



## **Mundarlo VMS Drilling Underway**

### **Initial RC/DDH hole targeting centre of large EM conductor**

#### **Highlights**

- ❑ RC and diamond drill program underway at Mundarlo focussed on the centre of a large, high-priority coincident moving-loop EM and down-hole EM conductor.**
- ❑ Targeting VMS-style base metal mineralisation down-dip/plunge from massive and semi massive pyrite (up to 13m thick), intersected in the maiden drilling of the area<sup>1</sup>.**
- ❑ Recently completed geological and structural studies by Helix, and new information from the NSW Geological Survey, have confirmed the provenance of this VMS exploration target.**
- ❑ The first hole in this program is planned to a depth of 500m and is targeting the centre of the large modelled EM conductor plate.**
- ❑ A down-hole EM (DHEM) survey is expected to be undertaken in the completed hole.**
- ❑ Helix has already secured 60% project equity by completing the initial RC drilling and is now earning a further 20% by spending A\$150,000 by February 2019.**

Helix Resources Limited (ASX:HLX) (**Helix** or **the Company**) is pleased to announce that an exploration drilling program is underway at the Mundarlo Project, near Gundagai NSW.

The Company is testing the centre of a large coincident EM conductor, targeting VMS-style base metal mineralisation. The first-ever drilling of the target area (completed earlier this year by Helix) intersected massive and semi-massive pyrite-rich zones (up to 13m thick) in a probable silica-rich exhalite horizon<sup>1</sup>. These sulphide-rich zones correlated well with the near-surface position of the modelled EM conductors and are interpreted to represent the periphery of a VMS system.

Managing Director Mick Wilson said: *"The Mundarlo EM target represents a high-quality VMS drilling target opportunity for the Company that is bolstered by the findings of recently compiled geological and structural studies. This discrete program augments Helix's NSW copper-focussed strategy."*

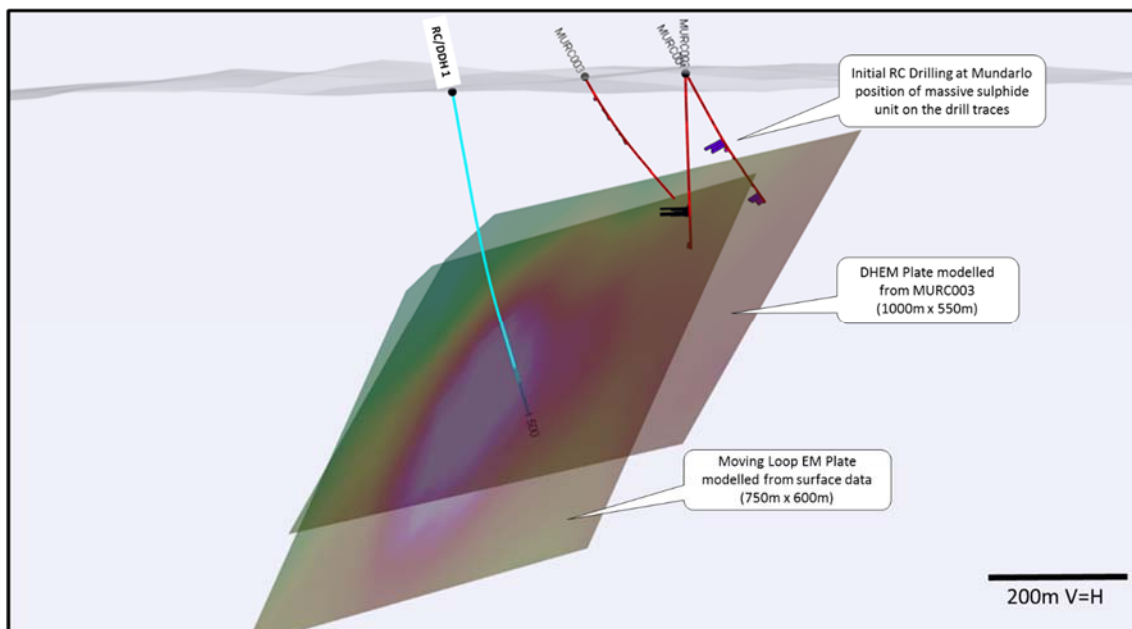
### ***Planned Exploration Program***

Technical studies undertaken by Helix since the first RC drilling program (refer next section of this announcement) have returned positive outcomes, and sees the Company committing to drilling an initial 500m drill hole to test the deeper, central portion of the large, coincident EM conductor at the Mundarlo Project.

The centre of the EM plate represents a valid exploration drill target for a possible localised massive-sulphide mineralised body that is either directly related to an in-situ feeder vent, and/or represents possible metal accumulation derived from structural modification that may have remobilised and zoned mineralisation.

A pre-collar of RC drilling is planned to a depth of approximately 350m, with a diamond core tail to be drilled to target depth (refer Figure 1).

Down-hole EM is expected to be undertaken at the completion of drilling to assist in refining the target geometry and positioning of future drill holes.



*Figure 1: 3D Schematic of the Mundarlo EM target (Late-time EM image draped on the modelled plates), showing the location of the proposed hole to test the centre of the modelled EM plates.*

### ***Mundarlo Target Provenance***

Helix commissioned petrological, litho-geochemical and structural studies following completion of the initial drilling at Mundarlo earlier this year. This work, in conjunction with the revised mapping by the NSW Geological Survey (recently released), has provided the Company with confidence to pursue a exploration target of VMS style at Mundarlo.

#### NSW Geological Survey Mapping

Recent 1:100,000 scale mapping completed by the NSW Geological Survey in the district has identified the Mundarlo Project host rocks to be of an older age Ordovician (490ma -440ma), rather than the younger age Silurian (440ma – 420ma) assumed in previous mapping (Report: GS2018/0255). Significantly for Mundarlo, this places it in the same age-group as the VMS related copper deposits Helix is targeting 350km north at Collerina, and the nearby Tritton copper systems. The host basin at Mundarlo can now be considered for similar precursor Besshi-type VMS systems, providing a geological breakthrough for the Mundarlo Project's VMS provenance.

### Petrological Observations

Additional petrological specimens were collected for assessment from the RC drilling that had intersected sulphide-rich zones earlier this year. The follow-up petrography concentrated on determining the rock type and minerals present in these massive sulphide zones intersected. The petrography suggests the sulphide zones are dominated by silica, carbon, later carbonate (dolomite) and hematite with intermixed with bands of pyrite and lesser pyrrhotite.

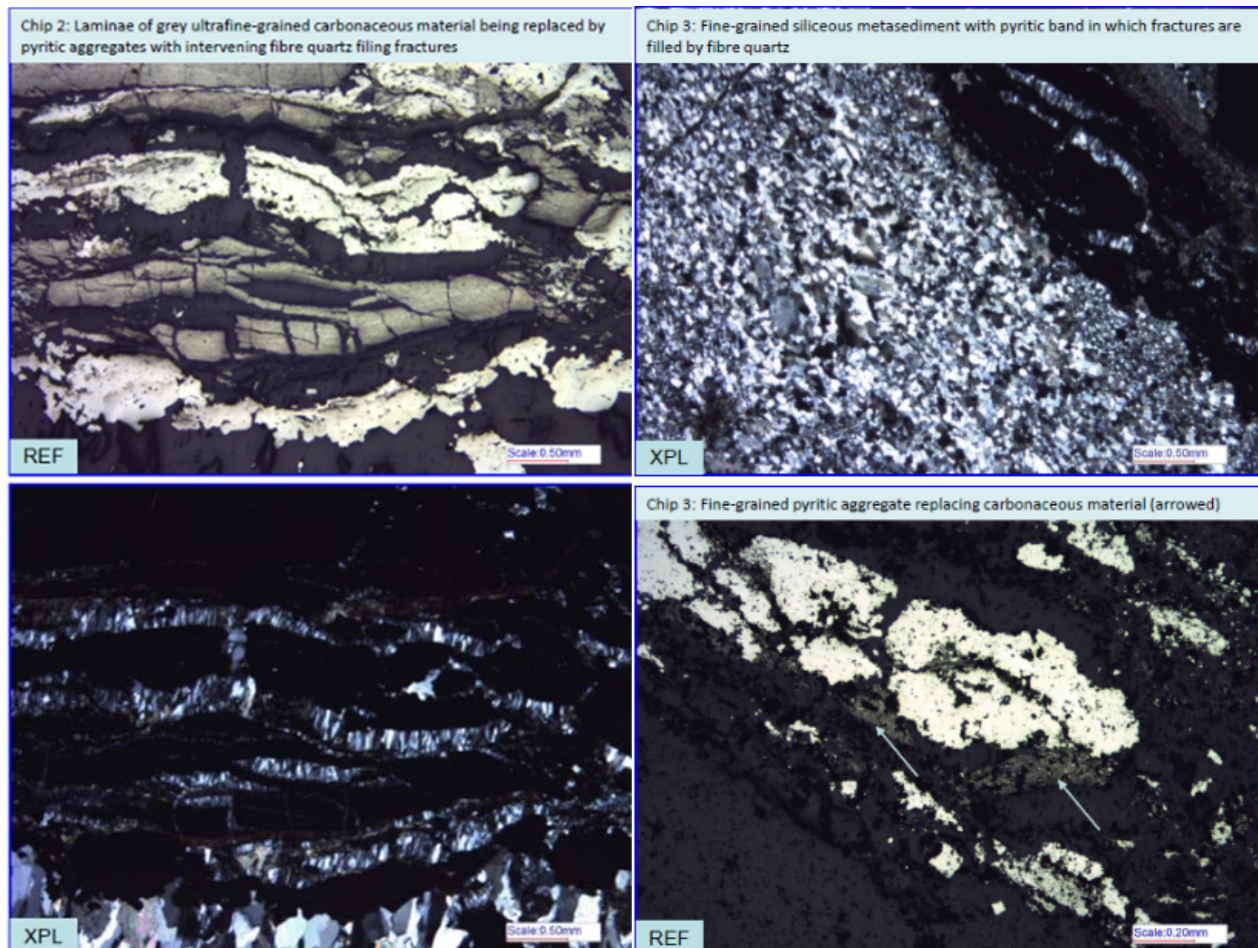


Figure 2: Thin-section photos of two examples of the Mundarlo sulphide bearing unit. Images show quartz, carbon, carbonate and pyrite.

The minerals present in these sulphide bearing units appear consistent with peripheral lithologies expected in a Besshi-type VMS system. The host rocks at Mundarlo are a mixture of basalts (tholeiitic), fine grained sediments and possible volcanoclastics, with a likely back-arc basin setting. This is consistent with the Tritton and Collerina systems settings.

### Litho-geochemical Observations

Early observations from the litho-geochemical sampling from MURC001 and MURC002 (drilled earlier this year) have highlighted several VMS-type relationships. These include:

- The depletion of sodium (Na) and enrichment of magnesium (Mg) below the sulphide horizon (footwall);
- Barium (Ba) enrichment in the sulphide-bearing unit;
- Provides a series of element ratios that can be compared to new information collected in future drilling to assist in vectoring toward the system from near-miss holes.



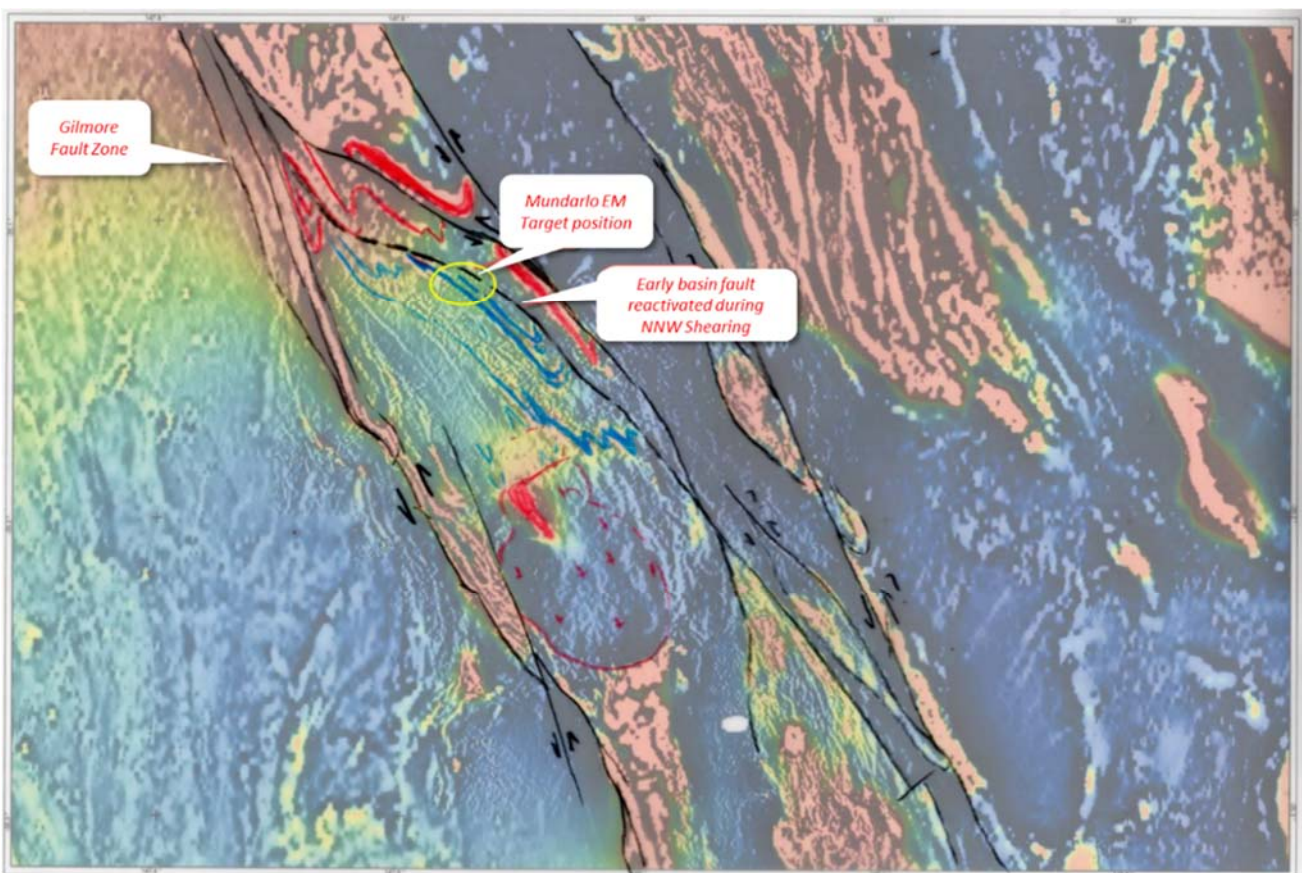
This early litho-geochemical analysis and assessment provides suitable context that the initial drilling by Helix was potentially drilled in the periphery of a VMS system and that the system is most likely in-situ to its depositional position.

### Structural Observations

Preliminary structural observations are also encouraging for the style of mineralisation sought. The strong EM anomaly identified as the primary target may lie either along or immediately above (hanging-wall) of an inferred second-order fault zone that passes through the host basin. More specifically, the target sits within a WNW-trending section of the fault zone, which would have acted as a dilational accommodation zone during shearing.

If the fault zone was active as a secondary basin fault during deposition of the host basin lithologies, then it could have acted as the locus for a VMS mineralising event.

The moderate degree of structural complexity suggests potential not only for original focusing of a VMS system adjacent to an early basin fault, and/or hydrothermal fluid vent, but also subsequent structural remobilisation of any early mineralisation, and/or deformation related emplacement of sulphide-rich mineralising fluids.



*Figure 3: Preliminary interpretation of structural setting for the Mundarlo Project. The EM target area lies in the hanging-wall of a major bend in a fault zone that links the Gilmore fault zone to another major regional feature to the east.*

## MUNDARLO JV

Helix has secured a 60% equity interest in the Mundarlo Project having satisfied the first earn-in requirement under the JV terms following completion of the initial RC drill program.

Helix has the sole right to earn a further 20% project equity in the Mundarlo Project (for a total of 80% equity) by spending an additional A\$150,000 on exploration by February 2019.

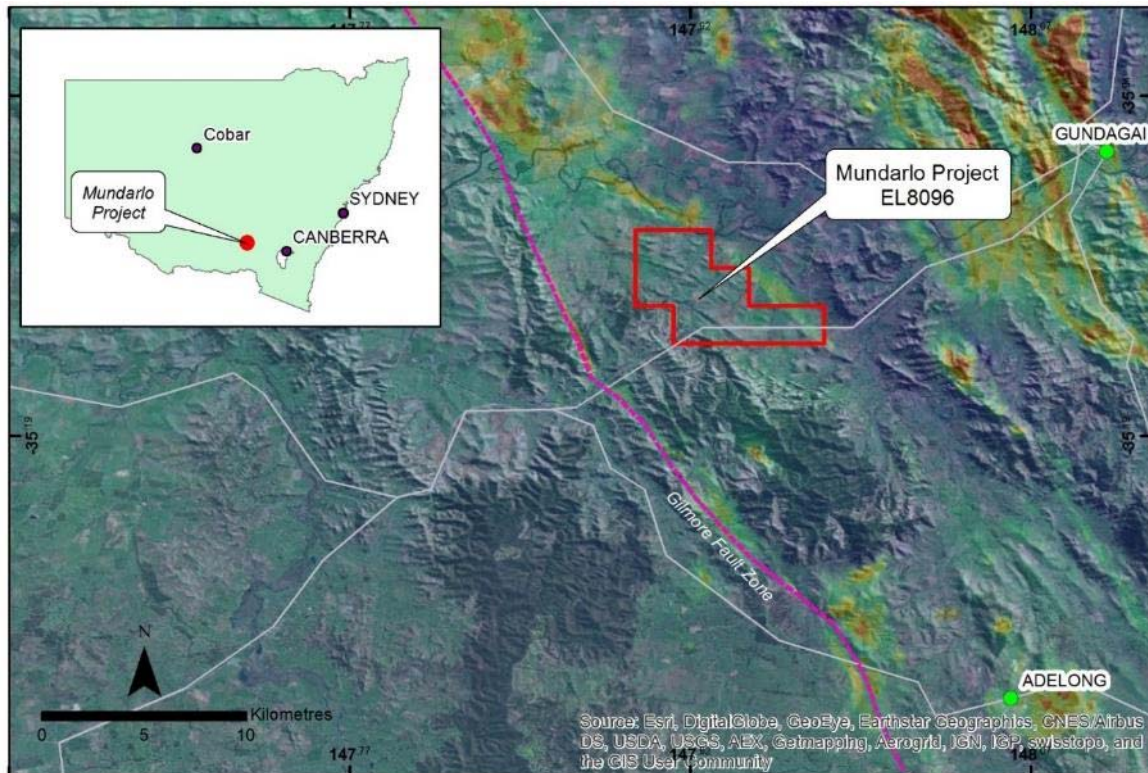


Figure 4: Location of Mundarlo Project adjacent to the regionally significant Gilmore Fault Zone, a controlling structure of several major deposits in NSW.

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### **Competent Persons Statement**

The information in this announcement that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information reviewed by Mr M Wilson who is a full time employee of Helix Resources Limited and a Member of The Australasian Institute of Mining and Metallurgy. Mr M Wilson has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 and 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr M Wilson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Details of the assumptions underlying any Resource estimations are contained in previous ASX releases or at [www.helix.net.au](http://www.helix.net.au)

For full details of exploration results refer to previous ASX announcements on Helix's website. Helix Resources is not aware of any new information or data that materially effects the information in this announcement

<sup>1</sup> For full details of exploration results refer to the ASX announcements dated 7 December 2017, 19 January 2018, 13 February 2018, 27 February 2018, 29 March 2018, 6 April 2018 and 23 May 2018. Helix Resources is not aware of any new information or data that materially effects the information in these announcements.

### **Forward-Looking Statements**

This ASX release may include forward-looking statements. These forward-looking statements are not historical facts but rather are based on Helix Resources Ltd.'s current expectations, estimates and assumptions about the industry in which Helix Resources Ltd operates, and beliefs and assumptions regarding Helix Resources Ltd.'s future performance. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates", "potential" and similar expressions are intended to identify forward-looking statements. Forward- looking statements are only predictions and are not guaranteed, and they are subject to known and unknown risks, uncertainties and assumptions, some of which are outside the control of Helix Resources Ltd. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast. Actual values, results or events may be materially different to those expressed or implied in this presentation. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward- looking statements in this announcement speak only at the date of issue of this announcement. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Helix Resources Ltd does not undertake any obligation to update or revise any information or any of the forward-looking statements in this announcement or any changes in events, conditions or circumstances on which any such forward looking statement is based.

No new information that is considered material is included in this document. All information relating to exploration results has been previously released to the market and is appropriately referenced in this document. JORC tables are not considered necessary to accompany this document.



## Appendix 1: Possible geological model for Mundarlo and settings for VMS deposits

In the classic VMS model, mineralisation is typically zoned with copper-rich sulphides located in massive and brecciated form towards the centre near the hotter feeder zone, grading out through zinc, lead sulphide and then iron-rich sulphides gradually becoming more bedded and laminated (including more silica) in the cooler zones on the margins. This peripheral iron-rich sulphide zone is the interpreted position for the the initial drilling that was completed at Mundarlo (Refer to Figure 5).

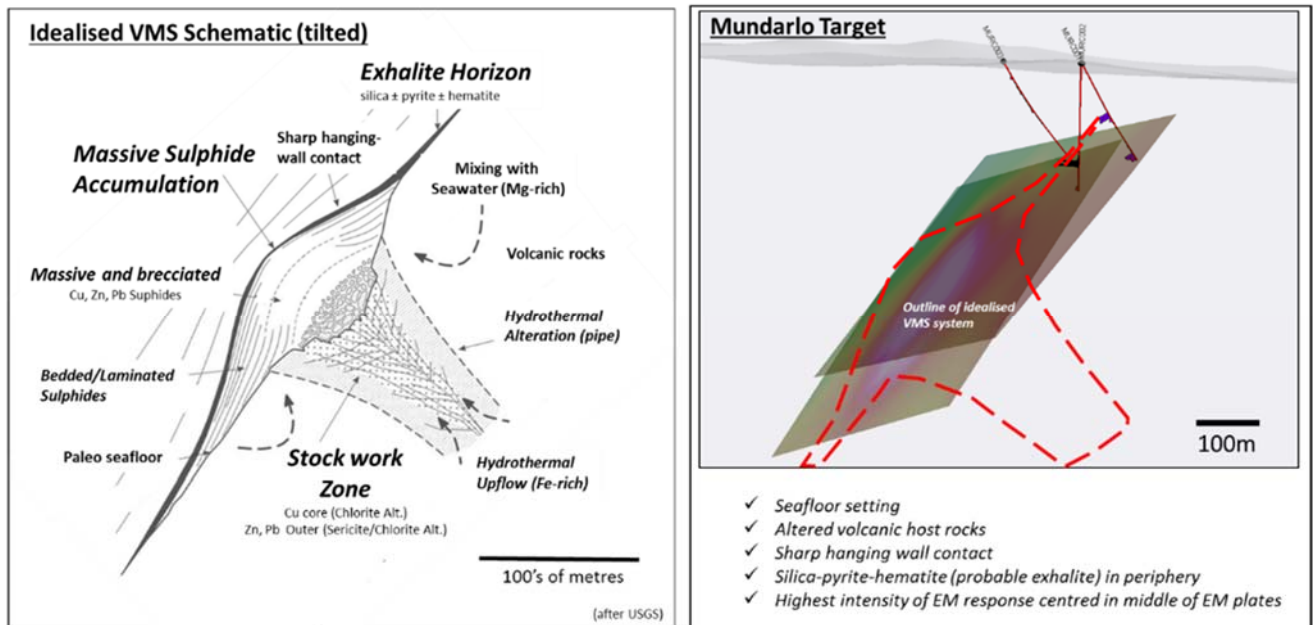


Figure 5: Idealised VMS conceptual model tilted to the same dip as the current Mundarlo exploration setting – showing how the VMS model may relate to the Mundarlo Project with several analogous VMS style features noted in results and observations so far.

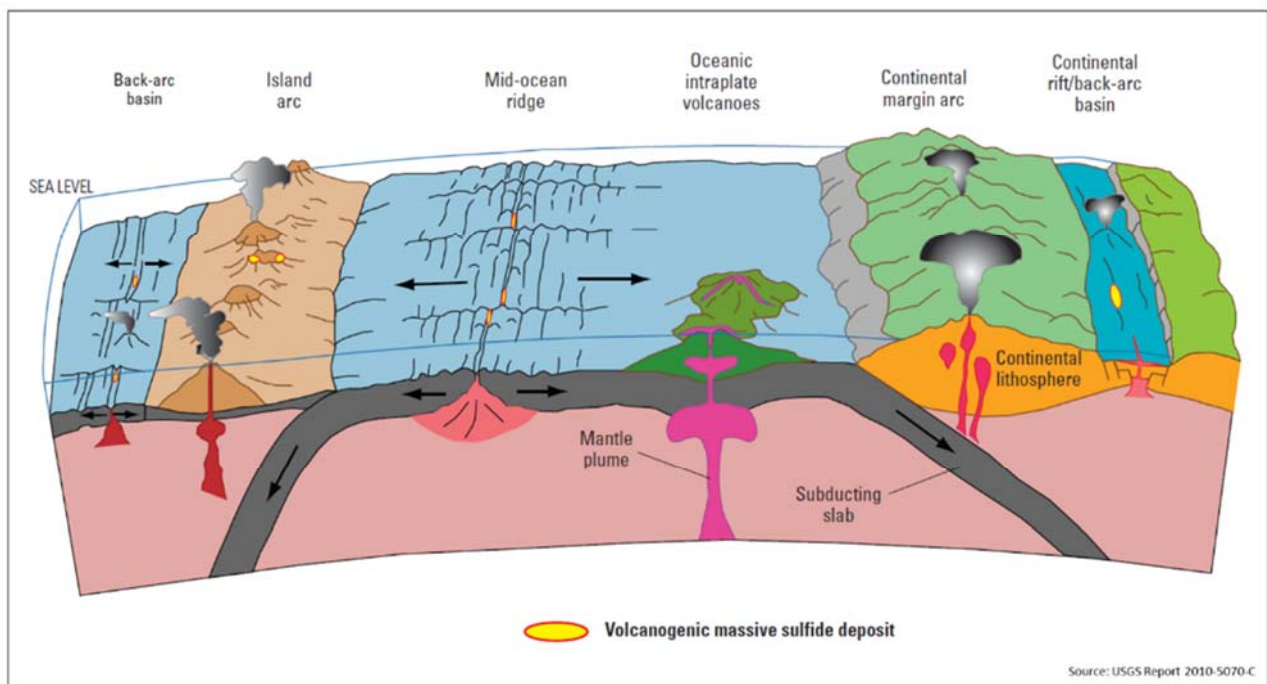


Figure 6: Geological setting where VMS style mineralisation form, typically in basin and rift environments (Source: USGS)