



Orion Minerals_{NL}

ASX Code: ORN

JSE Code: ORN

BFS & Intense Exploration, Demonstrating Value in a Proven Minerals Belt

Investor Presentation
November 2017



“Expediting development at Prieska while seeking to unlock the minerals potential of the extensive land package through advanced exploration”

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Orion: Corporate summary



- Orion's primary listing is on the ASX.
- Orion's secondary listing of its Shares on the Main Board of the Johannesburg Stock Exchange commenced in September 2017.
- Orion has seen strong buying interest on the JSE.

Capital Structure Summary

Shares on Issue ⁽¹⁾	1,135M
Options on Issue	219M
Market Capitalisation (3.0cps (ASX)) ⁽²⁾	\$34M
Bridge Loan (12% interest, 31 May '18 term) ⁽³⁾	\$6.0M
Convertible Notes (2.6cps convert, 12% coupon, Mar'19 maturity) ⁽⁴⁾	\$6.0M
AASMF Loan ⁽⁴⁾	\$1.4M
AASMF Preference Shares ⁽⁴⁾	\$1.6M
Cash on Hand (at 30 September '17)	\$4.2M

Significant Holder Name

%

Tembo Capital	17.44%
Tarney Holdings	8.15%
Silja Investment & Alexander Haller ⁽⁶⁾	6.09%
Independence Group	4.77%
Significant Holder Total	36.46%

Board

Denis Waddell	Non Executive Chairman (chartered accountant)
Errol Smart	CEO, Managing Director (geologist)
Bill Oliver	Non Executive Director (geologist)
Alexander Haller	Non Executive Director (economist)
Tembo Capital Nominee ⁽⁵⁾	Non Executive Director

Key Management

Martin Bouwmeester	CFO, Company Secretary (FCPA)
Michelle Jenkins	Executive: Finance and Admin (CA, engineer, geologist)
Walter Shamu	Executive: Mining & Development (engineering, law)
Louw van Schalkwyk	Executive: Exploration (geology)
Nelson Mosiapoa	Social Responsibility Advisor (chemical engineering, government policy)

(1) Orion announced on 30 October '17 a \$5.5M capital raising (2.4 cents per Share), made up of \$3.47M in Tranche 1 (144.58M Shares) and \$2.03M in Tranche 2 (67.67M Shares) (subject to shareholder approval, at a general meeting to be held 13 December '17). Shareholder approval also to be sought for Mr Waddell, to subscribe for Shares at the same price. Tranche 1 Shares were issued on 3 November '17.

(2) Closing price of ORN Shares on the ASX on 6 November 2017. Closing price of ORN Shares on the JSE on 6 November 2017 was ZAR 1.20

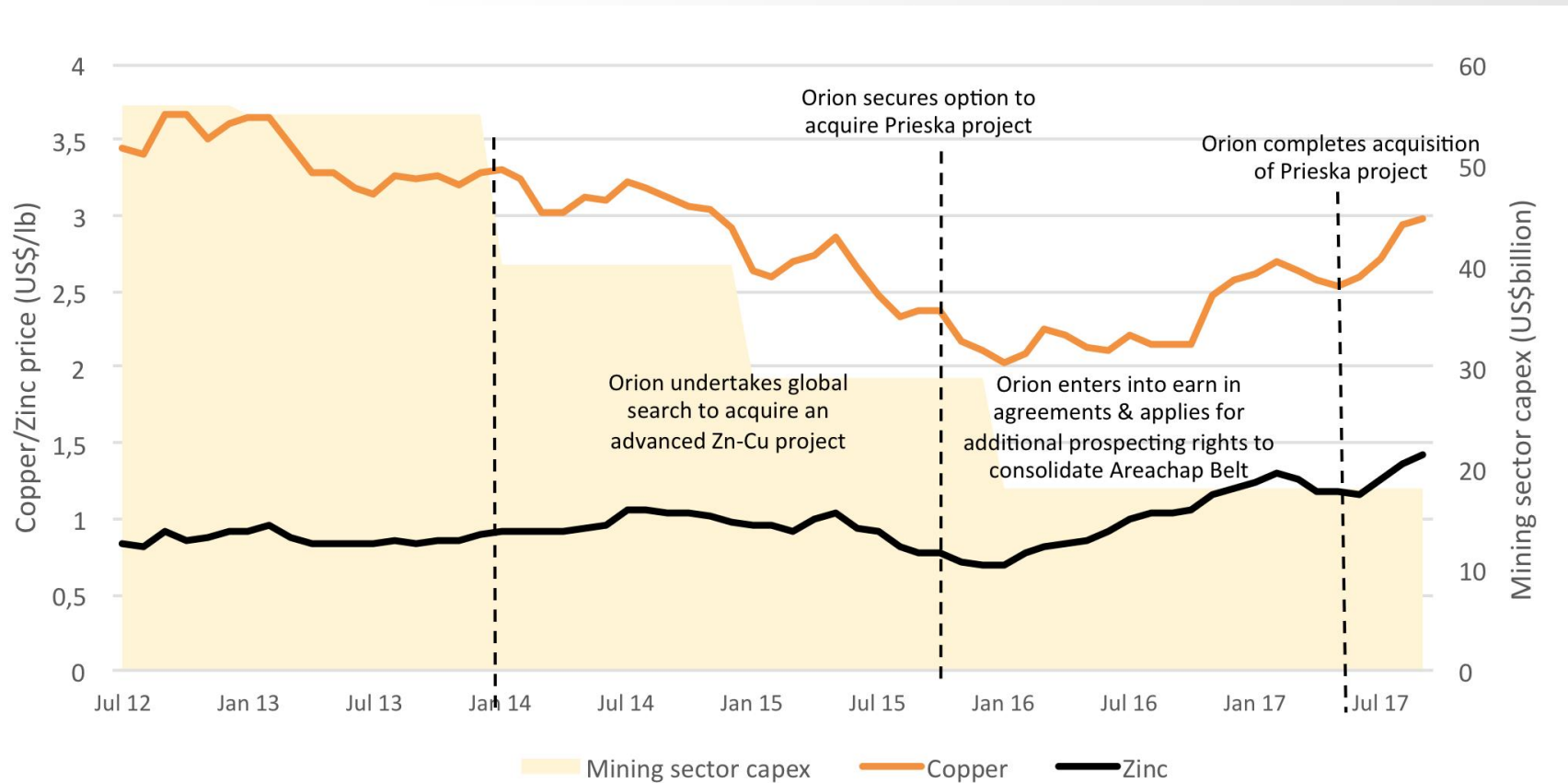
(3) Refer to ASX releases 18 August '17 and 15 November '17 for additional information. \$5M has been drawn down against the Bridge Loan.

(4) Refer to the Company's June '17 Annual Financial Report for information related to the Convertible Notes, along with the Redeemable Preference Shares Agreement (ZAR15.75M) and a Loan Agreement (ZAR14.25M) that Repli Trading No 27 (Pty) Ltd (a 73.33% owned subsidiary of Agama Exploration & Mining (Pty) Ltd) has entered into with Anglo American Sefa Mining Fund.

(5) Tembo has the right to appoint a non-executive director to Orion's Board for so long as it holds at least 12.5% of Orion's issued shares. Refer to ASX release 31 May '17 for additional information.

(6) Mr Alexander Haller is deemed to have a relevant interest in securities held by Silja Investment Ltd.

Executing a well timed counter cyclic growth strategy



Source: Barclays Research, Federal Reserve Price Data

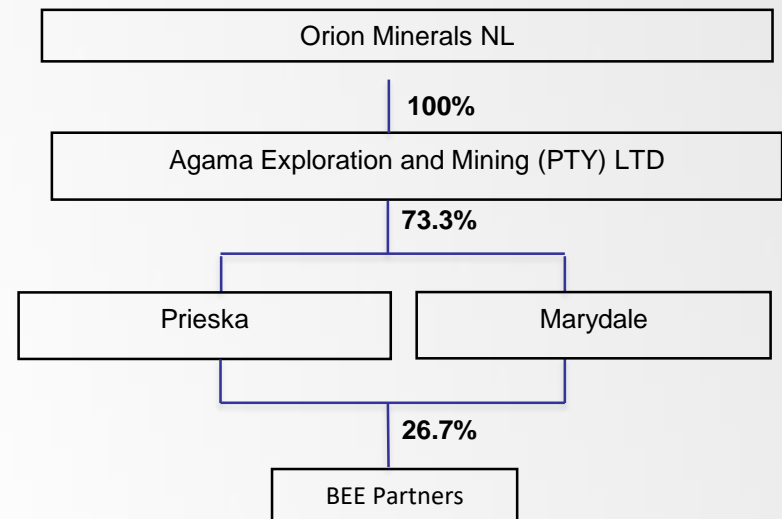
PCM is an Advanced Stage, Large Scale, High Grade, Zinc – Copper Project With Superb Exploration Upside

- [illegible]

Prieska ownership structure



- Orion acquired option to purchase Agama Exploration & Mining in July 2015
 - Extensive DD process completion, including technical, regulatory and economic work streams
 - Transaction consideration A\$8.9m*, completed in March 2017
- Orion has a 73.3% economic interest in the Prieska and Marydale VMS project
- Full compliance with prevailing South African Black Economic Empowerment legislation
- BEE partner is empowered at the asset level
- BEE partners are the Mosiapoa Family and Power Matla



Prieska BEE compliant ownership structure

* Acquisition consideration comprised Cash A\$3.3m, ORN shares A\$2.2m (each share having one attaching option), shareholder loan settlement A\$3.4m, refer to ASX release 29 March 2017.

Prieska – A mining success story with lots remaining



Mine Manager's planning proposal to Anglovaal corporate office (June 1987)*

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MINING & MILLING	MONTH: - MAY 1987								
	PLAN			ACTUAL			TOTAL FOR PREVIOUS YEAR		
	TONS	Cu %	Zn %	TONS	Cu %	Zn %	TONS	Cu %	Zn %
A. Tonnage Mined & Killed									
Drilled Mining Reserve				808766	1.458	4.38	23765496	1.569	4.259
Broken from Ore Reserves				82270	2.388	6.572	1978253	1.679	4.896

*This is an historical estimate and is not reported in accordance with the 2012 Edition of the JORC Code. A Competent Person has not completed sufficient work to classify the historical estimate as Mineral Resources or Ore Reserves as defined in the JORC Code. It is uncertain whether Mineral Resources or Ore Reserves will be able to be reported until the current drilling program is completed
Source: Mine Archive, refer ASX release 9 May 2017.

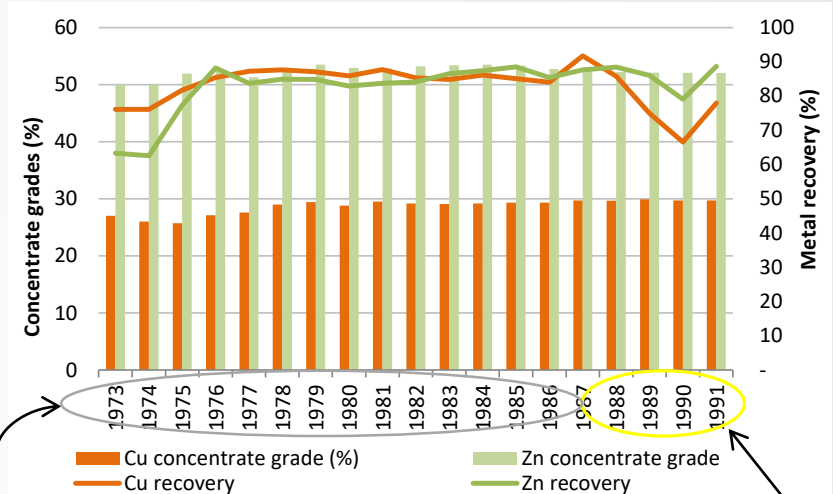
- Operated by Anglovaal from 1971-1991, employed 4,000 people
 - Infrastructure rich with all key services remaining on site
- Milled 46.8mt producing >430kt copper and >1mt zinc in concentrate
- Post May 1987, no more than 2mt of ore was blasted (milling of surface stockpiles from 1989)
- Mine closed and site rehabilitated 1991
- Historic resource estimation practices conformed to “Industry Best Practice” of the time
 - Extensive historic drill hole data
 - Mine survey and geology plans show un-mined extensions and support last reported mine planning reports

Extended history of metallurgical success



- Proven metallurgical process flowsheet at operational scale to handle variable ore feed
- Mill feed grade decline post 1987 reflects the cessation of underground development
- Historical production demonstrates consistent concentrate grades and recoveries despite variable ore feed over LOM
- BFS will optimise plant design and match proposed mining sequence
 - Initial open pit mining with a mixed oxide/transitional feed
 - Transitioning to sulphide feed from underground
- 3.5t of samples submitted to MINTEK for metallurgical test work to confirm previous results for +105 Level Target (Open Pit) material

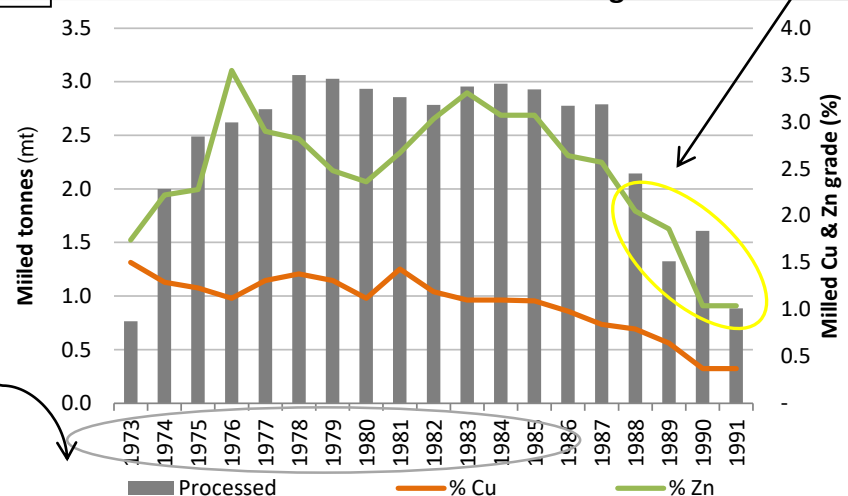
Consistent concentrate grades and recoveries despite change in feed¹



Treatment of predominantly sulphide material

Treatment of mixed oxide, intermediate, sulphide ore and low grade stockpiles

Prieska milled tonnes and Cu & Zn grades¹



1. Historical production data from 1973 to 1991 under Anglovaal ownership

Metallurgical test work confirming expectations



Summary of Recent Metallurgical Test Work Results

Test Description		Test Head Grade		Total Recovered to Concentrate			Combined Tails		
		Cu (%)	Zn(%)	Mass (%)	Cu Rec. (%)	Zn Rec. (%)	Mass (%)	Cu (%)	Zn(%)
Cu Rich Deeps	Rougher	2.41	2.79	37	93.5	93.4	63	0.25	0.29
Zn-Rich Deep	Rougher	1.47	6.48	34	94.1	96.9	66	0.13	0.30
Zn-Rich Supergene	Rougher-Cleaner	1.53	8.87	17	92.0	92.8	83	0.19	0.94
Test Description		Copper Concentrate				Zinc Concentrate			
		Cu Rec. (%)	Cu Grade (%)	Zn Rec. (%)	Zn Grade (%)	Cu Rec. (%)	Cu Grade (%)	Zn Rec. (%)	Zn Grade (%)
Cu Rich Deeps	Rougher	89.5	12.0	22.2	3.4	4.0	0.5	71.2	10.3
Zn-Rich Deep	Rougher	88.9	8.6	10.4	4.4	5.2	0.4	86.6	30.5
Zn-Rich Supergene	Rougher-Cleaner	-	-	-	-	89.7	8.0	91.2	47.2

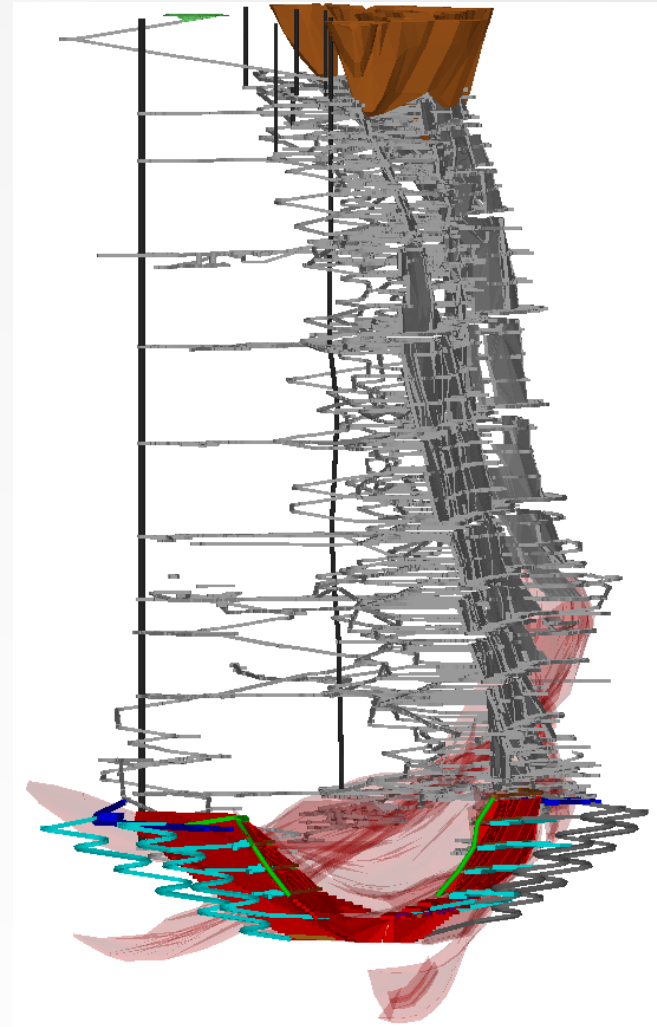
Current test work on Orion drill core is confirming performance expectations based on production history.

- * The above test work confirms ability to achieve high recoveries with froth flotation
- * Test work continues to determine optimized recoveries and re-cleaner flotation to produce high grade concentrates

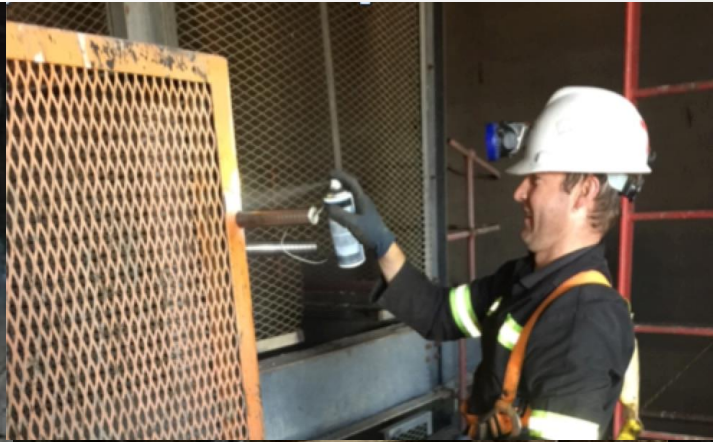
Significant infrastructure footprint



- Sealed access roads to project site
- 48km via bitumen road to existing rail siding
- 75MW operational solar power plant
 - 4 HV regional lines linked to national electricity grid
- 800km rail link to major, bulk commodity and deep water port at Saldanha Bay
- Bulk water pipeline supplies site
 - Sourced from Orange River with all year pumping capacity
- Good contractors accommodation available in the private village of Copperton, ~3km from project site
- Low regional environmental sensitivity
 - Existing disturbed/rehabilitated mine footprint
- **Primary shafts and decline roadways in place to reach deepest remaining targets**



Shaft & underground roadway conditions inspected by expert safety inspectors & engineers (Q2 2017)



Generating significant momentum on the ground



- Orion Board approval to commence BFS in July 2017 with target completion in Q4 2018
 - +105 Level Target, maiden JORC compliant Mineral Resource expected Q4 2017
 - Deep Sulphide Target, maiden JORC compliant Mineral Resource expected Q1 2018
- In parallel to BFS, Orion will progress key commercial work streams
 - Concentrate marketing
 - Project finance capacity and optimal structure
- Regional exploration and targeting work to ramp up in 2H 2017
- Mining Right and Environmental Impact Assessment to be submitted in Q1 CY18

Prieska aspirational project timeline

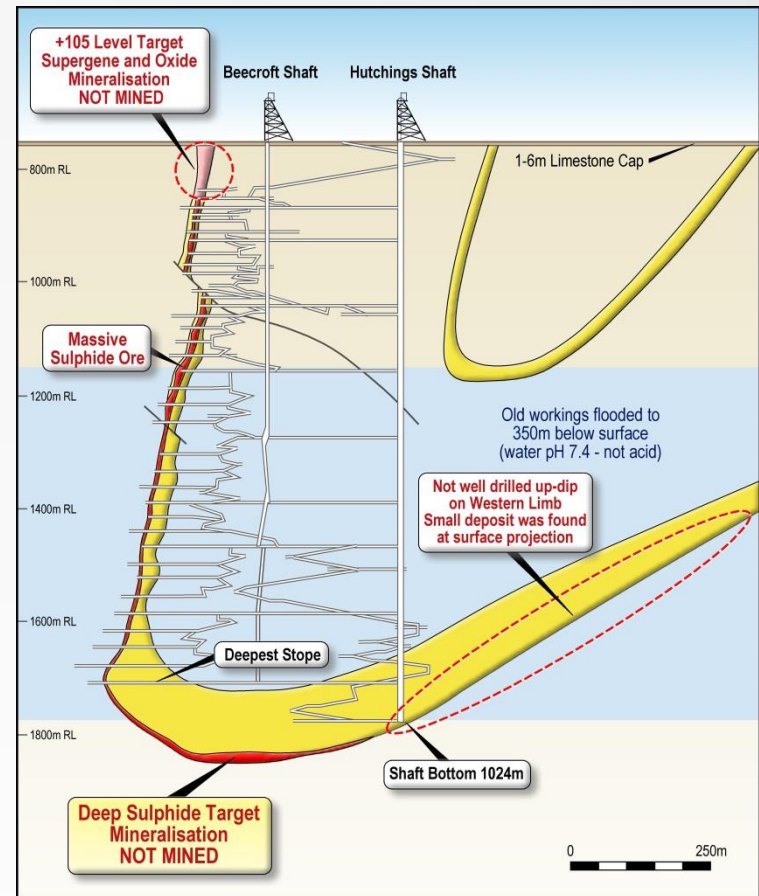
Milestone Activities	Q3 CY17	Q4 CY17	Q1 CY18	Q2 CY18	Q3 CY18	Q4 CY18	Project Approval	Q1 CY19	Q2 CY19	Q3 CY19	Q4 CY19	Q1 CY20	Q2 CY20	Q3 CY20	Q4 CY20	CY 2021	CY 2022
Resources Estimate (+105 Level Target)																	
Resources Estimate (Deep Sulphide Target)																	
Environmental Impact Assessment																	
Mining Right Application																	
Bankable Feasibility Studies																	
Project Construction																	
Ore Production - Open Pit																	
Ore Production - Underground																	

Systematic and low risk path to advancing Prieska



- **BFS scheduled for completion by Q4 2018**
 - DRA appointed as lead BFS consultants
- **Key BFS technical project parameters include**
 - Construction of 1.2mtpa throughput flotation plant to produce Zn and Cu concentrates
 - Confirm optimal sequence of open pit feed for consistency in ore presentation through oxide and high grade supergene zones
 - Confirm suitability of using a drift-and-fill and longhole stoping for the mining of deep sulphide mineralisation to minimise dilution
 - Use of underground water for process & dust suppression dewatering underground while mining open pit
 - Closed, Zero-Discharge environmental strategy
- **ABS Africa will manage the EIA studies to comply with leading international standards to support project finance**
- **Mining Right and Environmental Authorisation applications to be submitted in Q1 2018**

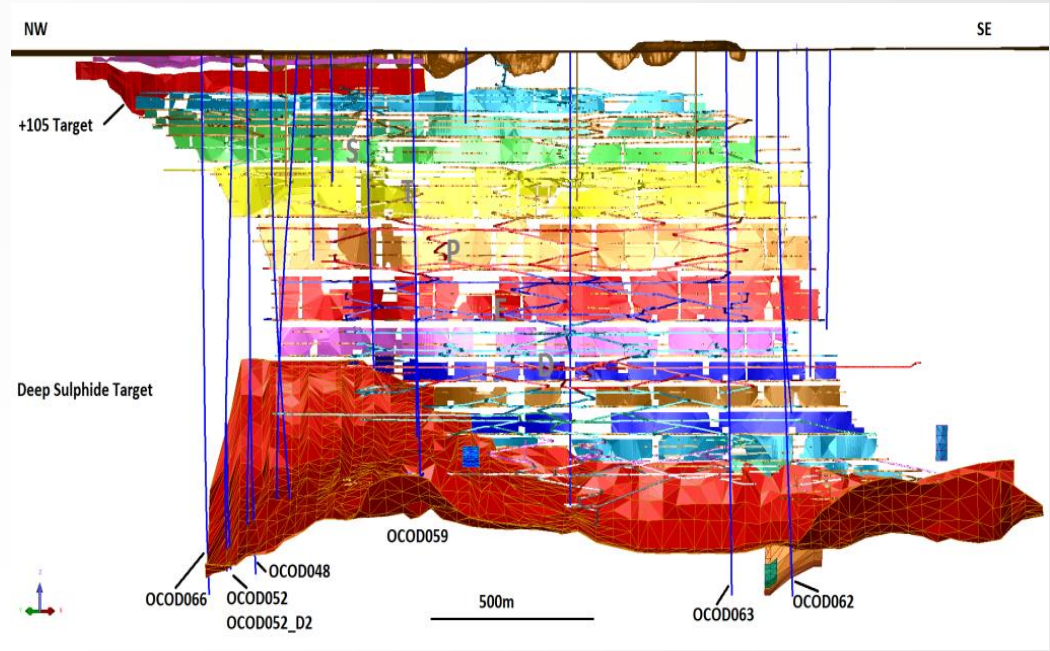
Prieska target mineralisation and existing mine infrastructure



Deep sulphide target drilling progressing rapidly



Long section with current drilling and historical development



refer ASX release 6 September 2017.

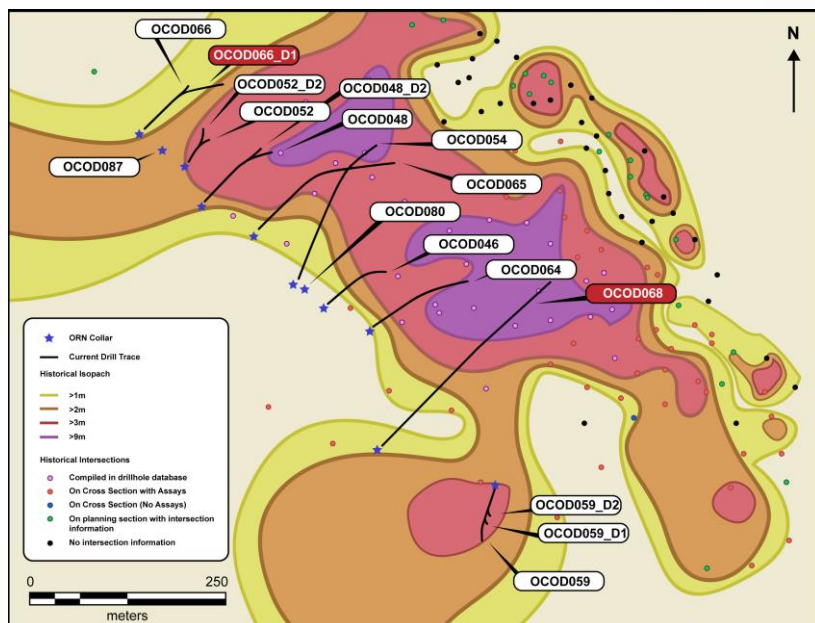
14 Drilling rigs mobile active on surface

- Dual drilling focused program
 - Confirm extensive historical drilling database on remaining mineralisation to delineate a JORC compliant Mineral Resource
 - Targeting dip and strike extensions of historically identified mineralisation
- Drilling underway with 16 rigs on site to confirm statistical validity of extensive historical drilling database, infill and extend delineated mineralisation
 - Previous drilling focused on mine scheduling at various spacing and QA/QC which do not always meet JORC 2012 classifications requirements

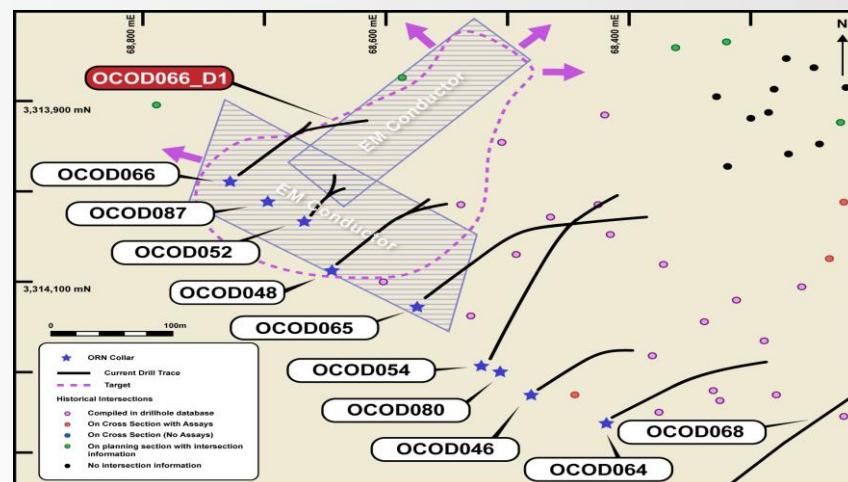
Deep drilling delivering success



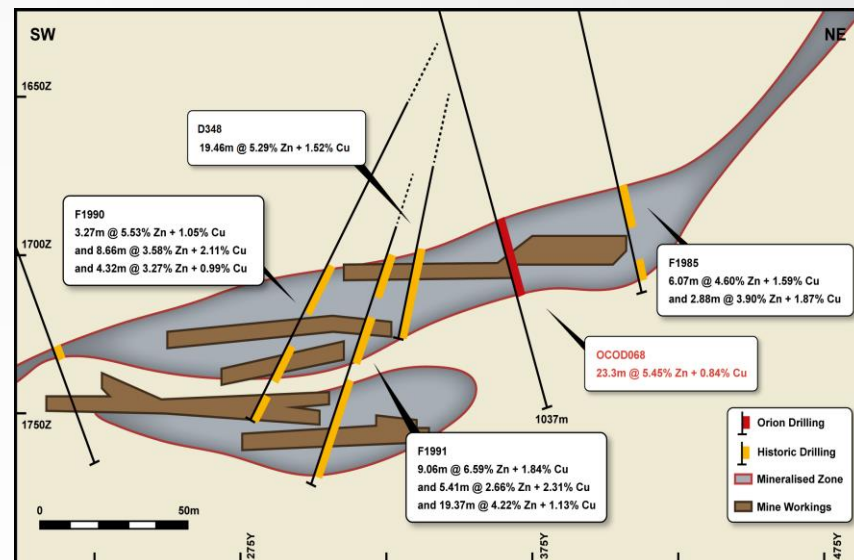
- Grade and width presented in historic mine planning validated
- Limits of historic mining confirmed
- Strong geotechnical conditions in close proximity to existing underground development confirmed
- Extensions to wide, high grade, massive sulphide mineralisation discovered



Drilling in North West Target Area

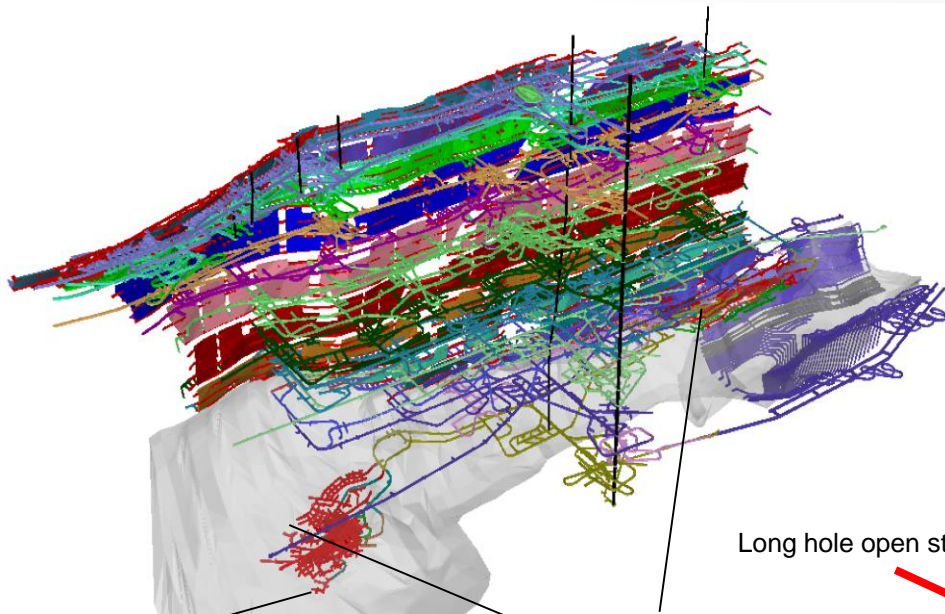


Deep Sulphide Target – newly identified wide mineralisation target



Pre-developed High Grade Massive Sulphide – Early Mining Target

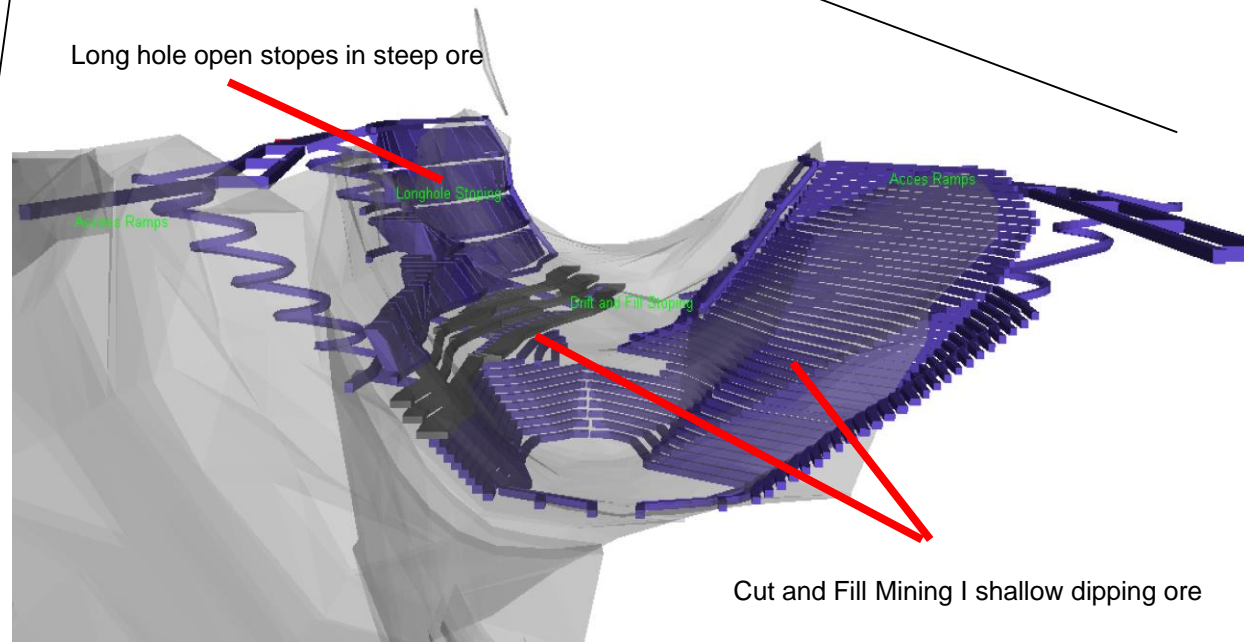
Mine planning for BFS progressing well



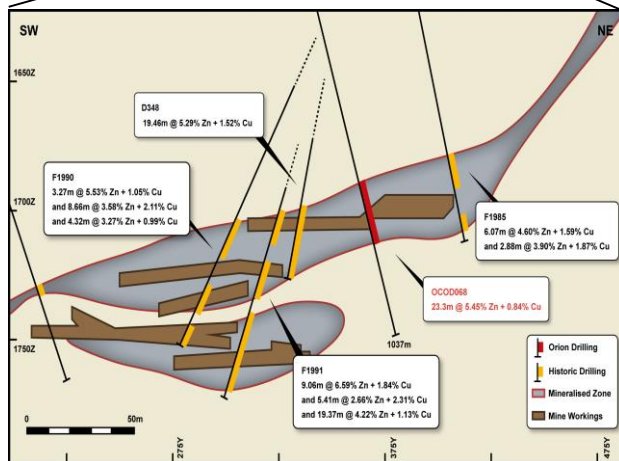
Digital mine model completed from historic survey & geology plans

Drilling has confirmed accuracy and confidence in historic data

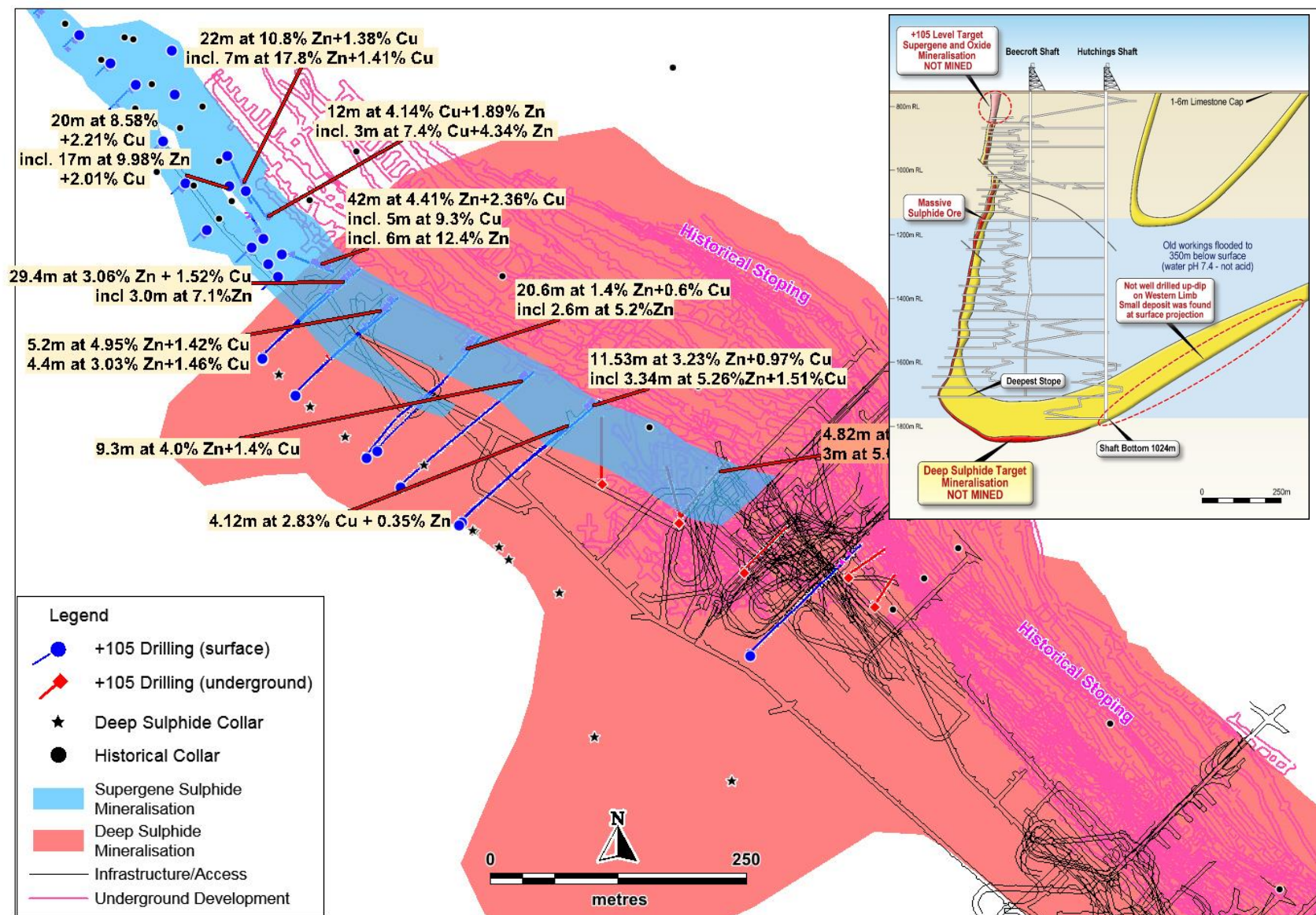
Long hole open stopes in steep ore



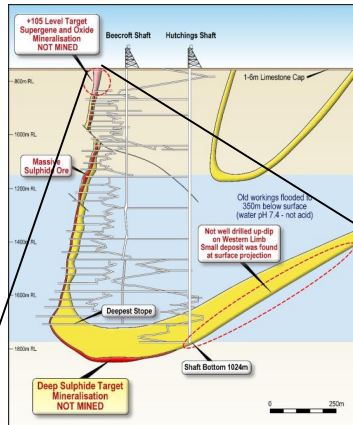
Cut and Fill Mining | shallow dipping ore



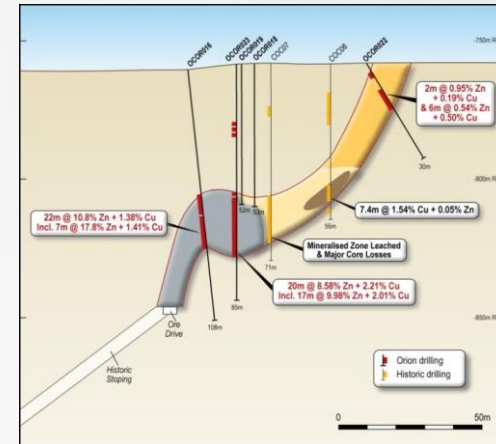
+105 high grade open pit target



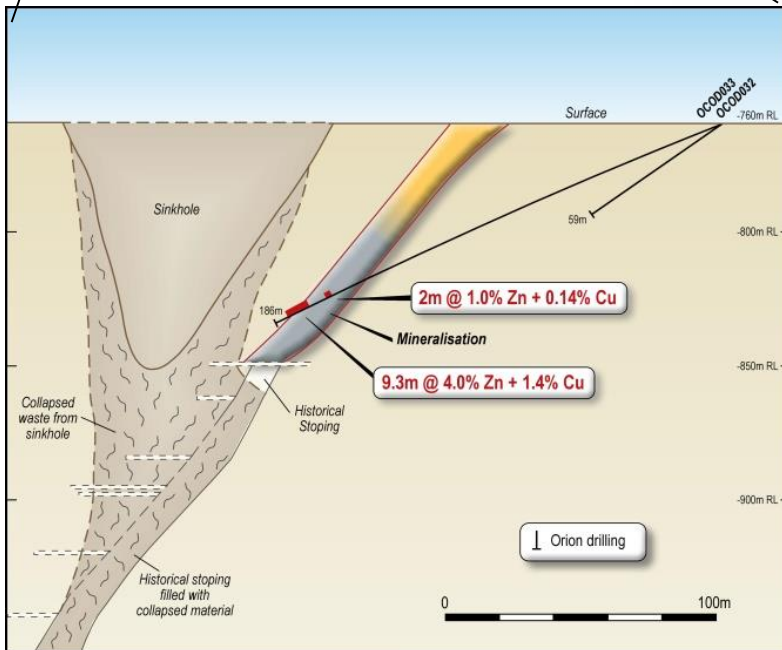
+105 Level Target - a high grade open pit opportunity



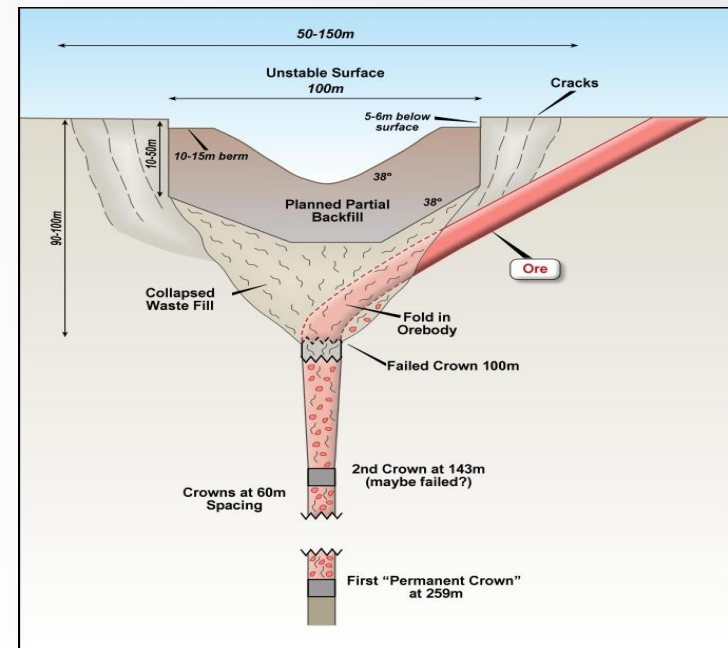
“virgin ground” over 400m strike and
Sinkhole impacted over 550m strike



“Virgin” open pit target



Drilling confirmed mineralisation persists “below” sinkholes



Geotechnical solution developed to allow mining by
open pit with selective mining in sinkhole impacted area



- Orion is a catalyst for socio-economic development.

*We strive for : * Sustainability * Focus * Entrepreneurship *Impact*

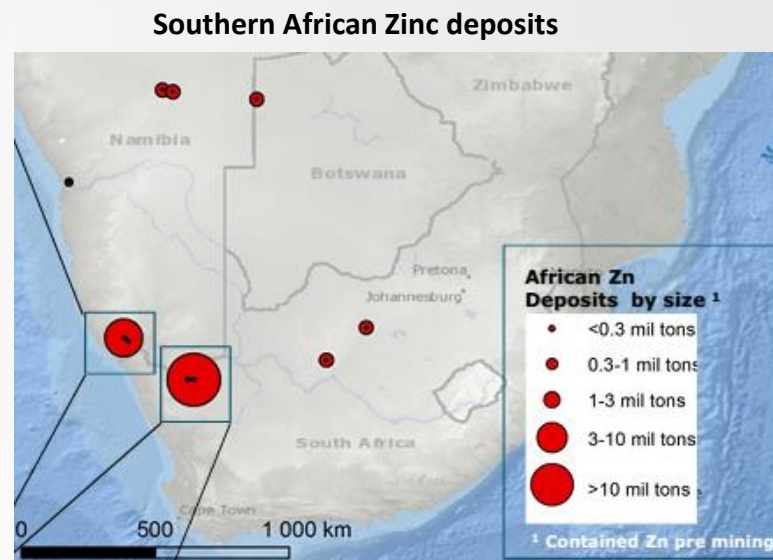
Public participation meeting in Siyathemba - Prieska



The regional potential of the Northern Cape district



- Established mining region without the social challenges common in the South African gold, coal and platinum mining regions
 - Supportive and engaged local stakeholders
- Presence of leading global mining houses and robust institutions
- Vedanta Resources is established and is growing its globally significant zinc business in Southern Africa
 - Gamsberg and Black Mountain mines and Skorpion refinery are the cornerstone assets which underpin Vedanta's regional operations
- Region has the highest concentration of zinc on the African continent¹
 - Large-scale sediment hosted deposits classified as Broken-Hill, Sedex and VMS types
 - >40mt of contained zinc
 - Vedanta has flagged a belief that significant potential exists in the region
- Orion has established a commanding landholding and exploration position in the Areachap belt and is set to play a major role this emerging minerals district



Source: Vedanta, March 2015

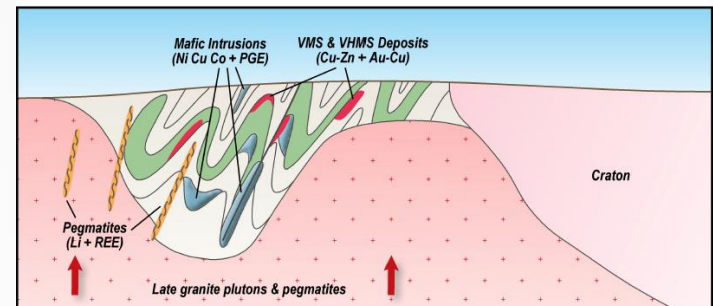
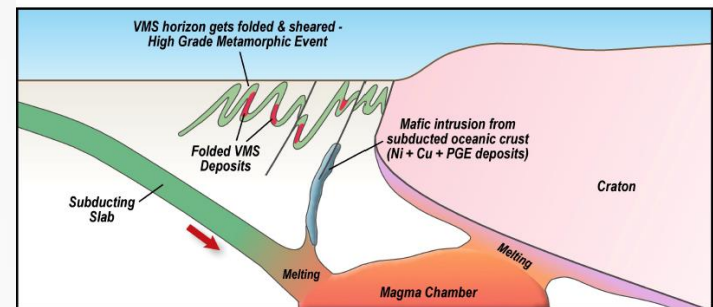
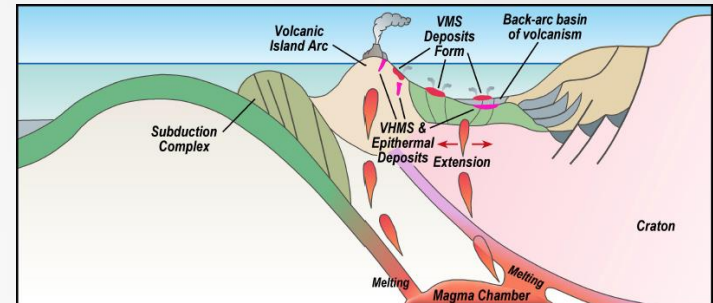
1. Vedanta Capital Markets Day presentation, March 2015



Areachap - a highly prospective base metals belt

- The Areachap terrain is within a tectonic/mobile belt on western margin of Kaapvaal Craton and has subsequently been intensely altered & tectonised
 - The Areachap Group is a heterogeneous assemblage of metavolcanic and metasedimentary gneisses exposed intermittently for 280km on the easternmost margin of the Namaqua Province
 - It represents a Proterozoic volcanic island arc resulting from the subduction of oceanic crust underneath the Kaapvaal Craton
- 22 identified VMS occurrences confirmed within the prospective Areachap sequence by major mining houses
- Several known intrusive Ni-Cu-PGE occurrences with limited further exploration for this style of mineralisation
 - Discovery of large low grade Ni-Cu deposit previously subject to feasibility study
 - Significant advances in technology has resulted in improved target generation methodology

Three superimposed geological events produce exceptional exploration potential

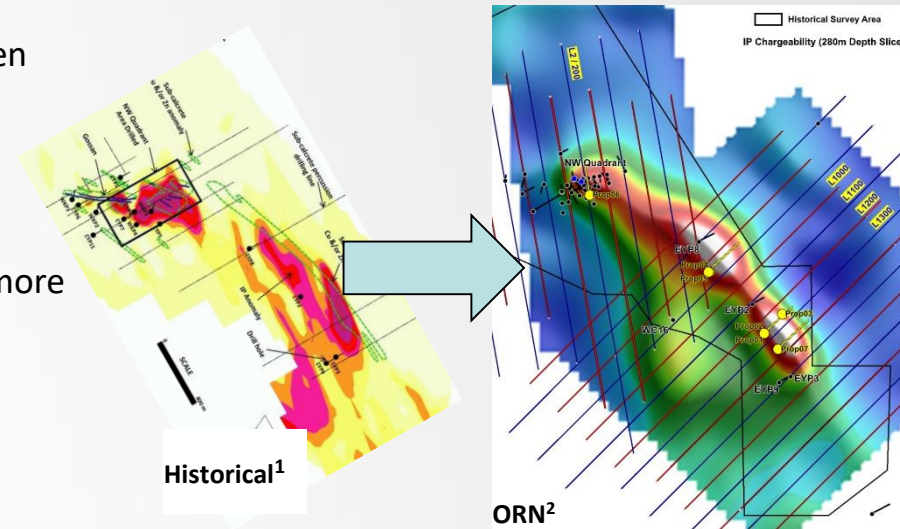




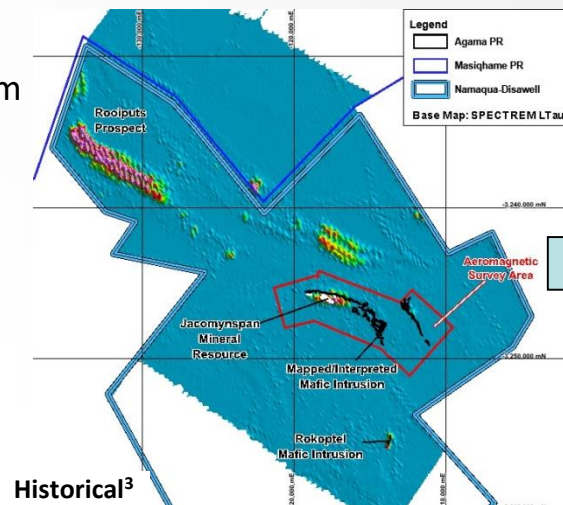
Strategy to unlock regional potential of the belt

- Value of modern exploration techniques have already been demonstrated by recent geophysical surveys
 - Majority of historical surveys 1980's
 - Techniques have been refined or superseded
 - Modern day geophysics looks deeper and detects more subtle anomalism – ideal for looking for massive sulphides below a mineralised body such as at Jacomynspan
 - Improved dataset illustrated by ORN surveys in the Fraser Range and at Marydale
- Major regional airborne EM survey planned for Q4 2017
- To be followed by ground EM and gravity surveys
- Drill rigs to move onto priority targets identified from regional survey in early 2018

Marydale IP Survey

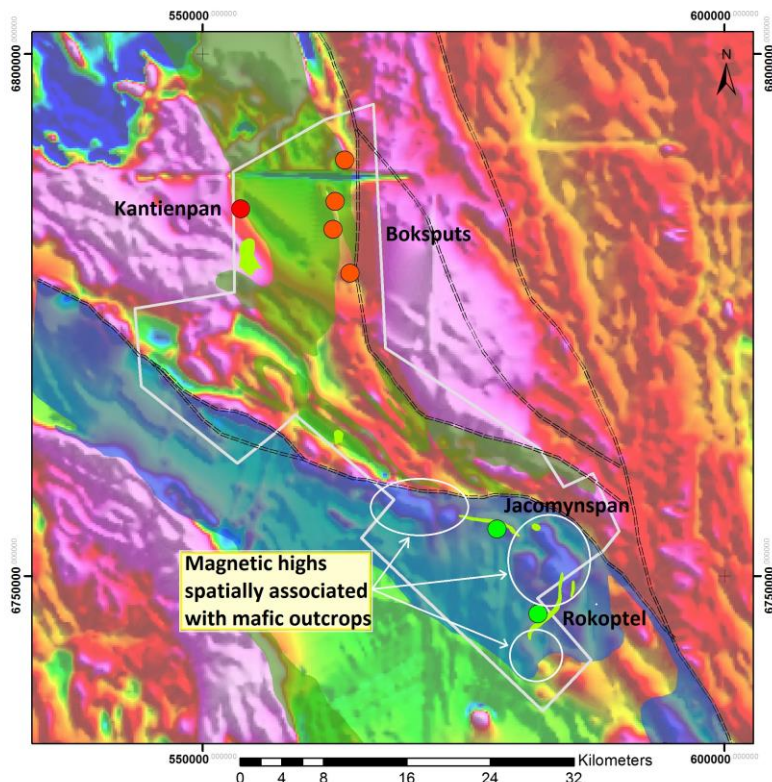


Namaqua-Disawell Airborne EM



1. refer ASX release 17 August 2016.
2. refer ASX releases 5 October 2016, 23 November 2016.
3. refer ASX release 14 July 2016.

962km² SkyTEM survey commencing mid November



Geology

Intrusive Rocks

- Mafic - Ultramafic Suite
- Granite

Areachap Group

- Mafic volcanics with carbonate rich sediments
- Meta psammite and pellicite

Jacomynspan Group

- Meta pellicite

Other

- Migmatite
- Meta psammite

Legend

Mineral Occurrence

- Ni, Cu
- Zn, Cu

Infra structure

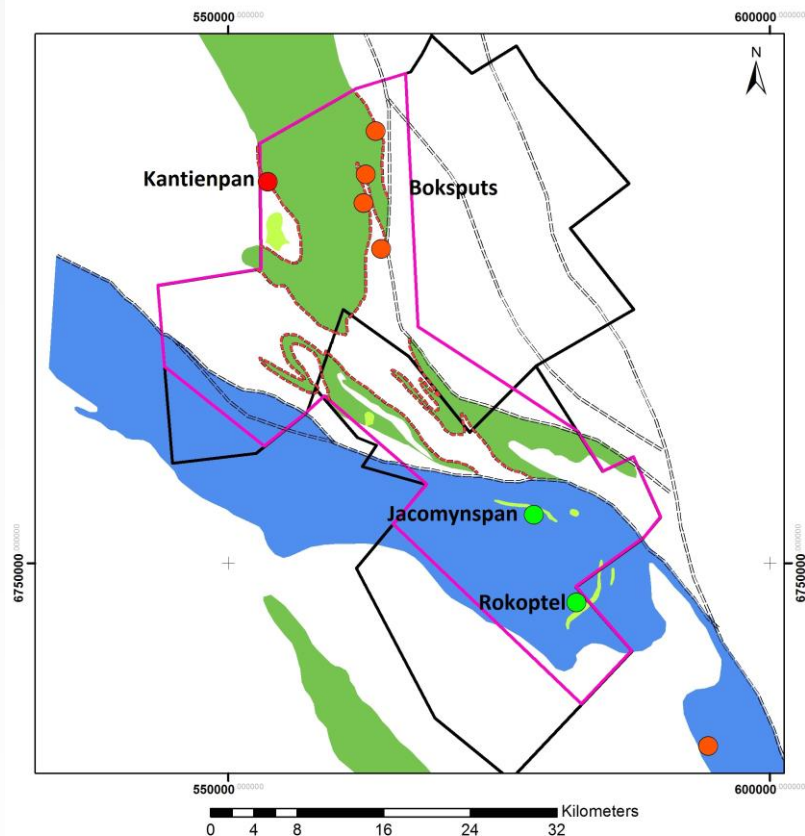
- Roads
- Railway line

AEM Surveys

- Planned flight lines
- Planned AEM Survey - Orion
- 2012 Spectrem Survey

Permit

- Masiqhame and Namaqua-Disawell Permits



Geology

- Mafic - Ultramafic Intrusives
- Areachap Group - Jannelsepan Formation
- Jacomynspan Group
- Shear zone
- VMS Target Horizon

Mineral Occurrence

- Ni, Cu
- Zn, Cu

Legend

AEM Survey planned

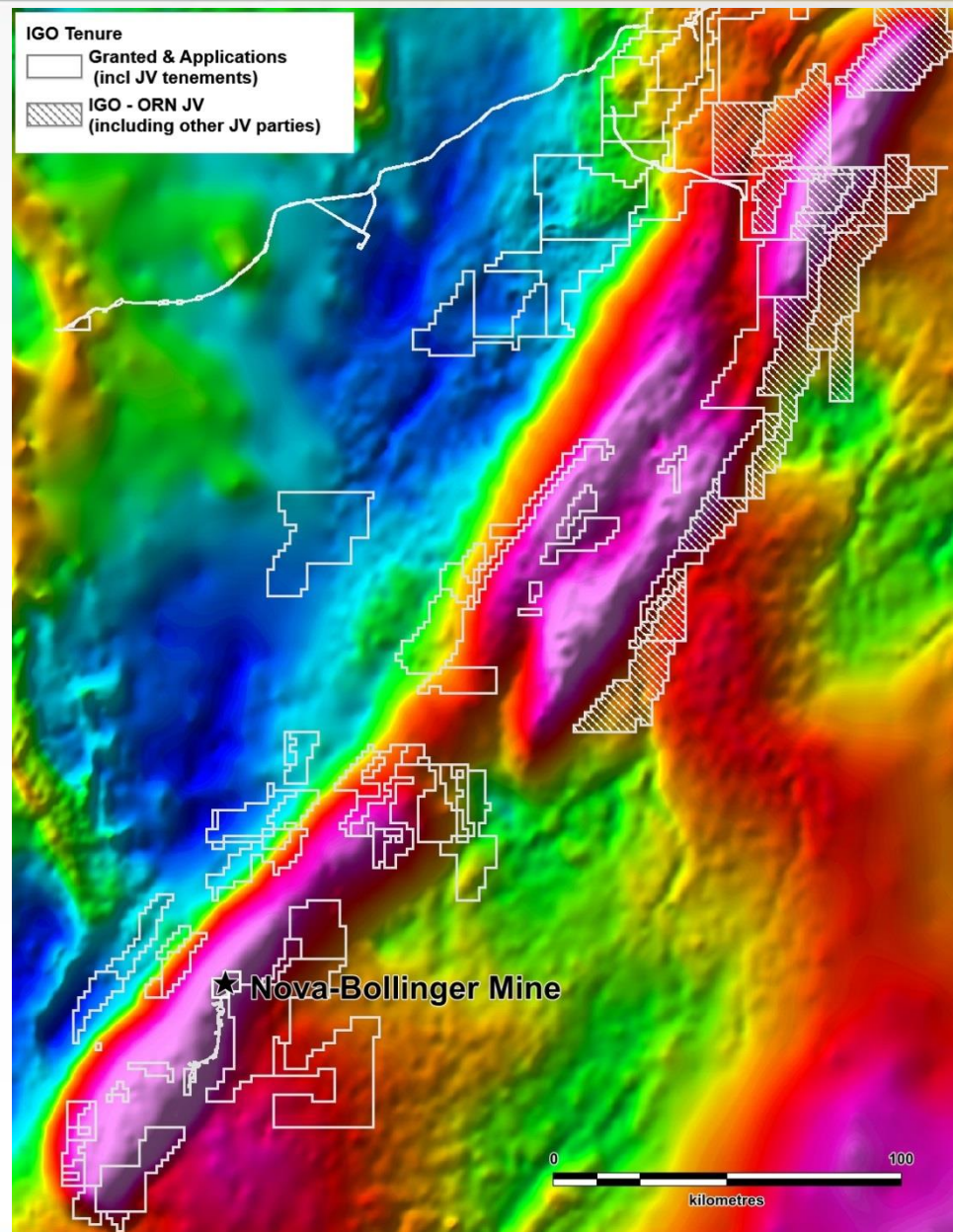
- AEM Survey outline
- Permits
- Permit Boundary



Australia – continued valuable Fraser Range exposure

- ORN's 3 830 km² Fraser Range Project in JV with Independence Group (IGO)
- ORN's 10-30% equity in tenements free carried to Pre-Feasibility Study
- ORN tenements have drilled, confirmed sulphide nickel- copper bearing mafic intrusive bodies
- IGO has become the dominant regional landholder with Nova Mine (Ni-Cu) in production
- IGO spending \$21M on Fraser Range exploration in 2018*
- Drilling currently underway by IGO on ORN tenements
- When Sirius Resources discovered Nova in 2012, Sirius's market capitalisation increased from circa \$6million* to over \$600million* within 6 months
- Sirius was acquired by IGO in 2015 for \$1.057billion*

- IGO ASX announcements 27 Nov 2015 and 17 Oct 2017
- SIR ASX announcements June 2012 and Nov 2012

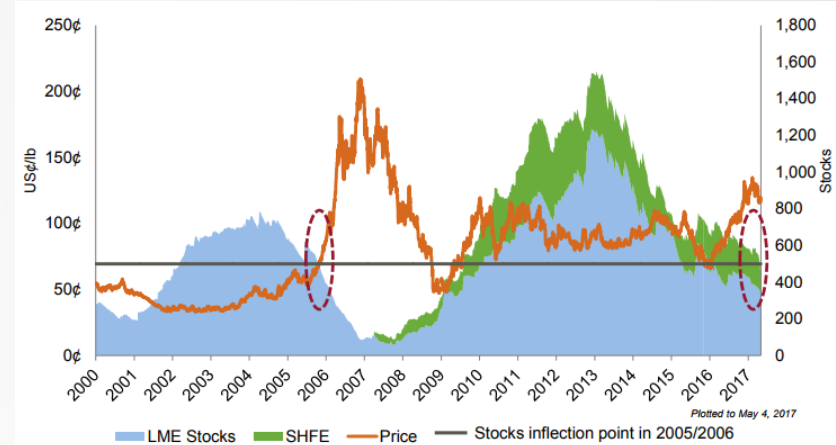


Zinc: Raw materials constraints drive positive outlook



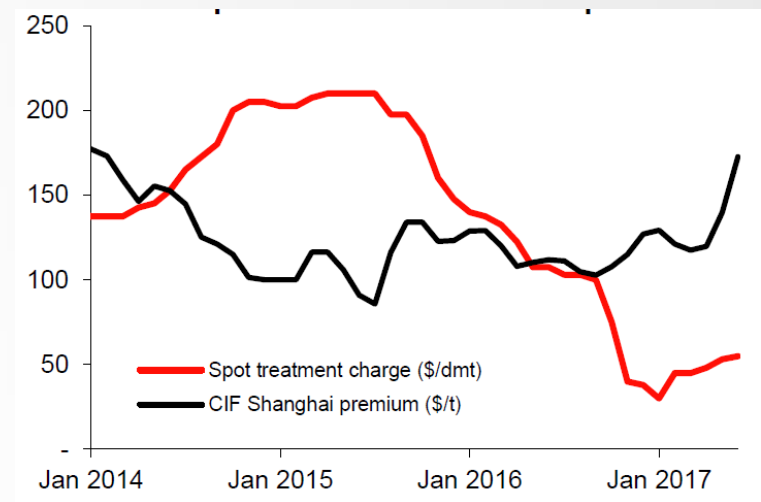
- Key mine closures and reductions over the past year starting to bite, 2016 mine output down 5.2%
 - Discretionary supply cuts from Glencore (500ktpa) and Nyrstar (100ktpa)
 - Comments from Glencore indicate a sustained period of higher prices is required prior to a restart
- Global zinc exchange stocks have experienced a significant drawdown and under 500t for the first time since 2010
- Spot TC/RC and metal premiums are at multi year lows
- Large scale uncommitted project pipeline dominated by projects with technical or geo-political challenges
- Demand dominated by galvanized steel production for use in the construction industry (infrastructure and property)
 - China accounts for 50% of zinc demand
 - Galvanizing of crude steel in China of ~5% compared to United States at 18-20%

Declining zinc stock and pricing impacts



Source: Teck Resources, LME/SHFE, July 2017

Zinc TC/RCs at multi year lows

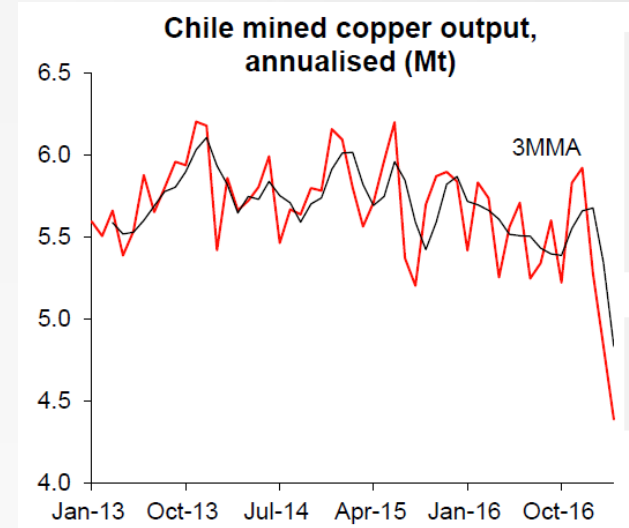


Source: Macquarie Research, July 2017

Copper: Growing demand with supply challenges

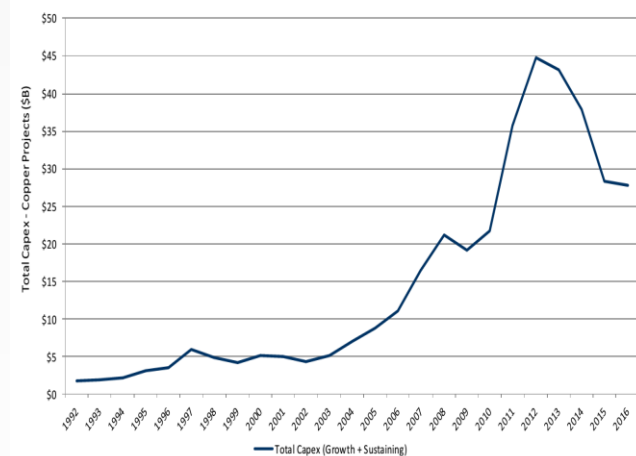


- Chilean mine supply continues to struggle
 - Grade declines and labour issues at major mines
 - Power and water challenges increase cost pressures for future Chilean production
- Large supply projects carry technical and/or geo-political challenges in emerging and frontier markets
- TC/RC's continue to trade at relatively low levels supported by continued concentrate supply challenges and robust demand
- Substitution efforts have not resulted in meaningful demand destruction/thrift in end markets despite lower relative price performance of other metals over past decade
- Megatrend momentum towards electric vehicles has potential to be a material positive demand driver
 - Transportation demand is currently 8% of global demand, a 25% EV penetration rate would double transportation demand



Source: Macquarie Research, July 2017

Significant slowdown in global copper capex



Source: RBC, November 2016

Competent Persons Statement



- The information in this report that relates to Exploration Results at the Areachap Belt projects complies with the JORC Code and is based on information compiled by and for Mr Errol Smart, Orion Minerals NL's Managing Director. Mr Smart (PrSciNat) is registered with the South African Council for Natural Scientific Professionals, a ROPO for JORC purposes, and sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Smart consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in the ASX releases referred to in the text.

Orion Minerals NL contact information:

Phone: +61 (0)3 8080 7170

Email: info@orionminerals.com.au

Website: www.orionminerals.com.au

