



## **Drilling Update: Disseminated- and Vein-Style Sulphide Intersected**

### ***Joshua Copper Project, Chile***

#### **Highlights**

- **Planned 3,000m diamond drilling program is 28% complete, with the second hole (JS18-002) in progress**
- **Hole 2 (JS18-002) is at 434m (planned to 700m) and has been intersecting disseminated- and vein-style sulphide (pyrite, chalcopyrite, molybdenite) in altered andesite and diorite porphyry from 34m down-hole**
- **High-resolution aeromagnetic survey data has also been received from the drone-based survey. This data, along with ground-based geological and satellite-based ASTER alteration mapping have been used to define 3 distinct porphyry systems at Joshua (PS-1, PS-2, PS-3)**
- **Only Porphyry System 1 (PS-1) has been drilled historically (16 holes: 2011, 2012, 2015). Manhattan's first three holes (hole 1 completed, hole 2 in progress, hole 3 planned) are testing new zones within PS-1**
- **Manhattan will also drill the first holes in Porphyry System 2 (PS-2) - holes 4 and 5 in the current 3000m program.**

#### **Diamond Drilling**

The Directors of Manhattan ("**Manhattan**" or the "**Company**") are pleased to announce that the 3000m diamond drilling program at the Joshua Porphyry Copper Project in Chile is 28% complete.

**Hole 2 (DDHJS18-002)**, which is testing an Induced Polarisation (IP) anomaly (high chargeability/high resistivity), is currently at 434m (planned to 700m). Disseminated- and vein-style sulphide (pyrite, chalcopyrite, molybdenite) in both altered andesite and diorite porphyry have been logged from 34m down-hole (Figures 1 and 2). This sulphide mineralisation is associated with chlorite-sericite-albite+/-tourmaline alteration that overprints an earlier biotite-magnetite (potassic) alteration event. It is anticipated that the geology will continue to change as the target depth is approached.



ASX Announcement  
Tuesday, 9 October 2018

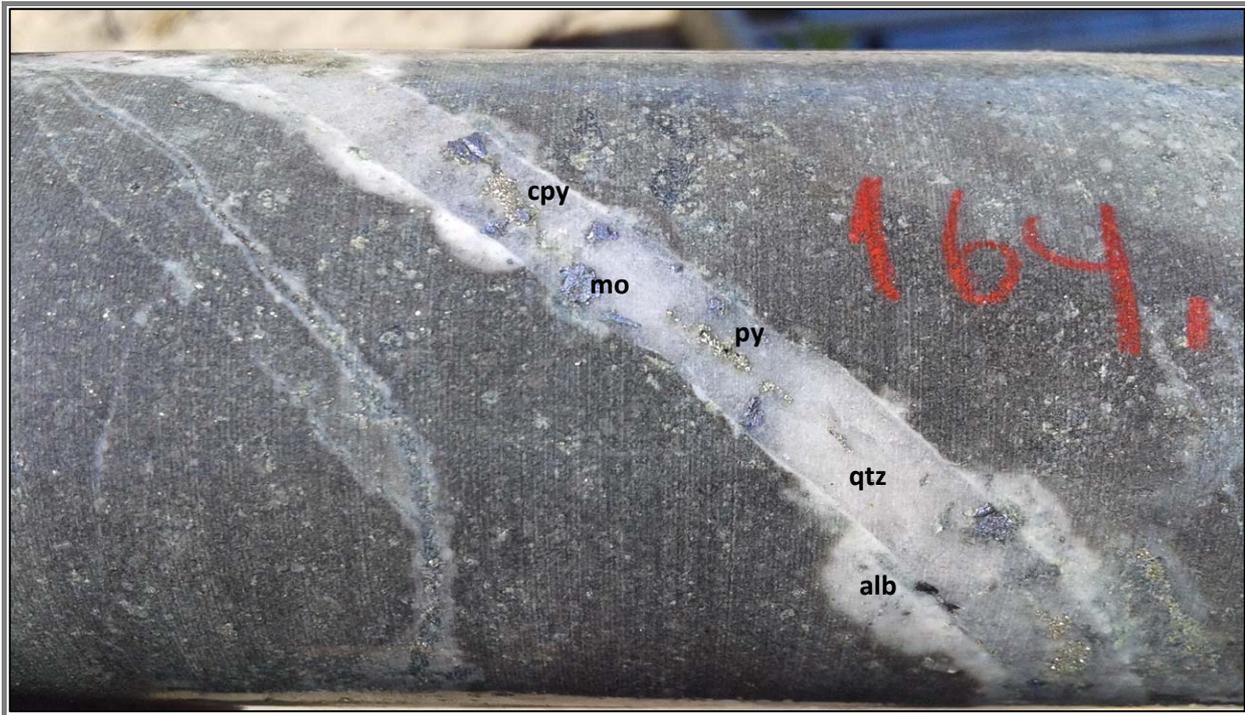


Figure 1 | Quartz-pyrite-chalcopyrite-molybdenite vein (1cm wide) in altered andesite porphyry (hole JS18-002, 164m). Drill core: 5cm wide, qtz = quartz, alb = albite, mo = molybdenite (grey mineral), py = pyrite, cpy = chalcopyrite. Hole in progress to a planned depth of approximately 700m. Refer to Note 1 below.

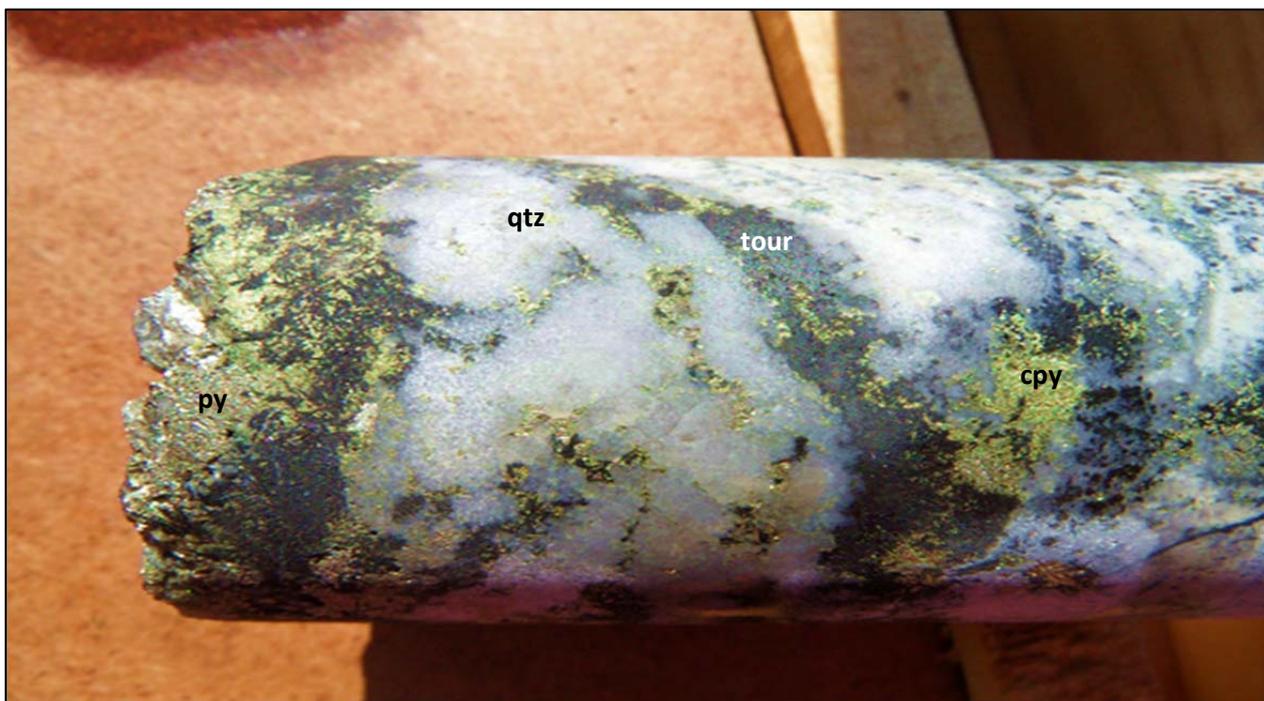


Figure 2 | Quartz-tourmaline-pyrite-chalcopyrite vein in strongly altered dacite porphyry (hole JS18-002, 278m). Drill core: 5cm wide, qtz = quartz, py = pyrite, tour = tourmaline, cpy = chalcopyrite. Hole in progress to a planned depth of approximately 700m. Refer to Note 1 below.



ASX Announcement  
Tuesday, 9 October 2018

**Note 1.** In hole 2 (JS18-002) from 34m to 434m (depth at time of reporting), and from systematic logging of the 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, 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.

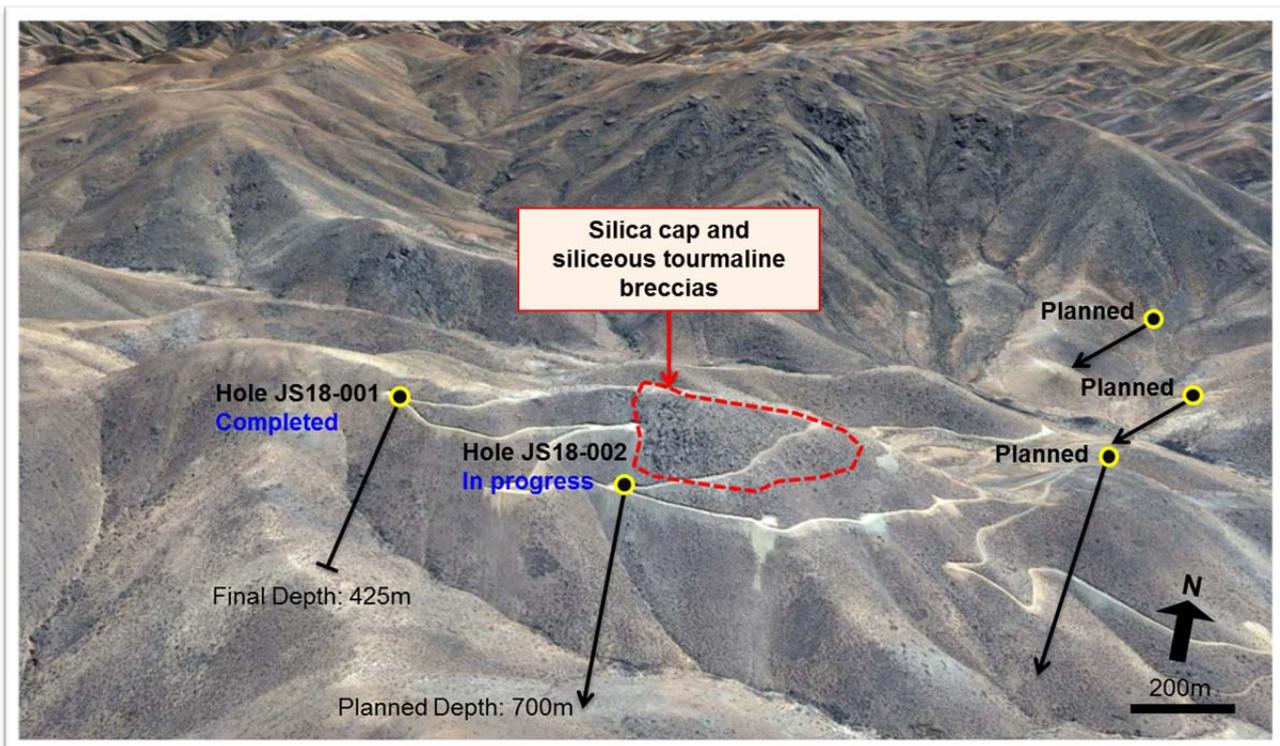
**Hole 1 (DDHJS18-001)** was terminated early at 425m after intersecting a number of post-mineralisation diorite dykes in strongly altered (quartz-sericite-pyrite) andesite porphyry. The core will be despatched to the lab for assay this week.

**Diamond Drill Hole Summary - 2018 (DDHJS18 series, completed or in progress)**

Hole ID	East (WGS-84 19S)	North (WGS-84 19S)	RL (metres)	Depth (meters)	Angle (degrees)	Direction (magnetic)
DDHJS18-001	320125	6613695	1571	425m EOH	-60	230
DDHJS18-002	320360	6613400	1470	434m (in progress)	-70	180

Coordinates: UTM WGS-84 19S

Initial mechanical issues with the drill contractor's equipment have now been rectified and daily production continues to improve.

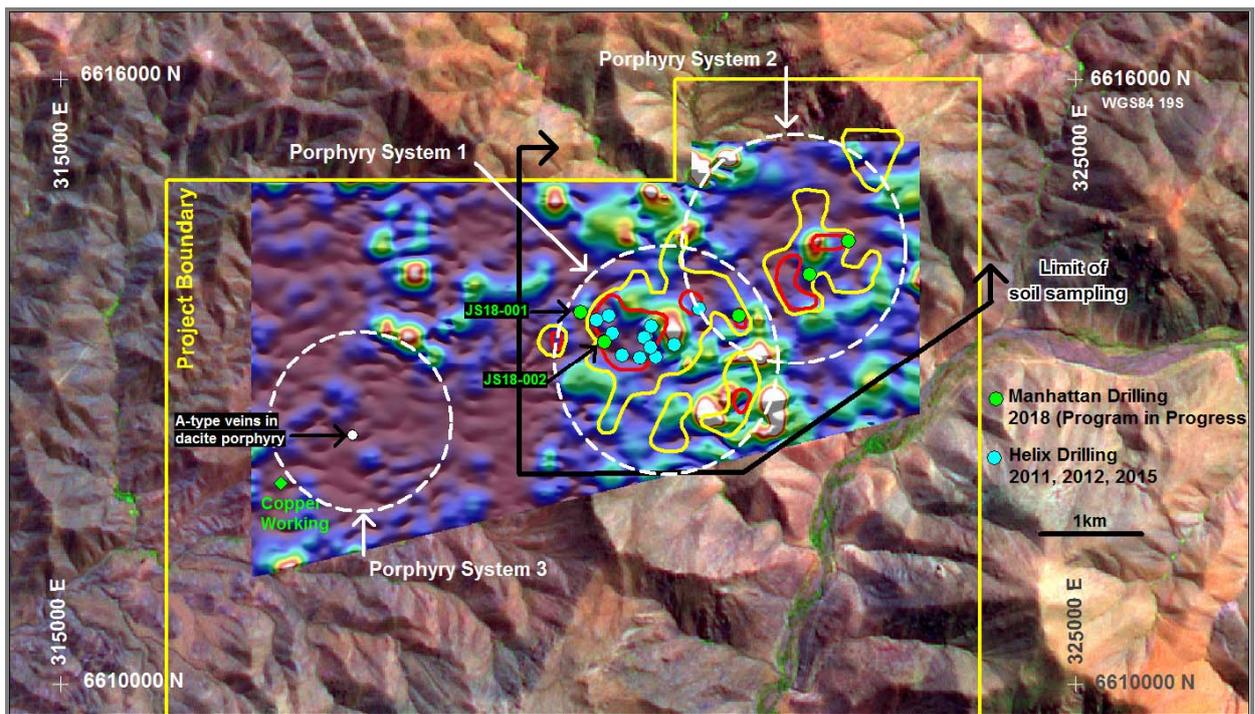


**Figure 3 | Relative positions of Manhattan drill holes (completed, in progress and planned) at Joshua shown on north-looking Google image.**

## Aeromagnetic Survey

The high-resolution aeromagnetic survey data collected using drone technology has been received and processed (refer Table 1 for survey specifications). This data, along with ground-based geological and satellite-based ASTER alteration mapping have been used to define 3 porphyry systems associated with copper mineralisation at Joshua (Figure 4).

- **Porphyry System 1 (PS-1)** has been drilled in part by Helix (2011, 2012 and 2015), and Manhattan's first three holes are testing new zones within PS-1. Helix (2011, 2012, 2015) has previously reported a number of significant copper intercepts from PS-1, including 352m at 0.27% Cu, 240m at 0.22% Cu and 400m at 0.25% Cu
- **Porphyry System 2 (PS-2)** will be drilled by Manhattan in November 2018 for the first time. Helix soil geochemistry (robust copper anomaly peaking at 2569ppm Cu) and IP data, and the recently acquired aeromagnetic data, have all been used to plan holes 4 and 5 in the current Manhattan program
- **Porphyry System 3 (PS-3)** is a newly defined target located in the western part of the project area. An intensely veined porphyritic dacite (quartz-albite A-type veins, Figure 5) is spatially associated with a copper working located immediately to the SW of the porphyry (Figure 4). Strong phyllic alteration (silica-sericite-pyrite), potassic alteration (biotite-magnetite) and zones brecciation have also identified.



**Figure 4 | Imaged aeromagnetic data (analytic signal) showing Helix copper soil anomalies (yellow: +150ppm Cu, red: +500ppm Cu, refer Table 1 for survey details), location of historical drill holes (pale blue dots) and Manhattan drill holes (green dots) and the location of the interpreted three porphyry systems within the Joshua Project Area.**





**Figure 5 | Porphyry System 3: A-type quartz-albite veins in dacite porphyry located within the vicinity of recently located copper working (refer to Figure 4 above for locations).**

## **Planned Work**

Manhattan's current focus is to complete the 3000m of diamond drilling planned within PS-1 and PS-2, and to have the core sampled and submitted to the laboratory in Santiago for assay within 7 days of completing each hole. Final assay results for all holes are anticipated to be received before the end of 2018. Results will be received sequentially as individual holes are submitted to the laboratory for assay.

## **About the Joshua Copper Project**

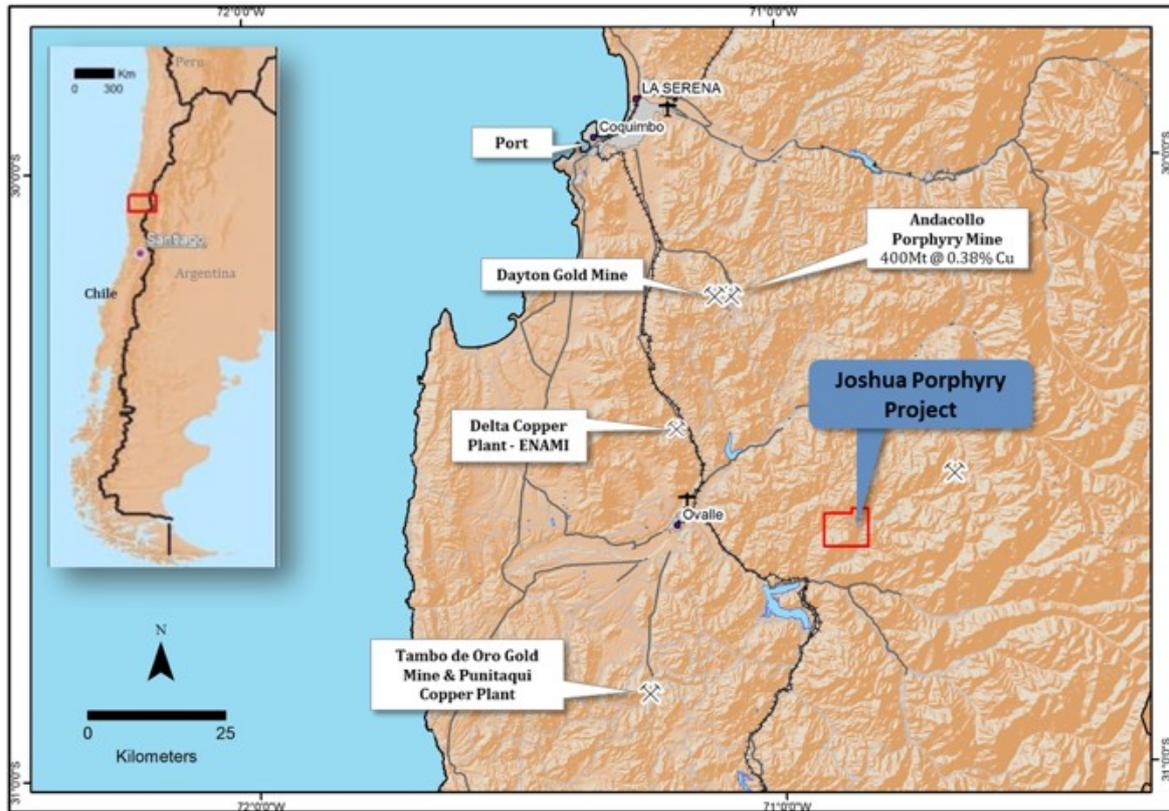
The Joshua Project is located 350km north of Santiago in Chile's coastal porphyry copper belt. The 50 sq.km project area has all-year-round access and is favourably situated at low altitude, and close to infrastructure including ports, rail, roads and possible power and water solutions for any future 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 since then only 16 holes have been drilled (2011, 2012 by Helix and subsequently by IMG Contractors in 2015). This 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 and 7 September 2018. Helix and Manhattan are not aware of any new information or data that materially effects the information in these earlier announcements.



On 1 August 2018, Manhattan Corporation Limited (“Manhattan” or the “Company”) announced that it had completed the share placement announced 8 June 2018 to raise \$3 million (“Placement”), and that the Placement met the final pre-condition of an option agreement with Helix Resources Limited for Manhattan to earn up to an 80% interest in the Joshua Porphyry Copper Project.



**Figure 6 | Joshua Copper Project, Region IV 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**

Marcello Cardaci (Non-Executive Director)

Telephone +61 8 9322 6677 or

Email: [info@manhattcorp.com.au](mailto:info@manhattcorp.com.au)



## JORC Code – Table 1

### Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <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></li> </ul>	<p><b>Drilling</b></p> <ul style="list-style-type: none"> <li>• Chile-based commercial drilling contractors conducted the RC and DDH drilling (DV Drilling in 2011, 2012; TerraServices SA 2015) – a total of 16 holes for 5,504.2m Holes were orientated at various grid directions and were drilled at dips of between 60-90°.</li> <li>• DV Drilling is conducting the DDH drilling - September to December 2018.</li> <li>• Drill hole locations were determined using a hand-held GPS. No down-hole surveys were conducted.</li> <li>• 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.</li> <li>• 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 (=/<math>&lt;1</math>m) to better understand particular lithological metal associations.</li> <li>• 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).</li> <li>• The samples were under the direct control of Helix staff at all times and were transported to the laboratory by Helix staff.</li> </ul> <p><b>Soils</b></p> <ul style="list-style-type: none"> <li>• Soil samples (315) were collected in 2013 for Helix by experienced contract samplers under the direction of CSA Global staff.</li> <li>• Samples were collected at 200m intervals along lines 200m apart.</li> <li>• 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-hand Olympus Delta XRF analyzer supplied from Australia by</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>CSA Global, specifically for the job.</p> <ul style="list-style-type: none"> <li>The QA/QC data collected over the course of the program indicate no issues were encountered with the analytical method and assay results.</li> <li>The data was collected and stored digitally in the field.</li> </ul> <p><b>Rock Samples (including Rock Chip Samples)</b></p> <ul style="list-style-type: none"> <li>Rock samples were collected by Helix staff.</li> <li>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.</li> <li>The samples were secured in the company compound before being driven to the laboratory by Helix staff.</li> <li>At the laboratory, the samples were crushed and pulverised using industry standards.</li> <li>The laboratory's standard QA/QC procedures were carried out.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>RC (2011) and DDH (2012, 2015, 2018 – in progress) were the drilling methods chosen.</li> <li>The RC holes were drilled with a 150mm face-sampling hammer using industry practice drilling methods.</li> <li>Diamond HQ and NQ drill core was collected using double tube and all other industry practice methods.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Sample weight and recoveries were observed during the drilling and any under-sized or over-sized drill samples were recorded.</li> <li>Samples were checked by the geologist for volume, moisture content, possible contamination and recoveries. Any issues were discussed with the drilling contractor.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Logging</b>	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A representative sample of the RC chips collected from each of the interval sampled were logged and then stored in chip trays for future reference.</li> <li>• The drill core was stored in core trays and comprehensively logged and sampled.</li> <li>• RC chips and drill core were logged for lithology, alteration, degree of oxidation, fabric, colour and occurrence and type of sulphide mineralisation.</li> <li>• All reference RC chips and drill core have been stored in the Helix secure compound in Ovalle, Chile.</li> <li>• 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+chalcopryrite+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.</li> <li>•</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• The laboratory's standard QA/QC procedures were carried out.</li> <li>• The sample sizes are considered appropriate to the grain size of the material</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <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></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• being sampled.</li> <li>• Repeatability of assays was assessed and considered well with the tolerance limits for the style of mineralisation under investigation.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• All assays were conducted at accredited assay laboratories in Santiago, Chile (2011, 2012, 2018 – planned): Andes Analytical Assay AAA; 2015 ALS Chemex).</li> <li>• 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.</li> <li>• Laboratory QA/QC samples involving the use of blanks, duplicates, standards (certified reference materials) and replicates as part of in-house procedures.</li> <li>• Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Results have been verified by Helix Company management.</li> <li>• 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,</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	blanks) into the numbering sequence. This data, together with the assay data received from the laboratory, and subsequent survey data were entered into a secure Access databases and verified.
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>The drill collar positions were determined using a GPS (<math>\pm 5\text{m}</math>).</li> <li>Grid system is WGS-84 Zone 19S.</li> <li>Surface RL data collected using GPS.</li> <li>Variation in topography is approximately 400m within the drill zone.</li> <li>All drill pads are also visible on Google Earth images.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>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).</li> <li>No drilling had been conducted by anyone on the Joshua Project prior to Helix commencing drilling operations in 2011.</li> <li>Three phases of drilling have subsequently been conducted (#1: RC in 2011 #2: diamond drilling in 2012, #3: diamond drilling in 2015).</li> <li>The drilling planned for Sept to Dec 2018 (in progress) and will be conducted in a manner consistent with the procedures set out in this JORC table.</li> <li>Drilling phases 1 &amp; 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). Helix supervised this drilling.</li> <li>Phase 4 drilling (Sept to Dec 2018) is being supervised by Helix for Manhattan Corporation Limited as part of an Option Agreement.</li> </ul>
<b>Orientation of data in relation to geological</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>The distribution of copper is known to be variably enriched and depleted within</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>structure</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<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>
<b>Sample security</b>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No additional QA/QC has been conducted for the drilling to date.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>This is no statutory, minimum, annual expenditure commitment for exploration and mining titles in Chile.</li> <li>There are no known impediments to operating in this area.</li> <li>The drill area is situated at a relatively low altitude for Chile (&lt;1800m) and can be accessed all year round.</li> </ul>

<b>Criteria</b>	<b>JORC Code explanation</b>	<b>Commentary</b>
<b><i>Exploration done by other parties</i></b>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>No previous modern exploration has occurred at Joshua prior to Helix's involvement commencing in 2010.</li> <li>A number of small artisanal mines and working are present throughout the district.</li> </ul>
<b><i>Geology</i></b>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The project is considered to be prospective for copper (gold-molybdenum) porphyry-style mineralisation.</li> </ul>
<b><i>Drill hole Information</i></b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016.</li> <li>Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.</li> <li>A portion of the results have been included in this announcement as indicative of previous drilling results for information purposes only.</li> <li>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.</li> </ul>
<b><i>Data aggregation methods</i></b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016.</li> <li>Helix and Manhattan are not aware of any new information or data that may materially effects the information in these announcements.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<p><i>stated.</i></p> <ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>The drilling was initially designed to 'prove concept' that a large, porphyry copper system is present at Joshua.</li> <li>The geology (lithological associations, metal associations, alteration zonation patterns) has been determined to be consistent with that of a large porphyry system.</li> <li>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.</li> <li>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).</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Figure 2, 3 and 4 in MHC ASX announcement titled: Manhattan Signs Landmark Agreement on Joshua Copper Project dated 8 June 2018.</li> <li>Manhattan is not aware of any new information or data that materially effects the information in these announcements.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Helix's previous announcements dated 10 August 2011, 28 March 2012, 8 June 2012, 17 December 2015 and 6 February 2016.</li> <li>Helix and Manhattan are not aware of any new information or data that materially effects the information in these announcements.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><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 method of treatment; metallurgical test results; bulk density, groundwater,</i></li> </ul>	<ul style="list-style-type: none"> <li><b>ASTER:</b> 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 are measured. Diagnostic combinations (ratios) of these bands are then used to characterize and map the areal extend of Iron Oxide, Hydroxyl, Kaolinite-</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></p>	<p>Alunite, Sericite and Silica alteration zones.</p> <ul style="list-style-type: none"> <li>• <b>Induced Polarisation (IP) Survey:</b> 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.</li> <li>• <b>Aeromagnetics:</b> 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.</li> </ul>
<p><b>Further work</b></p>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Manhattan is funding a minimum A\$1m program to deliver 3,000m of DDH drilling at Joshua targeting new areas surrounding the previous work conducted by Helix.</li> <li>• The drilling program commenced in September 2018 and will take approximately 3 months to complete.</li> <li>• Drill core assay results will be received progressively during the drilling program and it is anticipated that all results will be received before the end of 2018.</li> <li>• Refer to Manhattan announcements dated 8 June 2018, 26 June 2018, 1 August 2018, 3 September 2018 and 7 September 2018 for additional information. Manhattan is not aware of any new information that materially changes the results and information reported in these announcements.</li> </ul>