



Thursday, 31 January 2019

2018 December Quarter

Highlights

- **At the Joshua Porphyry Copper Project in Chile**, the Stage 1, five (5) hole diamond drilling program (2,965m) has been **completed on time and on budget (AUD\$1m) and all assay results have been received.**
- The five Manhattan holes have more than **doubled the known footprint of the copper sulphide-bearing system.**
- **A robust geological model for targeting higher copper grade mineralisation within the porphyry system has been developed.** The strongest copper mineralisation is associated with zones of potassic alteration that have variably retrograded to chlorite.
- The known copper-bearing system now **exceeds 1.5 square kilometres in area** and remains open in all directions, with **less than 25% of the overall system drill tested.**
- **Multiple phases of overprinting magmatic and hydrothermal events have been identified.**
- **First significant interval assaying above 0.5% Cu** was announced in November (ASX Announcement 29 November 2018), **demonstrating the grade potential of the Joshua system.**
- Hole 3, (JS18-003, EOH686m) intersected a strongly potassic altered (biotite-magnetite) hydrothermal breccia assaying 16m at 0.51% Cu from 546m or 10m at 0.60% Cu from 552m within a 30m interval assaying 0.36% Cu from 544m - **the highest interval of copper grades ever intersected at Joshua.**
- Hole 4, (JS18-004, EOH550m) intersected **a broad interval of disseminated copper mineralisation in a new part of the system** that returned 180m at 0.19% Cu from 222m, including 26m at 0.29% Cu from 222m.
- Hole 5 (JS18-005, EOH 600m) finished in increasingly stronger copper mineralisation in a **newly identified potassic-altered (biotite-magnetite) part of the system** that returned 14m at 0.37% Cu from 586m to 600m (End of Hole), within 32m at 0.18% Cu from 568m to 600m.

The Stage 1 diamond drilling program at the Joshua Porphyry Copper Project in Chile has been completed (2,965m) on time and on budget (AUD\$1m) and all assay results have been received.

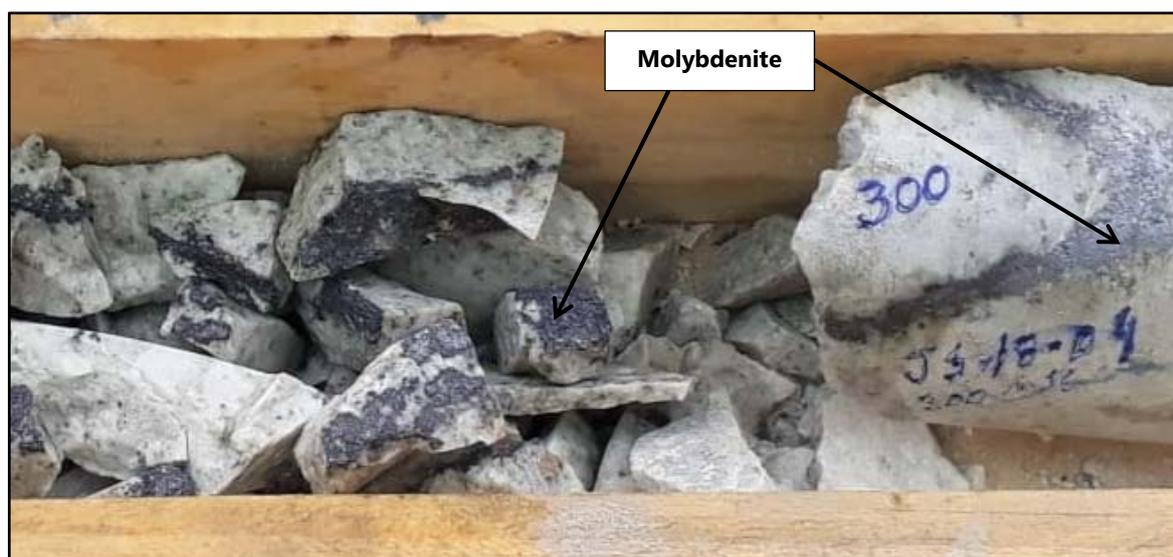
The Manhattan holes (5) have **more than doubled the size of the known footprint of the copper sulphide-bearing porphyry system to 1.5 square kilometres**, and for the first time, a molybdenum-mineralised porphyry intrusion and a new overprinting phase of brecciation with higher copper grades (+0.5% Cu) have been intersected (ASX Announcement 29 November 2018).

Hole 5 (JS18-005, EOH 600m), located 800m NE of hole 3 and 500m SW of hole 4 finished in increasingly stronger copper mineralisation in a **newly identified potassic-altered (biotite-magnetite) part of the porphyry system**. This disseminated copper sulphide mineralisation returned 14m at 0.37% Cu from 586m to 600m (End of Hole), within a 32m zone grading 0.18% Cu from 568m to 600m (End of Hole).

Hole 4 (DDH JS18-004, EOH 550m), located 1.3km NE of hole 3, intersected over 100m of disseminated- and vein-style molybdenite in strongly silicified dacite porphyry. Peak results include **4m at 174ppm Mo from 298m** (Figure 1), and also **180m at 0.19% Cu and 35ppm Mo from 222m, including 26m at 0.29% Cu and 25ppm Mo from 222m**.

Hole 3 (DDH JS18-003, EOH 686m), located 1.3km NE of hole 2 and 1.3km SW of hole 4, intersected hydrothermal breccia assaying **30m at 0.36% Cu from 554m, including 16m at 0.51% Cu from 546m, and with a higher grade interval of 10m at 0.60% Cu from 552m to 562m - the best copper grade ever intersected at Joshua so far**. The dimensions and orientation of this breccia body, which cuts across (or intrudes) an earlier hydrothermal breccia, remains undefined at present, as the next nearest drill hole (JS15-004, drilled in 2015) is located over 400m to the west.

Hole 2 (DDH JS18-002) finished at 704m and intersected disseminated and vein-style sulphide (including pyrite, chalcopyrite, molybdenite) in altered andesite and dacite porphyry hydrothermal breccia from 34m to 654m down-hole (refer to ASX Announcement 22 October 2018). The mineralised parts of this hydrothermal breccia assayed **262m at 0.15% Cu from 46m, including 70m at 0.21% Cu from 238m** (refer to Table 2 for other mineralised intervals).



**Figure 1 | Molybdenite veins in silicified dacite porphyry.
Hole JS18-004, 298m to 302m. 4m at 174ppm Mo.**

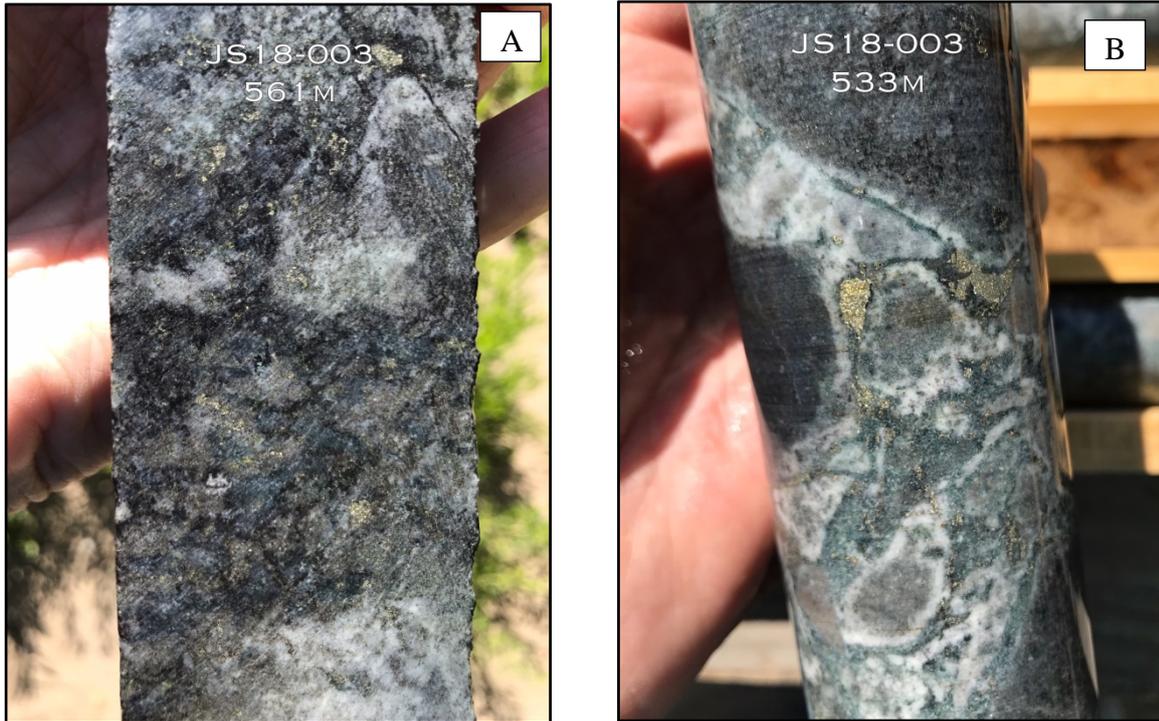


Figure 2 | Hole JS18-003. Disseminated pyrite-chalcopyrite mineralisation in altered dacite porphyry breccia. Interval 560m to 562m (2m) assayed 0.59% Cu (photo A) and 552m to 562m (10m) assayed 0.60% Cu.

Significance

Our understanding of the metal associations and metal zonation trends within the Joshua porphyry copper system have improved considerably throughout the Stage 1 diamond drilling program. This has led to the development of a robust geological model for targeting the higher copper grades (as seen in hole 3) within the broader zone of sulphide mineralised breccia (as seen in hole 2 and others).

Significantly, the system is multi-phase, with copper being upgraded in later hydrothermal events and with molybdenum grades (as an important potential by-product) increasing to the east and northeast.

While a number of broad intervals of sub-economic grade copper sulphide mineralisation (0.1 to 0.2% Cu) have been drilled in 2018, **less than 25% of the system has been tested** (as defined by the IP data).

The strongest disseminated copper sulphide mineralisation (holes 3 and 5) is associated with zones of moderate to low magnetic response, where the mineralised potassic-altered (biotite-magnetite) dacite and andesite porphyry have variably retrograded to lower temperature alteration assemblages (chlorite, albite). Induced Polarisation (IP) chargeabilities are also moderate and resistivities moderate to high.

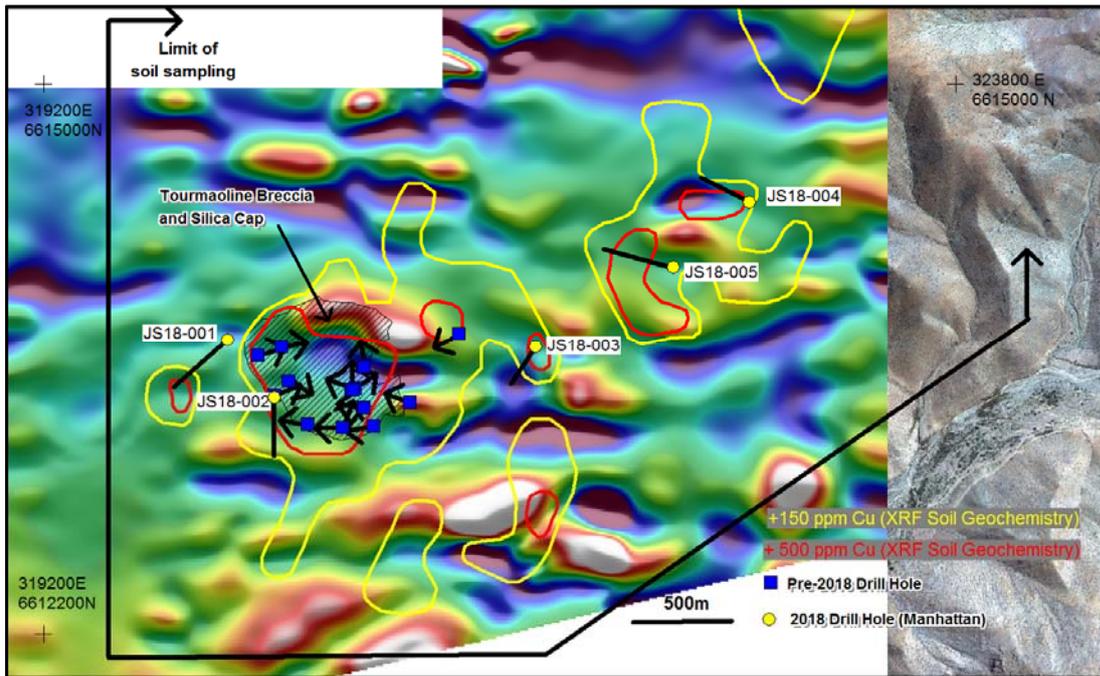


Figure 3 | All (2011, 2012, 2015, 2018) drill holes (21) on Total Magnetic Intensity Image.

WGS84, Zone 19 South

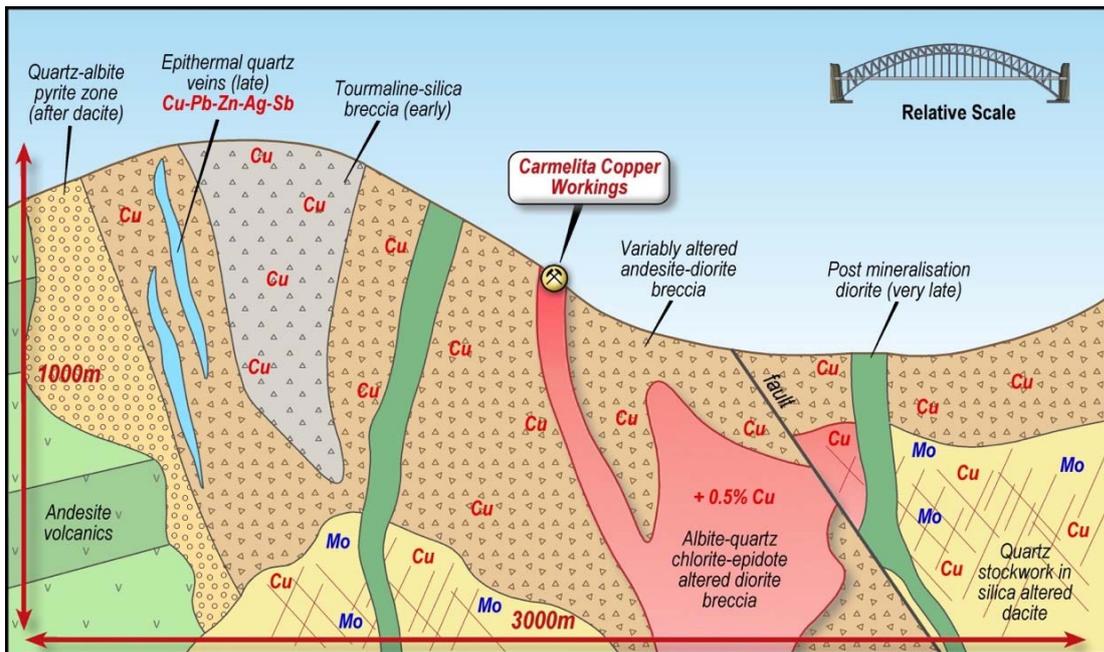


Figure 4 | Joshua Porphyry System - Interpreted schematic geological model in NE-SW section.

Table 1. 2018 Diamond Drill Hole (DDH) Summary (Final)

Hole ID (DDH)	East (WGS-84 19S)	North (WGS-84 19S)	RL (metres)	Depth (meters)	Angle (degrees)	Direction (magnetic)
JS18-001	320125	6613695	1571	425m EOH	-60	230
JS18-002	320360	6613400	1470	704m EOH	-70	180
JS18-003	321680	6613675	1154	686m EOH	-70	235
JS18-004	322760	6614400	1185	550m EOH	-70	315
JS18-005	322375	6614070	1095	600m EOH	-70	300

Coordinates: UTM WGS-84 19S EOH: End of Hole (final depth). Total: 2,965m

Table 2. Diamond Drill Hole (DDH) Assay Summary

Hole ID (DDH)	From (metres)	To (metres)	Interval (metres)	Results
JS18-002	46	308	262	0.15% Cu
JS18-002	incl. 238	308	70	0.21% Cu
JS18-002	340	364	24	0.14% Cu
JS18-002	590	598	8	0.12 % Cu
JS18-003	544	574	30	0.36% Cu
JS18-003	incl. 546	562	16	0.51% Cu
JS18-003	Incl. 552	562	10	0.60% Cu
JS18-004	222	402	180	0.19% Cu, 35ppm Mo
JS18-004	incl. 222	248	26	0.29% Cu, 25ppm Mo
JS18-005	568	600 (EOH)	32m	0.18% Cu
JS18-005	incl. 586	600 (EOH)	14m	0.37% Cu

About the Joshua Copper Project

The Joshua Project is located 350km north of Santiago in Chile's coastal porphyry copper belt. The 50 sq.km project area has all-year-round access and is favourably situated at low altitude, and close to infrastructure including ports, rail, roads and possible power and water solutions for any future mining scenarios.

The Joshua porphyry copper system is characterised by a regionally significant alteration anomaly (6.5km by 2km) centred on a zone of surface copper mineralization, brecciation and silica-tourmaline alteration. The broad alteration response at Joshua is similar to that of the Andacollo Cu-Au porphyry deposit located 45km to the northwest of the Joshua Project and operated by North American mid-cap company Teck.

The Joshua system was discovered by Helix Resources Limited in 2011 and prior to Manhattan's involvement (since August 2018), only 16 holes had been drilled (2011, 2012 by Helix and subsequently by IMG Contractors in 2015). The Helix drilling returned a number of significant copper intercepts, including 352m at 0.27% Cu, 240m at 0.22% Cu and 400m at 0.25% Cu. For full details of

exploration results, refer to the ASX announcements by Helix dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016. Additional information can also be found in Manhattan announcements dated 8 June 2018, 26 June 2018, 1 August 2018, 3 September 2018, 7 September 2018, 9 October 2018, 22 October 2018, 29 November 2018 and 17 December 2018. Helix and Manhattan are not aware of any new information or data that materially effects the information in these earlier announcements.



Figure 5 | Location of the Joshua Copper Project within the Coastal Porphyry Belt, Chile.

Competent Persons Statement

The information in this Report that relates to Exploration Results for the Joshua Project is based on information review by Mr Robert Perring who is a non-executive Director of, and technical adviser to Manhattan Corporation Limited and is a Member of the Australian Institute of Geoscientists. Mr R Perring has sufficient experience which is relevant to this style of mineralisation and type of deposit under consideration and to the overseeing activities 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, Minerals Resources and Ore Reserves". Mr R Perring consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For further information

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JORC Code Table

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Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> • <i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sounds, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i> • <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> • <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> • <i>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i> 	<p>Drilling</p> <ul style="list-style-type: none"> • Chile-based commercial drilling contractors conducted the RC and DDH drilling (DV Drilling in 2011, 2012, 2018; TerraServices SA 2015) – a total of 21 holes for 8,468m. Holes were orientated at various grid directions and were drilled at dips of between 60-90°. • Drill hole locations were determined using a hand-held GPS. No down-hole surveys were conducted. • RC drill cuttings were collected in a cyclone and split on-site. First-pass sampling was conducted using 2m composites, followed in a few cases with subsequently resampling on 1m intervals. • Diamond core was sampled on 2m intervals, taking half or quarter core as a first pass and then with follow-up sampling at various intervals (≈/ < 1m) to better understand particular lithological metal associations. • The samples were collected by either the Drilling Contractors (RC cuttings) and supervised at all times by Helix staff, or by Helix staff (diamond core). • The samples were under the direct control of Helix staff at all times and were transported to the laboratory by Helix staff. <p>Soils</p> <ul style="list-style-type: none"> • Soil samples (315) were collected in 2013 for Helix by experienced contract samplers under the direction of CSA Global staff. • Samples were collected at 200m intervals along lines 200m apart. • The samples were collected by digging and removing soil from shallow holes (~15cm deep). The soil from each sample pit was then sieved to minus 1mm and the recovered fraction analyzed by a licensed XFR Operator using a portable, hand-held Olympus Delta XRF analyzer supplied from Australia by CSA Global, specifically for the job.

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> The QA/QC data collected over the course of the program indicate no issues were encountered with the analytical method and assay results. The data was collected and stored digitally in the field. <p>Rock Samples (including Rock Chip Samples)</p> <ul style="list-style-type: none"> Rock samples were collected by Helix staff. Each sample is a composite of approximately 5 pieces of rock collected within a 3m radius of the recorded sample point to give a total sample weight of approximately 2kg to 3kg. The samples were secured in the company compound before being driven to the laboratory by Helix staff. At the laboratory, the samples were crushed and pulverised using industry standards. The laboratory's standard QA/QC procedures were carried out.
Drilling techniques	<ul style="list-style-type: none"> <i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</i> 	<ul style="list-style-type: none"> RC (2011) and DDH (2012, 2015, 2018) were the drilling methods chosen. The RC holes were drilled with a 150mm face-sampling hammer using industry practice drilling methods. Diamond HQ and NQ drill core was collected using double tube and all other industry practice methods.
Drill sample recovery	<ul style="list-style-type: none"> <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i> 	<ul style="list-style-type: none"> Sample weight and recoveries were observed during the drilling and any under-sized or over-sized drill samples were recorded. Samples were checked by the geologist for volume, moisture content, possible contamination and recoveries. Any issues were discussed with the drilling contractor.
Logging	<ul style="list-style-type: none"> <i>Whether core and chip samples have been geologically and geotechnically logged to a</i> 	<ul style="list-style-type: none"> A representative sample of the RC chips collected from each of the interval

Criteria	JORC Code explanation	Commentary
	<p><i>level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <ul style="list-style-type: none"> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i> 	<p>sampled were logged and then stored in chip trays for future reference.</p> <ul style="list-style-type: none"> The drill core is stored in core trays in Ovalle, and comprehensively logged and sampled. RC chips and drill core were logged for lithology, alteration, degree of oxidation, fabric, colour and occurrence and type of sulphide mineralisation. All reference RC chips and drill core have been stored in the Helix secure compound in Ovalle, Chile. Visual estimates of the proportion of sulphides: From systematic logging of NQ diamond drill core, the visual estimate of the total amount of sulphide (pyrite+chalcopyrite+molybdenite) in individual metre intervals ranges from 0.01% to 5%. The relative proportion of each sulphide species present in each metre interval is estimated to range from absent to 50% of the total amount of sulphide present. The amount of sulphide and the relative proportions of the sulphide species from metre to metre are highly variable and a detailed estimate of this variability is not possible within the limits of acceptable accuracy. The metal grades of the core shall be determined by assay. The sulphides occur as disseminations and randomly oriented, penetrative veins. The veins range from 0.1mm to 20cm thick. The sulphide is accompanied by one or more of the following gangue minerals in variable proportions: quartz, albite, chlorite, sericite, epidote and tourmaline. The visual estimates are estimates only and fine sulphide may be under-estimated, if present. Identification of the sulphide species and visual estimates of the proportions of those sulphide species present have been made by two geologists with more than 25 years experience each in porphyry copper mineralisation.
<p>Sub-sampling techniques and sample preparation</p>	<ul style="list-style-type: none"> <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> <i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation</i> 	<ul style="list-style-type: none"> The preparation of DDH and RC samples follow industry practice. This involves oven drying, pulverization of total sample using LM5 mills until 85% passes 75 micron. The laboratory's standard QA/QC procedures were carried out. The sample sizes are considered appropriate to the grain size of the material being sampled. Repeatability of assays was assessed and considered well with the tolerance

Criteria	JORC Code explanation	Commentary
	<p><i>technique.</i></p> <ul style="list-style-type: none"> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i> <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i> 	<p>limits for the style of mineralisation under investigation.</p>
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> <i>For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i> <i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i> 	<ul style="list-style-type: none"> All assays were conducted at accredited assay laboratories in Santiago, Chile (2011, 2012, 2018 by Andes Analytical Assay; 2015 by ALS Chemex). The analytical technique used for base metals was a mixed acid digest with an MS determination of metal concentrations. Gold was assayed by fire assay and aqua regia methods. Laboratory QA/QC samples involving the use of blanks, duplicates, standards (certified reference materials) and replicates as part of in-house procedures. Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> <i>The verification of significant intersections by either independent or alternative company personnel.</i> <i>The use of twinned holes.</i> <i>Documentation of primary data, data entry procedures, data verification, data storage</i> 	<ul style="list-style-type: none"> Results have been verified by Helix and Manhattan Company management. Geological data was collected using handwritten log sheets, which detailed geology (weathering, structure, alteration, mineralisation), sample quality, sample interval, sample number and QA/QC inserts (standards, duplicates, blanks) into the numbering sequence. This data, together with the assay data received from the laboratory, and subsequent survey data were entered into a

Criteria	JORC Code explanation	Commentary
	<p><i>(physical and electronic) protocols.</i></p> <ul style="list-style-type: none"> • <i>Discuss any adjustment to assay data.</i> 	secure Access databases and verified.
Location of data points	<ul style="list-style-type: none"> • <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> • The drill collar positions were determined using a GPS (± 5m). • Grid system is WGS-84 Zone 19S. • Surface RL data collected using GPS and Google Earth. • Variation in topography is approximately 400m within the drill zone. • All drill pads are also visible on Google Earth images.
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Drill holes were positioned to test specific parts of a porphyry copper system and designed to intersect rocks lying beneath either anomalous surface features such as rock alteration (silica, tourmaline, sericite, chlorite, magnetite, clay) and/or high metal concentrations (copper, molybdenum), or IP anomalies (zones of high resistivity and/or chargeability). • No drilling had been conducted by anyone on the Joshua Project prior to Helix commencing drilling operations in 2011. • Four phases of drilling have subsequently been conducted (#1: RC in 2011 #2: diamond drilling in 2012, #3: diamond drilling in 2015, #4 diamond drilling in 2018). • The drilling has been conducted in a manner consistent with the procedures set out in this JORC table. • Drilling phases 1 & 2 were conducted for Helix. Phase 3 was completed by IMG Contractors on behalf of EPG Partners as part of an Option Agreement to earn an interest in the Joshua Project (since expired). Phase 4 drilling (Sept to Dec 2018) was supervised by Helix for Manhattan Corporation Limited as part of an Option Agreement. • Helix staff supervised all drilling.
Orientation of data in relation to geological	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> 	<ul style="list-style-type: none"> • Surface sampling and the position of the drill holes and sampling techniques and intervals are considered appropriate for the early-phase exploration of a large porphyry system with bulk-tonnage copper sulphide potential. • The distribution of copper is known to be variably enriched and depleted within

Criteria	JORC Code explanation	Commentary
structure	<ul style="list-style-type: none"> <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<p>an overall porphyry copper system. The relatively small area drilled to date (700m by 600m) is not sufficient to suggest a positive or negative bias, and the large hydrothermal system at Joshua, as defined by the ASTER alteration mapping (6.5km by 2km), has yet to be fully investigated on the ground because of the large areal extent of the system.</p>
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> Chain of Custody is managed by Helix staff and its contractors. The samples were freighted directly to the laboratory with appropriate documentation listing sample numbers, sample batches, and required analytical methods and element determinations.
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> No additional QA/QC has been conducted for the drilling to date.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i> <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i> 	<ul style="list-style-type: none"> The Joshua Project is located on concessions Joshua 1-17. Helix owns the project 100%, with Manhattan having the right to earn an interest in the project of up to 80% by delivering a Bankable Feasibility Study. The mineral concessions are in good standing and payment of statutory fees is managed for Helix and Manhattan by a Land Management Consultant in Santiago, Chile. This is no statutory, minimum, annual expenditure commitment for exploration and mining titles in Chile. There are no known impediments to operating in this area. The drill area is situated at a relatively low altitude for Chile (<1800m) and can be accessed all year round.

Criteria	JORC Code explanation	Commentary
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<ul style="list-style-type: none"> No previous modern exploration has occurred at Joshua prior to Helix's involvement commencing in 2010. A number of small artisanal mines and working are present throughout the district.
<i>Geology</i>	<ul style="list-style-type: none"> <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> The project is considered to be prospective for copper (gold-molybdenum) porphyry-style mineralisation.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i> 	<ul style="list-style-type: none"> Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016. Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements. A portion of the results have been included in this announcement as indicative of previous drilling results for information purposes only. The zoned to be drilled under the auspices of the Manhattan Option Agreement will be 1) step-outs from earlier mineralised drill intercepts, and 2) the testing of new anomalous zones (IP anomalies, surface geochemical anomalies, alteration anomalies) within the much broader Joshua porphyry system.
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i> <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly</i> 	<ul style="list-style-type: none"> Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016. Helix and Manhattan are not aware of any new information or data that may materially effects the information in these announcements.

Criteria	JORC Code explanation	Commentary
	<i>stated.</i>	
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> • <i>These relationships are particularly important in the reporting of Exploration Results.</i> • <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> • <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i> 	<ul style="list-style-type: none"> • The drilling was initially designed to 'prove concept' that a large, porphyry copper system is present at Joshua. • The geology (lithological associations, metal associations, alteration zonation patterns) has been determined to be consistent with that of a large porphyry system. • The initial three phases of drilling (2011, 2012, 2015) were also designed to investigate the potential for copper mineralisation beneath the outcropping copper exposed in the silica cap and hydrothermal breccias on surface. • Porphyry copper systems are generally broad in all dimensions and mineralised drill intercepts are generally treated as true-widths given the size of the system and the pervasive nature of the mineralisation (100's of metres wide and thick).
Diagrams	<ul style="list-style-type: none"> • <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i> 	<ul style="list-style-type: none"> • Refer to Figure 2, 3 and 4 in MHC ASX announcement titled: Manhattan Signs Landmark Agreement on Joshua Copper Project dated 8 June 2018. • Refer to Manhattan announcements dated 7 September 2018, 9 October 2018, 22 October 2018, 29 November 2018 and 17 December 2018. • Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.
Balanced reporting	<ul style="list-style-type: none"> • <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i> 	<ul style="list-style-type: none"> • Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016. • Refer to Manhattan announcements dated 7 September 2018, 9 October 2018, 22 October 2018, 29 November 2018 and 17 December 2018.. • Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.
Other substantive exploration data	<ul style="list-style-type: none"> • <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and</i> 	<ul style="list-style-type: none"> • ASTER: PhotoSat Information Ltd conducted the remote-sensing mineral alteration study in March 2018. ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) is an imaging instrument flying on Terra, a satellite launched in December 1999 as part of NASA's Earth Observation System. Band widths in the Visible to Near-Infrared, Shortwave Infrared and Thermal Infrared

Criteria	JORC Code explanation	Commentary
	<p><i>method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></p>	<p>are measured. Diagnostic combinations (ratios) of these bands are then used to characterize and map the areal extend of Iron Oxide, Hydroxyl, Kaolinite-Alunite, Sericite and Silica alteration zones.</p> <ul style="list-style-type: none"> • Induced Polarisation (IP) Survey: A pole-dipole IP survey was conducted for Helix by Quantec Geoscience in 2011. The data was collected on 100m centres along E-W lines spaced 200m apart using Industry best practices for data collection and processing. • Aeromagnetics: A drone-borne aeromagnetic survey was conducted by GFDas Geofisica UAV over an area of approximately 25sq. km. in August 2018 for Helix as part of the Manhattan Option work program. The drone was fitted with a fluxgate magnetometer. Flight lines: N-S and 50m apart. Tie-lines: E-W and 1000m apart. The survey was designed to cover the entire ASTER alteration anomaly. Elevation difference across the survey area: 850m. Total flight lines: approx. 500km. Average altitude: 1,200m. System Name: GeoMagDrone™. The data has been imaged by Southern Geoscience Consultants in Perth, Western Australia.
<p>Further work</p>	<ul style="list-style-type: none"> • <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> • Manhattan is compiling, assessing and reviewing all data from their 2018 diamond drilling program and will decide on whether to proceed to the second stage of drilling (Stage 2, 5000m diamond drilling within 18 months) in early 2019. • All drill core assay results for the Manhattan 2018 drilling program (JS18-001 to JS18-005) have been received. • Refer to Manhattan announcements dated 8 June 2018, 26 June 2018, 1 August 2018, 3 September 2018, 7 September 2018, 9 October 2018, 22 October 2018, 29 November 2018 and 17 December 2018 for additional information. Manhattan is not aware of any new information that materially changes the results and information reported in these announcements.