the mineralisation being reported on to qualify as a Competent Person as defined by the Australasian Code for Reporting of Minerals Resources and Reserves. Mr Day is a non-executive Director of Orion Metals Limited and part-time consultant to the company. He consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

# Corporate Overview

ABN 89 096 142 737

ASX code: **ORM**

*Orion Metals is a well funded exploration company focused on discovery and establishing Rare Earth Element (REE) and gold resources through exploration and property acquisition.*

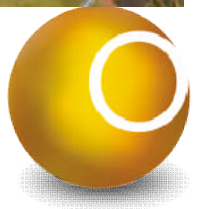
Share price (16 June 2011)	<b>20c</b>
Shares on Issue	79.5M
Options on Issue	2.5M
Market Cap	\$16M
Cash (16 June 2011)	\$4.2M

## **Top 20 shareholders hold 72.5% of listed shares**

Metallica Minerals Limited	14.9%
Conglin Yue	14.6%
Jien Mining	13.9%
Directors	5.2%



Drilling Killi Killi Hills 2010



# Vision & Strategy

## Vision

- To become a leading Australian explorer of Rare Earth Elements (REE) – utilising the best available people, resources and technology.

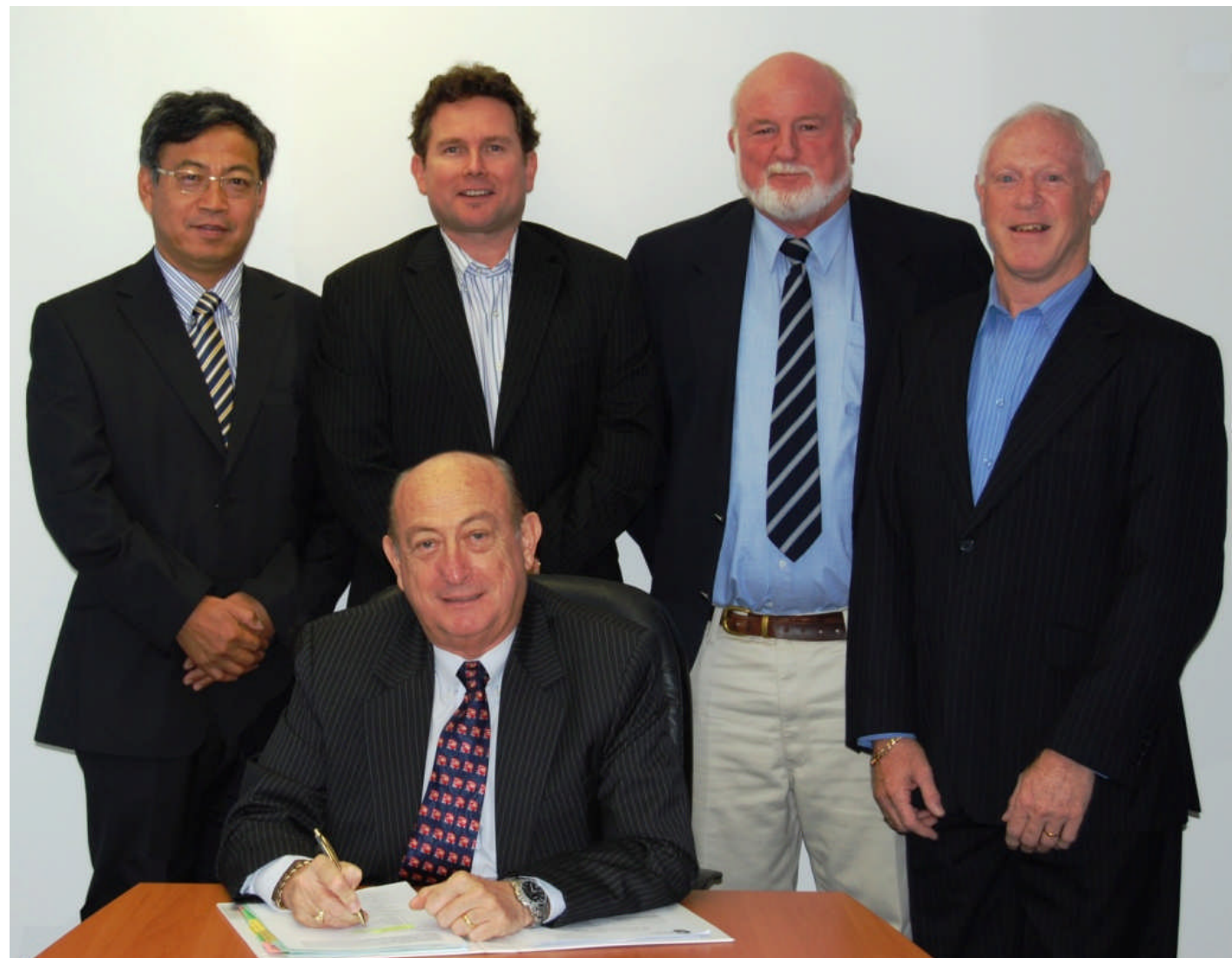
## Strategy

- Actively search for (exploration and property acquisition) additional REE & Au prospects both in Australia and selective countries
- Prioritise exploration and rapidly execute plans
- Maintain focus on establishing exciting REE & gold projects
- Attract REE end users as partners



# Board of Directors (4) Experienced Board

- David Barwick **Chairman**
- Adrian Day **Exploration Director**
- Andrew Gillies **Non-Executive Director**
- Tao Li **Non-Executive Director**



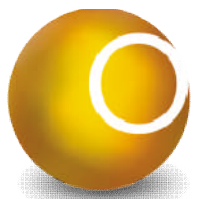
L-R Tao Li, David Barwick (seated)  
Andrew Gillies, Adrian Day, Bill  
Lyne (Company Secretary)



# Project Locations

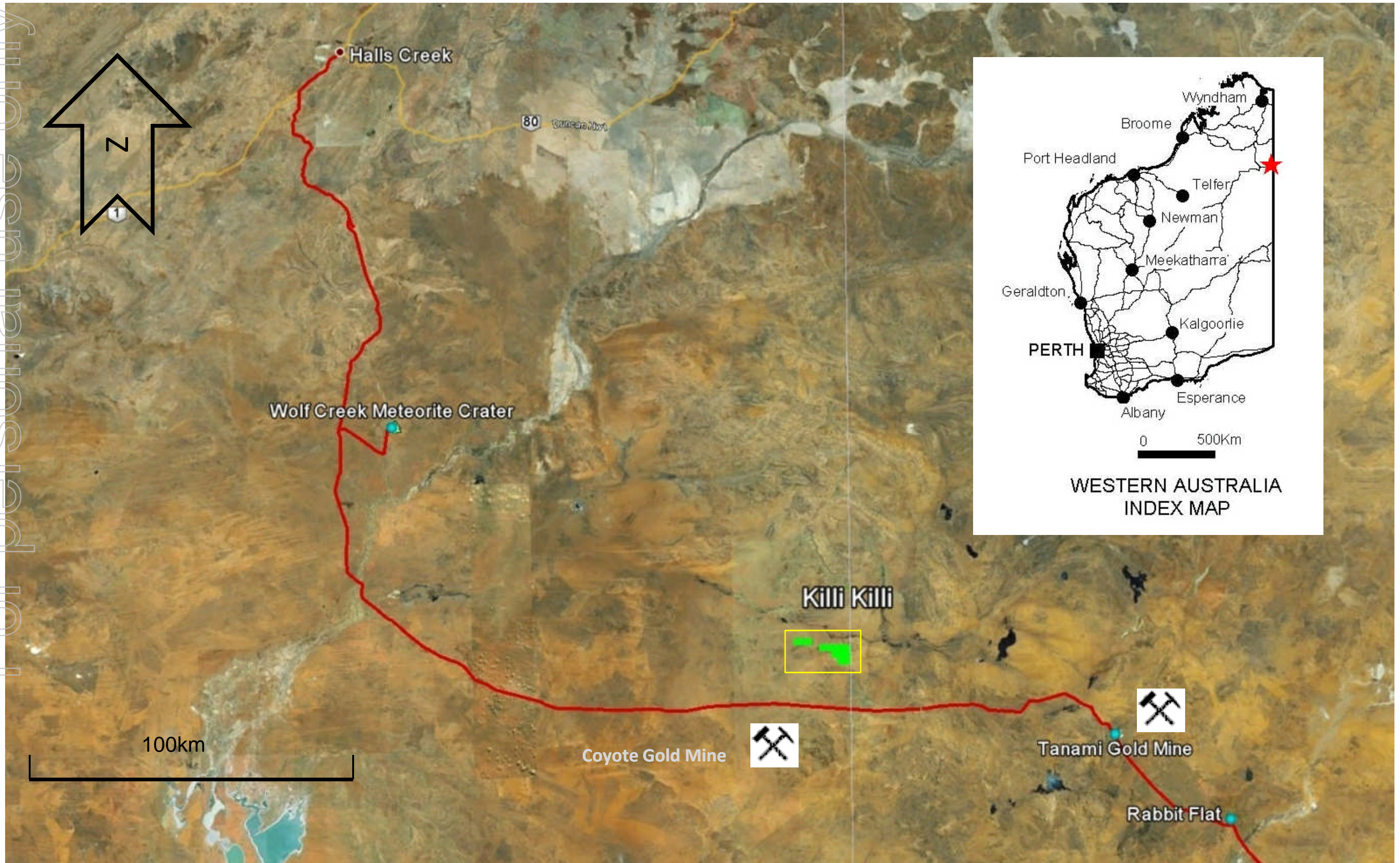


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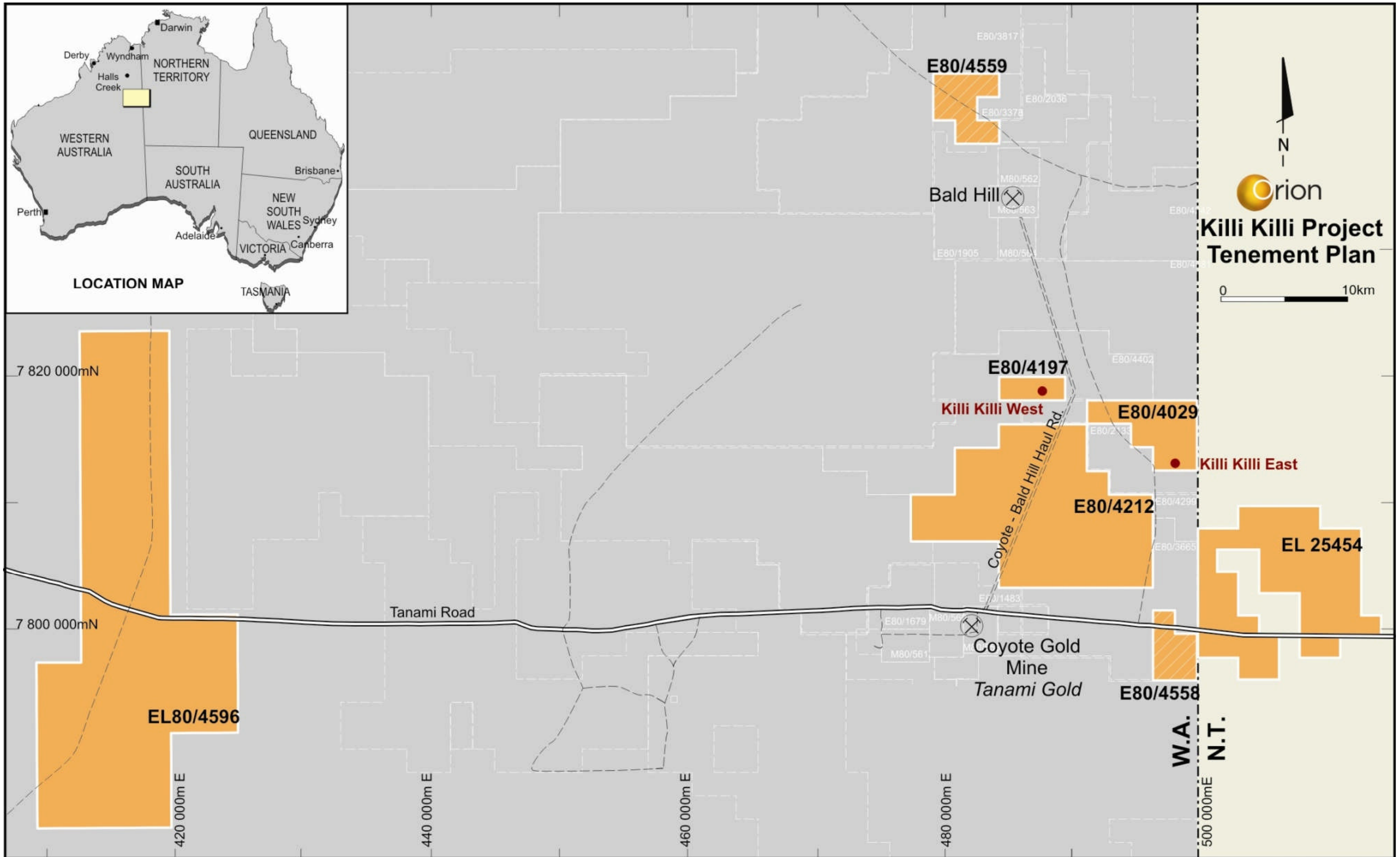
# Killi Killi Hills Location

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# Killi Killi Hills Location

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# Killi Killi Hills Project

- Tanami region highly prospective for RRE, Gold & Uranium & under explored
- REE enriched in reddish–pink coloured coarse sandstone/ conglomerate in unconformity & also basement rocks – interesting mineralisation style and association
- REE occur as phosphates, xenotime (Y), florencite (Ce/La) & goyazite (Sr)
- Abundance of “halides” is indicative of REE
- Highly encouraging first past drilling results released in Dec 2010
  - 30 shallow RC holes completed
  - 6m Au @ 5.85g/t, rock chips to 9.4g/t Au
  - Drilling confirmed highly anomalous REE mineralisation with up to 40% of HREEY to TREEY
- Drilling Killi Killi West & Coyote projects is proposed for July



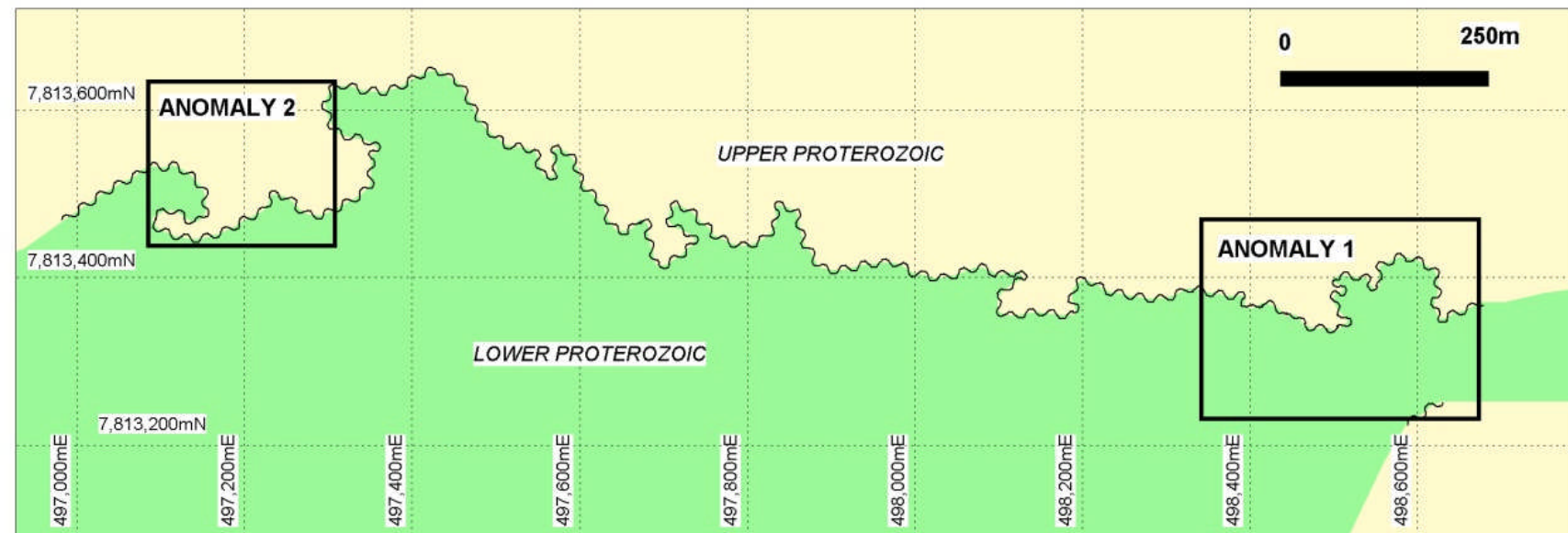
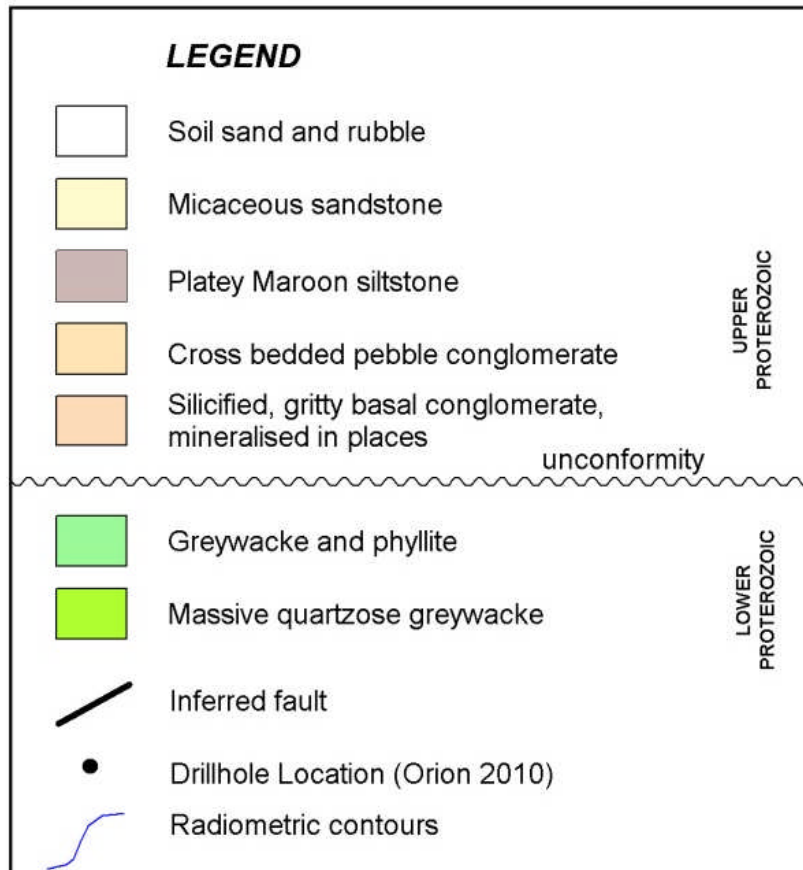
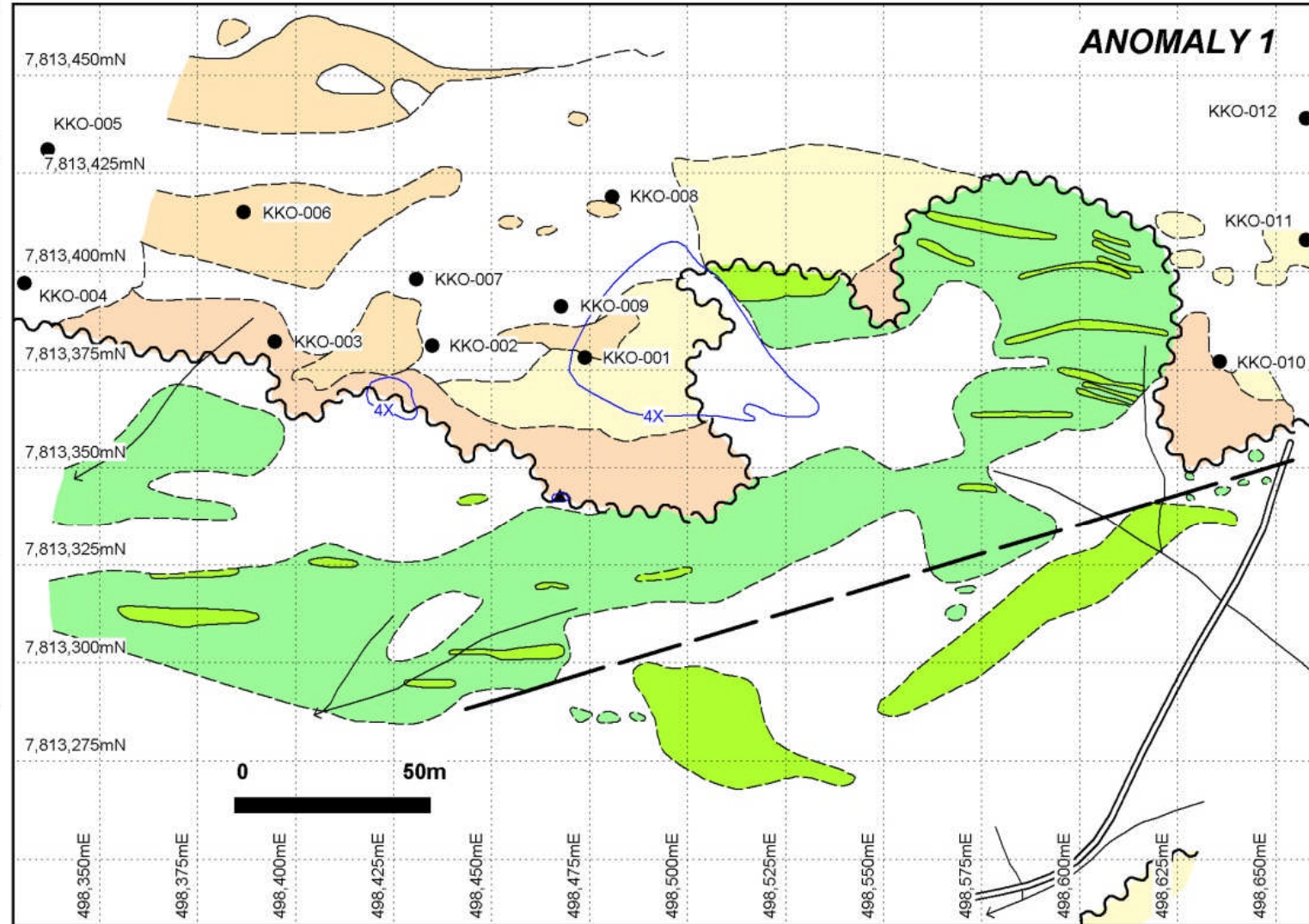
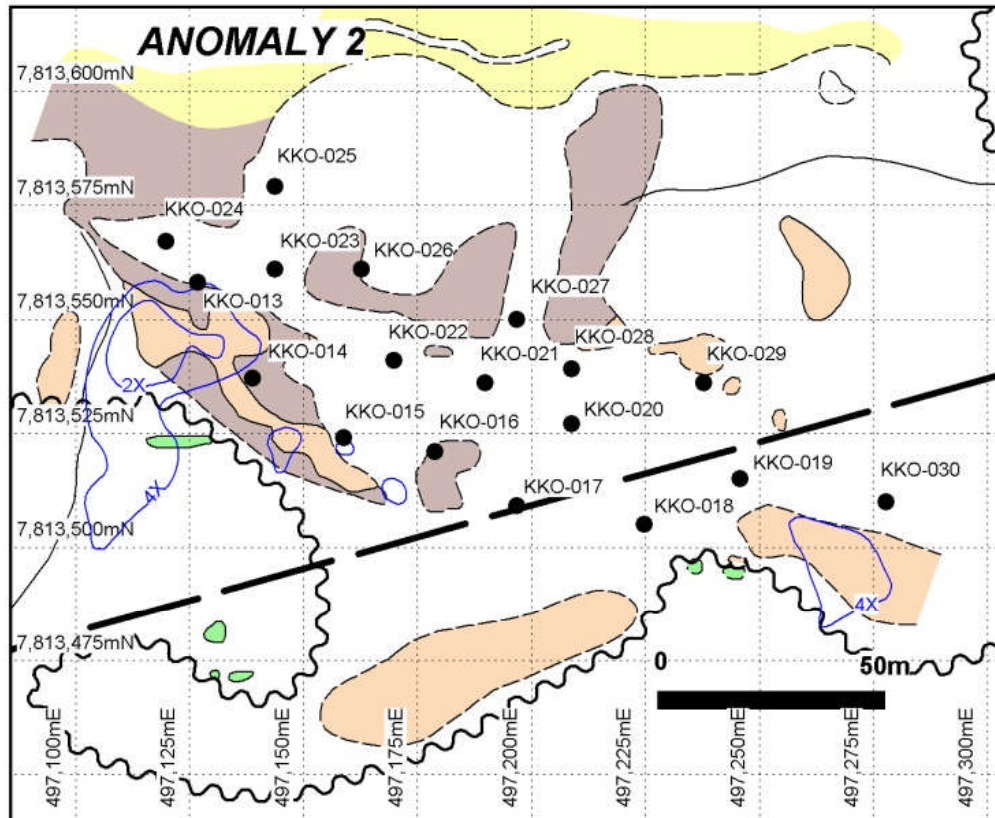
# Preliminary Findings

- The Killi Killi Hills tenements represent an important REE+Y discovery
- Newly recognised REE mineralisation in a Au/U province
- Why Killi Killi Hills is significant:
  - Unconformity is interpreted to be a conduit for hydrothermal fluids (bearing REE, Au & U)
  - These fluids were most likely expelled from a crystallising igneous complex (alkali granite)
  - The regional faults in the area may have provided a pathway for fluids
- Regional exploration focus should find the primary REE source “The Feeder” on a more regional basis

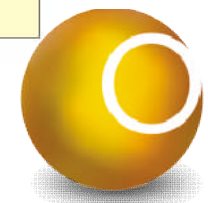


# Maiden Drilling Nov 2010

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**ORION METALS LIMITED**  
**KILLI KILLI EAST PROJECT - WESTERN AUSTRALIA**  
**DRILLHOLE LOCATIONS (2010)**



# Drilling Results - 2010

Table 1: REE & Gold Mineralised Drill Intercepts (ppm)

Sample	LREE grams per tonne					HREE grams per tonne							Gold
	Y	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Er	Tm	Yb	Au
KK01 0-6													5.58
KK02 2-3													0.21
KK03 1-3	534	192	605	774	224	23	137	19	103	55	6	33	0.07
KK04 0-3	236	151	456	634	156	14	73	9	50	30	4	21	0.07
KK07 4-6													0.3
KK07 7-8	26	168	387	326	67	7	29	3	7	3	1	2	0.04
KK09 0-2	277	152	485	687	193	17	100	12	57	29	3	17	0.13
KK013 0-3	507	554	1367	905	248	22	134	20	115	76	10	58	0.25
KK014 0-1	568	319	1118	>1000	423	32	175	23	118	74	8	47	0.02
Kk015 3-4													0.4
KK019 2-3	75	251	760	667	144	14	67	6	21	11	1	9	0.02
KK021 6-7													0.12
KK022 3-4	55	274	869	725	116	9	44	4	13	9	1	7	0.01
KK023 1-6	53	222	649	493	82	7	32	3	11	7	1	6	0.01
KK024 1-4	134	355	969	728	139	12	57	6	26	18	2	15	0.02
KK025 4-8													0.44
KK027 2-3	426	471	1364	>1000	205	17	99	13	79	57	8	48	0.01
KK030 3-4	55	184	574	463	119	12	52	5	15	7	1	5	0.02

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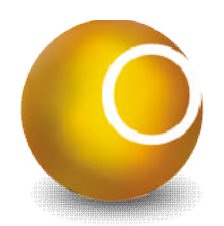
**Table 2 – Anomalous REE & Au Drill Intercepts in Basement Rocks (ppm)**

Sample	LREE grams per tonne					HREE grams per tonne							Gold
	Y	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Er	Tm	Yb	Au
KK05 7 - 11													0.21
KK05 11-18	116	79	176	130	31	4	24	4	22	13	2	10	
KK013 4 - 5	43	223	644	565	103	9	42	4	12	6	1	4	
KK013 4 - 5													0.29
KK016 6 -12	99	65	151	116	28	4	23	4	21	12	2	9	

**Table 3 - Rock Chip Samples – Significant REE & Gold Results (ppm)**

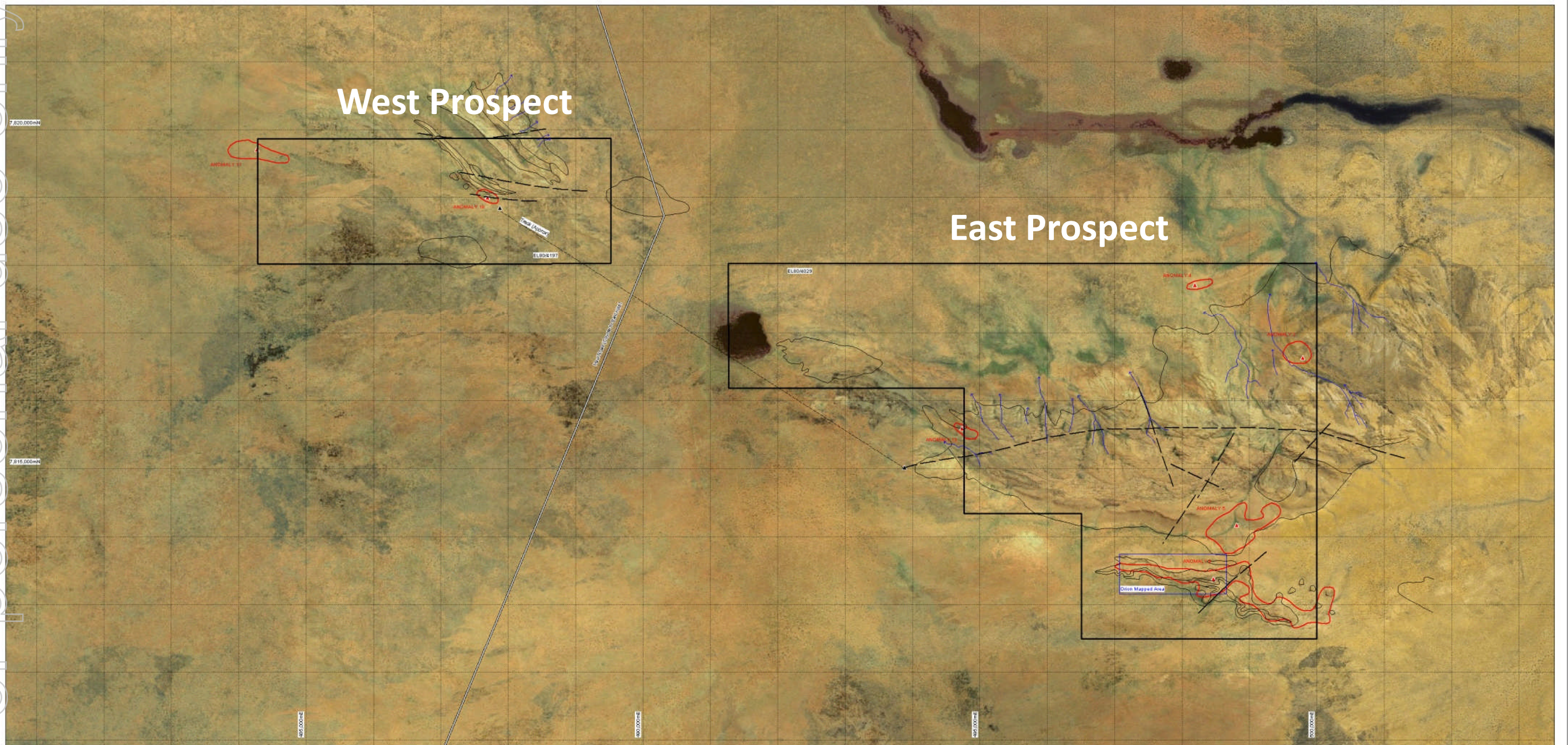
Sample	LREE grams per tonne					HREE grams per tonne							Gold
	Y	La	Ce	Nd	Sm	Eu	Gd	Tb	Dy	Er	Tm	Yb	Au
KK42	121	475	1325	>1000	319	31	145	12	35	19	2	16	0.1
KK43	414	606	1468	>1000	229	19	119	16	105	84	12	76	0.01
KK48	904	811	2071	>1000	357	36	215	33	207	137	18	100	0.03
KK49	1094	263	510	632	159	23	182	35	274	217	31	184	0.01
KK57	1444	367	1118	>1000	608	65	382	54	317	169	19	93	0.71
KK64	56	721	1890	993	142	12	59	6	18	10	1	7	0.01
KK65	108	502	1427	>1000	176	13	66	7	26	20	3	18	0.01
KK66	51	600	1657	987	159	13	67	6	16	8	1	6	0.01

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# Killi Killi - Radiometric Anomalies

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**GEOLOGY LEGEND**

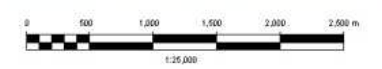
□	Sand
□ 14 15	Laminated quartz greywacke with silts massive siltstone and apple nuked sandstone
□ 2	Miocene siltstone and upper conglomerate
□ 3	Basal conglomerate gnl and sandstone
□	Unconformity
■ 4	LOWER PROTEROZOIC

Geology from QML 1009

**AEROMAGNETIC LEGEND**

○	Radiometric Anomaly 2x background
▲	Centre of Radiometric Anomaly (see table for coordinates)
▲	Start and end points of track (see table for coordinates)

ANOMALY	EAST MGA	NORTH MGA	COMMENT
3	-466.790	7.819.833	+ 3.0X CONTOUR
4	-466.191	7.817.739	+ 2.5X CONTOUR
5	-466.812	7.814.174	+ 2.0X CONTOUR
6	-468.488	7.813.381	+ 4.5X CONTOUR
10	-467.595	7.819.003	
11	-464.274	7.819.707	2.5X SPOT
13	-464.733	7.815.597	+ 2.5X CONTOUR
T1	-463.881	7.815.024	Start Track
T2	-467.879	7.819.948	End Track



**ORION METALS LIMITED**

8804029, 8804197 KILLI KILLI

**KILLI KILLI PROJECT**  
Western Australia

**GEOLOGY AND RADIOMETRIC ANOMALIES**

COMPILED BY	A. DAY	FEB 11	SCALE 1:25,000	ENCLOSURE
DRAFTED BY	K.J. CORRIE	FEB 11	PROJ. MGA44 Zone 52	
REVISED BY			Dwg No.	

# Killi Killi Thorium Hot Spots

Eastern tenement E80/4029

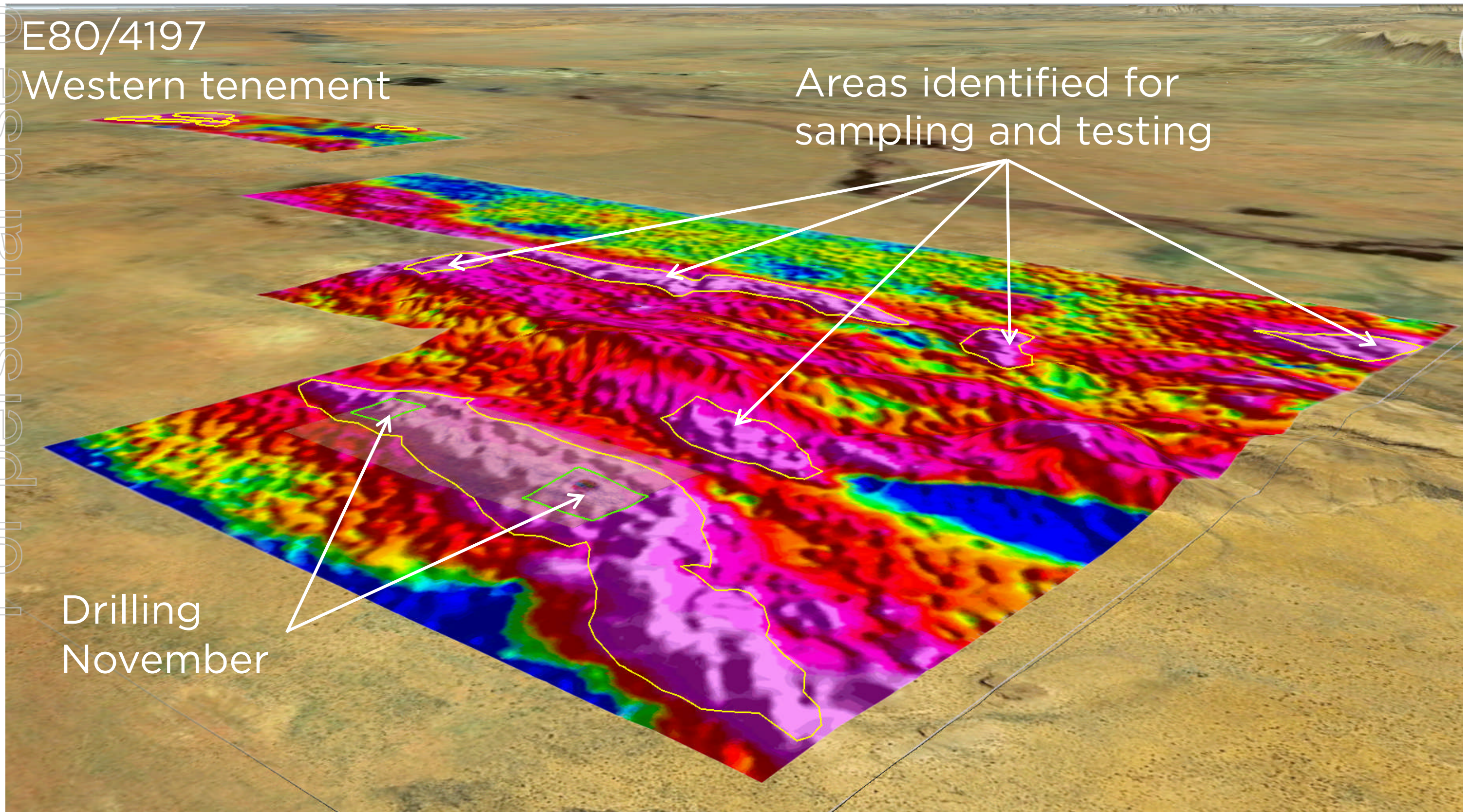
E80/4197

Western tenement

Areas identified for  
sampling and testing

Drilling  
November

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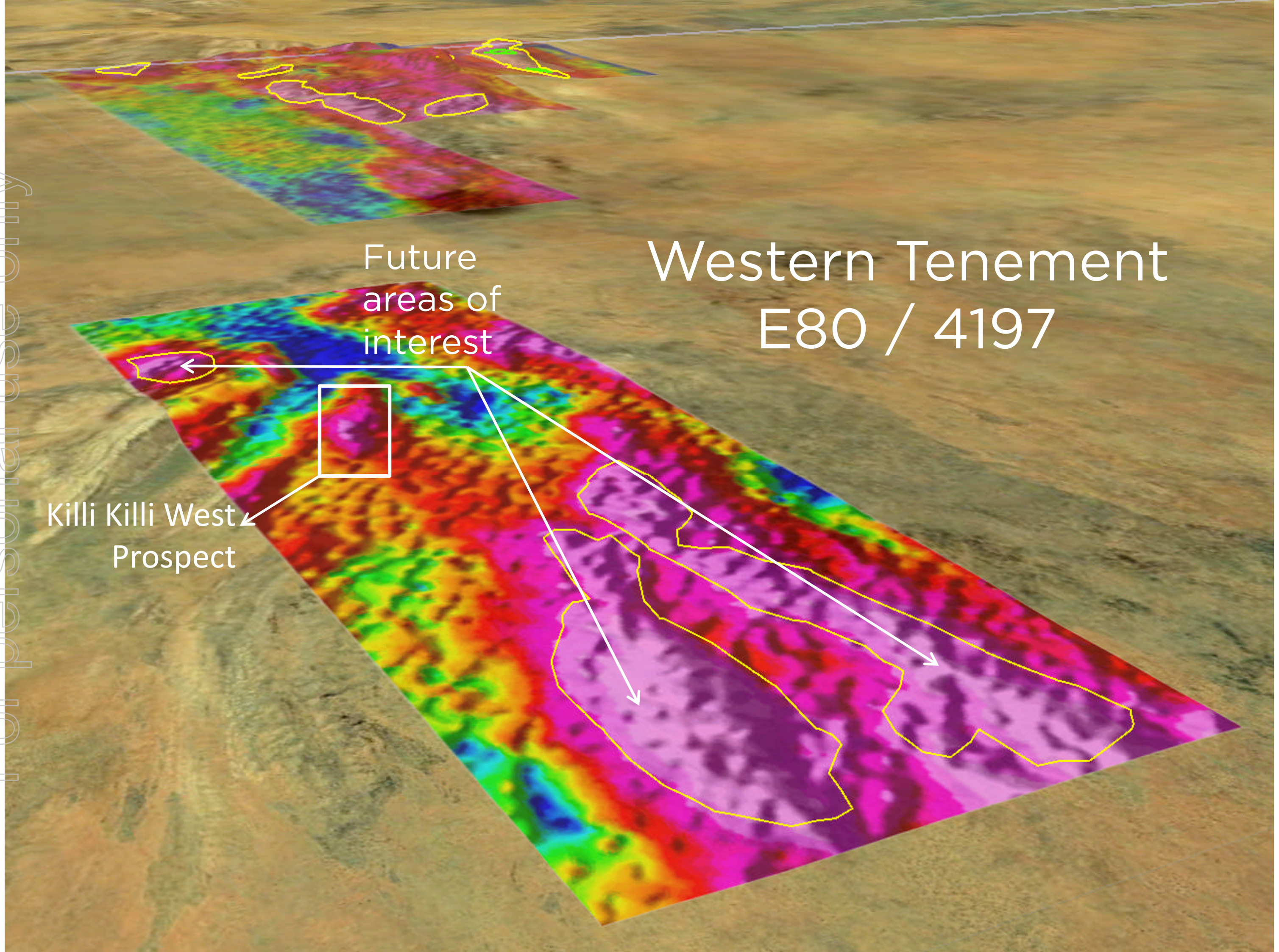


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# Western Tenement E80 / 4197

Future  
areas of  
interest

Killi Killi West  
Prospect





# Regional Geology & Magnetics

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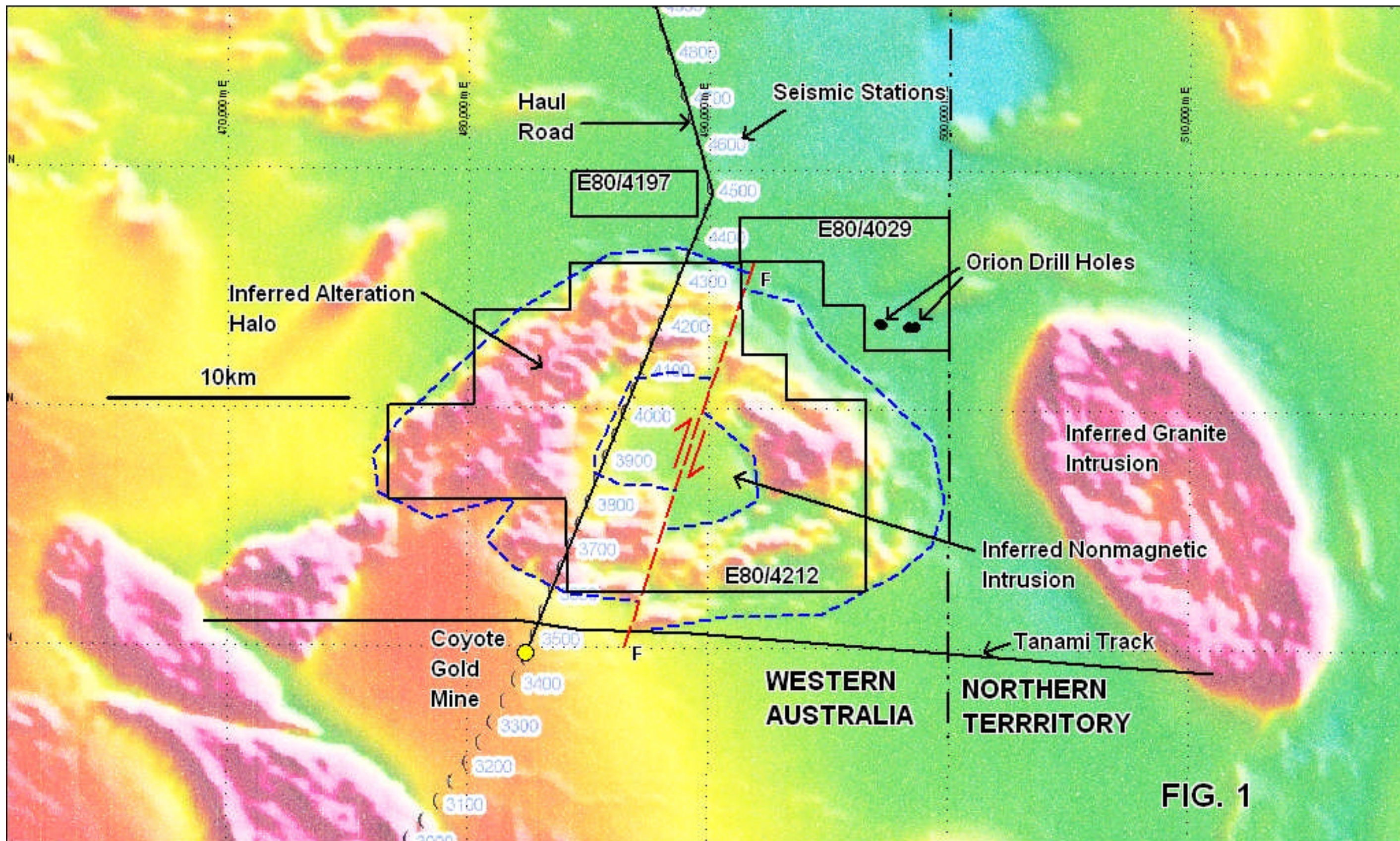


FIG. 1

# Exploration Program 2011

- Tenement acquisition E80/4558, 4559 & 4596 – completed
- JV with MetalBank Limited E80/4212 - Jan
- Desktop regional study – Feb
- Radiometric anomalies – field work to investigate 7 anomalies – May
- Aircore regolith sampling – late June
- Metallurgical testing – results due June/July
- 2 Drill programs – July & Aug/Sep
- Airborne geophysical survey completed over 600km<sup>2</sup>
- Regional appraisal incorporating new data for securing and delineation of regional controls & targets



# Not all 17 REE's are the same

- Two completely different markets
  - Light & heavy
- Light Rare Earths (LREE) – more available REE, less valuable grouped ~US\$100/kg
  - La, Ce, Pr, Nd, Pm, Sm – polishing & magnets
- Heavy Rare Earths (HREE) highly sort & much more valuable
  - Eu, Gd, Dy, Tb, Lu, Er – electronics & magnets
  - Rarer & becoming increasingly sort after
  - High prices – Dysprosium oxide (US\$1,400/kg) magnets, lasers, nuclear & Europium oxide (US\$1,300 to currently over (US\$3,000/kg)
- No realistic or effective substitutes which are essential for high technology, military, aerospace and clean energy applications



# REE Applications

	Catalytic	Magnetic	Electrical	Chemical	Optical
Lanthanum (La)	✓		✓	✓	✓
Cerium (Ce)	✓		✓	✓	✓
Praseodymium (Pr)		✓	✓	✓	✓
Neodymium (Nd)	✓	✓	✓		✓
Europium (Eu)					✓
Gadolinium (Gd)		✓			✓
Terbium (Tb)		✓			✓
Dysprosium (Dy)		✓			✓
Yttrium (Y)					✓



# Additional REE Projects

## Bonnor & Fulford Creeks REE (NE QLD)

- 5 EPM's & 1 MLA covering 580km<sup>2</sup>
- Large drainages containing alluvial heavy minerals accumulations – high in monazite & xenotime
- Large unexplored greisen altered granite bodies, potential for tin & REE

## Broughton Creek (NW QLD)

- Farm-in Agreement to be concluded in June on highly prospective REE project located 30km north of Mary Kathleen uranium mine in (1950's – 1960's)
- Rock samples have recorded very high levels REE & uranium – thought to have similar mineralisation controls to Mary Kathleen



# Final Thoughts

- Poised for further discoveries
- Prudent experienced management & financial controls cement a strong financial position
- Review of other projects confirm the value and expansion strategy for KKH in Tanami region
  - New JV's, purchases or farm-ins
  - Is there a relationship between REE and Au regionally?
- Follow up KKH exploration commenced
- A number of drilling programs are planned for 2011
- REE are highly sought after – critical
- China signals interest in importing HREE



# Contact details

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