21 June 2016

ASX: AOH, FSE: A2O

TURKEY CREEK - FIRST RESERVE ESTIMATE

- **Turkey Creek Ore Reserve of 11.3Mt at 0.46% copper for 52,100t of contained copper**
- **The Turkey Creek deposit is located immediately adjacent to the proposed processing facility**
- **Cloncurry Copper Project Ore Reserve of 86Mt at 0.50% copper and 0.07g/t gold for 427,000t contained copper and 205,000oz contained gold**
- **Reserve increase extends mine life to 13 years**
- **Reserve increase will improve project returns**
- **Turkey Creek will be included in project optimisation on commencement of the SRIG JV**
- **Capital and operating costs expected to have improved since 2012 DFS and 2014 update**

Altona Mining Limited ("Altona" or the "Company") is pleased to announce the first Ore Reserve estimate for the Turkey Creek deposit at the Company's Cloncurry Copper Project near Mt Isa in Queensland.

The Cloncurry Project is the subject of an A$330 million proposed joint venture ("JV") with Sichuan Railway Investment Group ("SRIG") (refer to ASX release of 2 June 2016 for further information on the SRIG JV).

The planned Little Eva mining project sits within the Cloncurry Project. Turkey Creek is located 1.5 kilometres east of the planned Little Eva open pit mine and within 650 metres of a planned 7Mtpa processing plant within granted Mining Leases (Figures 1 and 3).

The Reserve estimate is:

11.3 million tonnes at 0.46% copper for 52,100 tonnes of contained copper.

This Ore Reserve Estimate has been made based upon the integration into the mine plan for the Little Eva mine development outlined in the Definitive Feasibility Study Update disclosed to ASX on 13 March 2014. The Turkey Creek pit will be 1.15 kilometre long and 175 metres deep (Figure 2) delivering sulphide ore to the planned nearby Little Eva processing plant. Mine schedules currently envisage the mining of Turkey Creek late in the project life.

The reserve is based on resources reported at a 0.3% lower cut-off grade and is classified as a probable resource (refer to ASX release of 18 March 2015). A detailed summary of the supporting data and methodology is given in Table 3 (Table 1 of the JORC Code 2012).

The reserve is comprised entirely of sulphide ore from 25 metres to 160 metres below surface. An oxide cap ranging from surface to depths of 25 to 45 metres has not been included in the estimate as it failed to give acceptable recoveries in flotation testwork (sulphidisation).

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The global ore reserve for the Cloncurry Project is now:

86 million tonnes at 0.50% copper, 0.07g/t gold for 427,000 tonnes of contained copper and 205,000 ounces contained gold.

A full break down of the Reserve estimate is provided in Table 1. The Ore Reserve estimate is included within the Turkey Creek resource estimate (Tables 2 and 3).

A re-design of the infrastructure layout for the Project was completed to accommodate an open pit mine at Turkey Creek (Figure 3). An amendment to the Environmental Authority has also been sought to incorporate the changes to the operational plan.

The current mine life is 11 years and given the plant design capacity of 7Mtpa Turkey Creek will add approximately two years to mine life. The additional mine life and deferral of treatment of low grade stockpiles will improve Project returns from those reported in the Definitive Feasibility Study Update.

The financial close of the proposed Joint Venture transaction with SRIG is targeted for October 31, 2016. It is intended an optimisation of the Project will be undertaken upon the commencement of the JV to incorporate Turkey Creek into the mine plan and re-visit the cost and other inputs into the 2012 DFS and its 2014 update. It is expected that capital and operating costs will have materially improved.

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About Altona

Altona Mining Limited is an ASX listed company focussed on the Cloncurry Project in Queensland, Australia. The Project has Mineral Resources containing some 1.65 million tonnes of copper and 0.41 million ounces of gold. The first development envisaged is the 7 million tonnes per annum Little Eva open pit copper-gold mine and concentrator. Altona has completed a Framework Agreement with Sichuan Railway Investment Group to fully fund and develop Little Eva. Little Eva is permitted with proposed annual production[(1)] of 38,800 tonnes of copper and 17,200 ounces of gold for a minimum of 11 years. A Definitive Feasibility Study was published in March 2014.

[1]*Refer to the ASX release 'Cost Review Delivers Major Upgrade to Little Eva' dated 13 March 2014 which outlines information in relation to this production target and forecast financial information derived from this production target. The release is available to be viewed at www.altonamining.com or www.asx.com.au. The Company confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target referred to in the above-mentioned release continue to apply and have not materially changed.*

Competent Persons Statement

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Roland Bartsch, B Sc (Hons) MAusIMM, MAIG and Dr Alistair Cowden, BSc (Hons), PhD, MAusIMM, MAIG. Mr Bartsch and Dr Cowden are full time employees of the Company and have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Bartsch and Dr Cowden consent to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Copper equivalence

When used, copper equivalent refers to copper in concentrate produced, or planned to be produced. It does not refer to metal contained within insitu resources, reserves or drill results. The copper equivalent grade is calculated by factoring the copper grade by revenue from all metals (NSR) being copper, gold and silver.

Table 1: Turkey Creek Deposit Ore Reserve

The Turkey Creek deposit Ore Reserve is reported according to the JORC Code as follows:

Class	Tonnes (million)	Copper (%)	Gold (g/t)	Contained Copper (kt)	Contained Gold (koz)
Ore Reserve					
Proven	-	-	-	-	-
Probable	11.3	0.46	0.00	52.1	0
Ore Reserve Total	**11.3**	**0.46**	**0.00**	**52.1**	**0**
Mining Inventory	3.6	0.47	0.00	17.0	0

Notes accompanying the Ore Reserve Statement:

1. Reserves are based upon a Long Term Copper Price of US$3.00 per pound and AUD:USD of 0.80.
2. The cut-off grade is 0.16% copper.
3. Resources have been reported as Inclusive of Reserves.
4. All data has been rounded to two significant figures. Discrepancies in summations may occur due to rounding.
5. The Turkey Creek Mineral Resources are classified as Indicated and Inferred. Pit designs and pit optimisations are based on both Indicated and Inferred Mineral Resource classes.
6. The overall pit comprises 3 stages of mining. Stage 1 and 2 pits are based on a pit shell optimised on Indicated Mineral Resources only. Indicated Mineral Resources within the first two stages have all been converted to Probable Ore Reserves. All Inferred Mineral Resources and Indicated Mineral Resources within third stage are reported as Mining Inventory.

Table 2: Little Eva Project Ore Reserve

The Little Eva Project Ore Reserve is reported according to the JORC Code as follows:

Reserve Classification	Tonnes	Copper (%)	Gold (g/t)	Copper (tonnes)	Gold (ounces)
Little Eva					
Proved	31,200,000	0.64	0.08	198,200	84,700
Probable	22,200,000	0.50	0.09	109,900	62,600
Turkey Creek					
Probable	11,300,000	0.46	0	52,100	0
Ivy Ann					
Probable	3,500,000	0.60	0.08	21,000	9,000
Lady Clayre					
Probable	1,000,000	0.58	0.27	5,800	8,700
Bedford					
Probable	1,430,000	0.87	0.20	12,400	9,200
Total Proved and Probable Reserves (excl. stockpiles)	**70,630,000**	**0.57**	**0.08**	**399,400**	**174,200**
Little Eva Low Grade Stockpile					
Probable	15,400,000	0.18	0.06	28,100	30,900

Contained Metal Including Stockpile	Copper (tonnes)	Gold (ounces)
	427,000	205,000

For initial disclosure of Ore Reserves other than Turkey Creek please see Altona ASX release dated 14 May 2012, subsequently updated on 13 March 2014.

Table 3: Summary of Little Eva Project Resources and Reserves

	Tonnes (million)	Copper (%)	Gold (g/t)	Contained Copper (t)	Contained Gold (oz)
RESOURCES					
Measured	37.1	0.60	0.09	222,000	112,000
Indicated	73.0	0.52	0.07	376,000	158,000
Inferred	40.1	0.52	0.11	208,000	138,000
Total	**150.2**	**0.54**	**0.09**	**807,000**	**409,000**
RESERVES					
Proven	31.0	0.64	0.08	198,000	84.7
Probable	39.4	0.51	0.07	200,000	89.5
Sub Total	70.6	0.57	0.08	399,000	174.2
Probable (stockpile)	15.3	0.18	0.06	28,000	31,000
Total	86.0	0.50	0.07	427,000	**205,000**
Mining Inventory	5.5	0.49	0.08	27,000	14,000

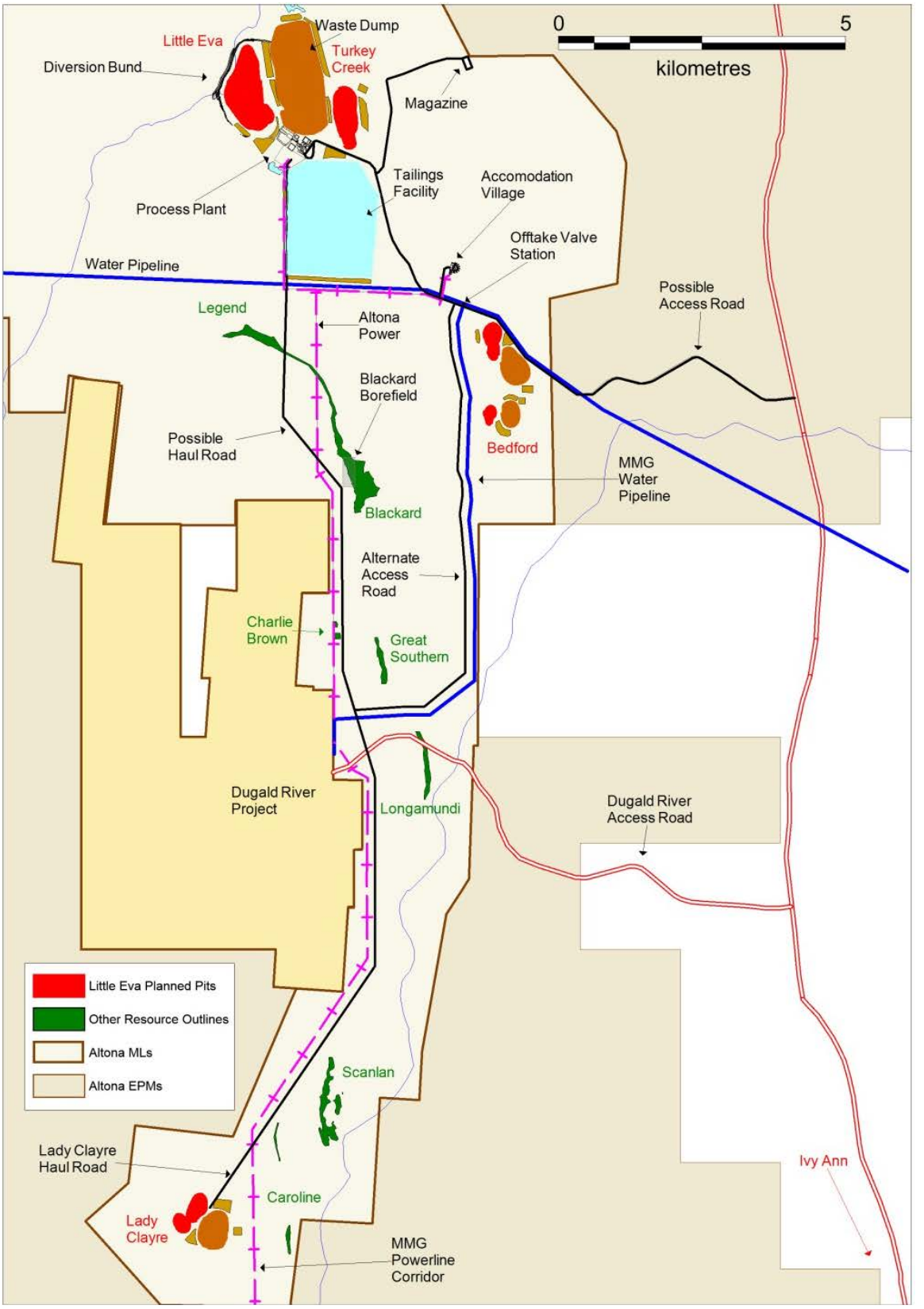

Figure 1: Project layout with new infrastructure

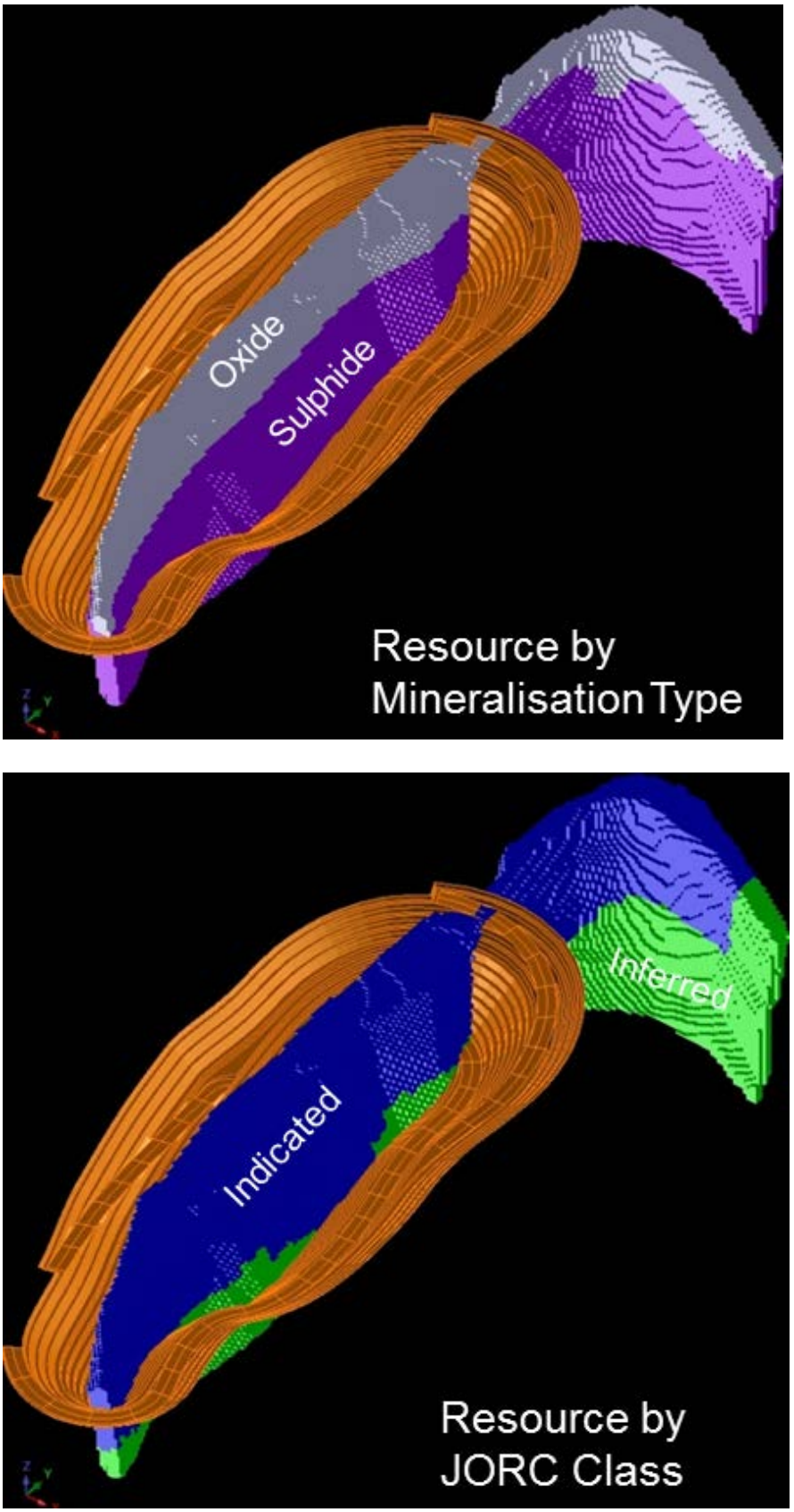

Figure 2: Turkey Creek open pit (brown) and resource outlines by JORC class and mineralisation type

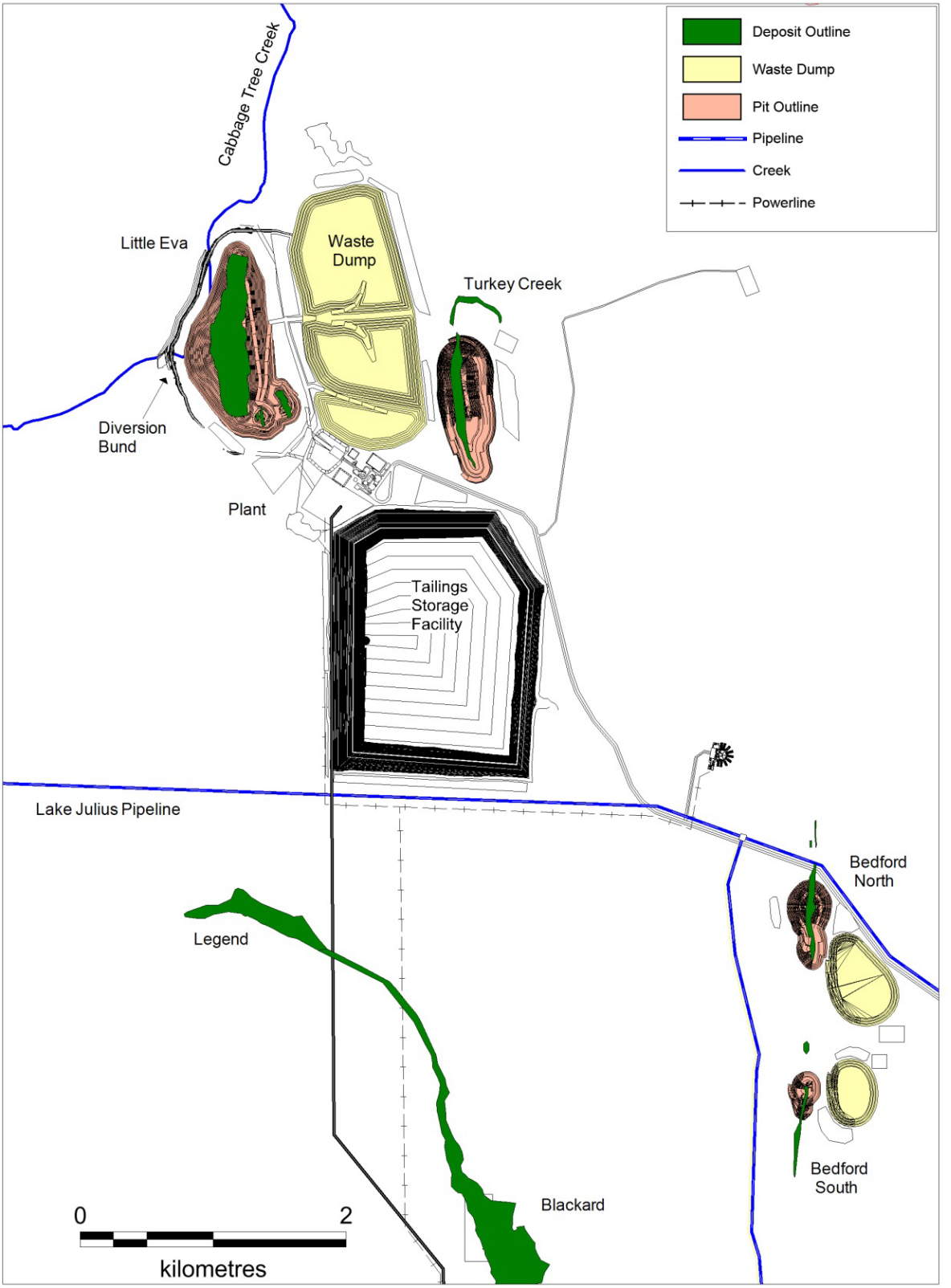

Figure 3: Little Eva and Turkey Creek open pit mine and infrastructure layout

Table 3: Table 1 of the JORC Code, 2012 Edition

The table below is a description of the assessment and reporting criteria used in the Turkey Creek Mineral Resource and Reserve estimation that reflects those presented in Table 1 of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012).

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	The drilling dataset incorporates 53 Reverse Circulation (RC) holes for a total of 7,814 metres drilling. Samples were collected at 1m intervals to obtain an average 3-4kg weight sample for analysis. Samples were collected directly using a rig mounted cyclone and cone splitter into pre-numbered calico bags; packed by Altona staff in bulka bags and shipped by truck for analysis. All samples were analysed at ALS laboratories in Townsville.
Drilling techniques	RC using 5.5" face sampling hammers. Holes were drilled at a dip angle of ~-60o to intersect mineralisation at optimal true width angles.
Drill sample recovery	Recovery was visually estimated and recorded. Recoveries are considered to be excellent averaging > 90%, and typically 100%. Lower recoveries were recorded occasionally in the hole collars (top few metres). The majority of the samples were dry. Individual samples were collected into the cyclone prior to cone splitting. Cyclone and sampling equipment was checked and cleaned after each rod. Sample bias due to preferential loss/gain for fine/coarse material is considered well within acceptable limits.
Logging	Logging was completed by Altona Mining geologists at the rig using Altona standard logging procedures. Representative RC sample chips have been retained for all holes in chip trays. Logging is qualitative and quantitative including, colour, lithology, mineralisation, alteration, sulphide and oxide mineralogy, sulphide and oxide amount, texture, grain size and structure.
Sub-sampling techniques and sample preparation	No drill core. The RC samples were split to 87.5%: 12.5% ratio using a cyclone and cone. Splitter to obtain a 3-4kg sample for analysis. The samples were sent to ALS Laboratories in Townsville for sample preparation and analysis. ALS is an independent commercial certified laboratory that uses industry standard sample preparation including drying, crushing and pulverisation.

Criteria	Commentary
	Sample size >3kg is considered representative for typical copper mineralisation at Roseby area.
Quality of assay data and laboratory tests	All samples were analysed at ALS laboratories in Townsville. Samples were analysed using an Aqua Regia digest using ICPAES and ICP-MS (method code: ME-MS41) for 51 elements. This included copper, with a detection limit of 0.2 ppm. Data reported from Aqua Regia digestion should be considered as representing only the leachable portion of a particular analyte. On return of Cu values >1% a second series of analyses were undertaken. This involved an ore grade Aqua Regia digestion (method code: ASY-AR01) followed by ICPAES analysis, optimised for accuracy and precision at high concentrations (method code: ME-OG46). Gold was analysed via a fire assay (30g) with an AAS finish, with a lower detection limit of 0.01 ppm and upper detection limit of 100 ppm. Quality Control included: standards (certified reference materials) from Geostats Ltd. Standards were inserted into the sampling sequence at 1:20 ratio and included representative material for copper, gold and blanks; and field duplicates taken using a riffle splitter on site for every 20th sample. Laboratory umpire checks were also carried out on sample pulps. The standards were inserted into each sample batch to test the accuracy of the laboratory analysis. All duplicate and reference data display acceptable accuracy and precision. No samples were analysed by an umpire laboratory. No geophysical tools were used to determine the results reported here.
Verification of sampling and assaying	Results were checked by several Altona personnel. No twinned holes. All field logging data was done using laptop and uploaded into the company Datashed database and validated by company database personnel. All assay files were received in digital format from ALS Laboratories. Data was uploaded into the Altona Datashed database and validated by company database personnel. No manual data inserts took place. No adjustments have been applied to the results.
Location of data points	Collar locations have been surveyed using Altona's own DGPS with approximately 0.1 metre horizontal accuracy. Elevation accuracy is considered to be less than 0.5 metres and has been verified against detailed ground survey previously completed in the area. Down hole surveys were completed at the end of each hole within drill rods by Altona personnel using a non-magnetic Gyro tool for azimuth and dip. The Grid is GDA94 MGA Zone 54.

Criteria	Commentary
Data spacing and distribution	100 metre (section spacing along strike) and 50m (down dip) with typically two or three holes per section. Consistent 1m sample intervals are maintained through the mineralised domains. Unmineralised samples (determined in the field using a Niton handheld XRF device) were composited for check analysis into 3m intervals by the laboratory in accordance with standard Altona procedures.
Orientation of data in relation to geological structure	Mineralisation strike is approximately north – south and swings to the east in the northern part of the deposit. Drilling was towards the west or north as deemed appropriate. Drilling was completed generally at -60 degree dip and with changing dip of the mineralisation true widths are estimated to be 80% of the down hole intercepts in the north, 90% in the central area and 80% in the south. No bias is considered to result from drilling direction.
Sample security	Samples from RC drilling are collected and bagged into pre-numbered calico bags at the drill site during the drilling operation. Unique sample number was retained during the whole process. Samples were collected and delivered to ALS as they were collected. Samples were stored in Altona facilities in Cloncurry prior to the transport to Townsville. All samples were then catalogued and sealed prior to dispatch to laboratory by Altona staff.
Audits or reviews	QA/QC samples are routinely monitored by the database manager and geologist on a batch and campaign basis. The accuracy of key elements such Cu and Au, was acceptable and the field duplicate assay data was unbiased and shows an acceptable level of precision. No external audits or reviews have been undertaken.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	Turkey Creek is within Mining Lease 90125 and Green Hills within Mining Lease 90124. Both MLs are 100% owned by Altona Mining Ltd. No joint ventures apply. There are agreements in place with the native title holders, the Kalkadoon people and with landholders. No significant historic sites or national parks are located within the reported exploration sites. Both Mining Leases were granted in late 2012 and are in good standing.
Exploration done by other parties	CRA Exploration completed soil surveys, RC drilling and mapping at Turkey Creek. Soil survey and mapping identified the mineralisation but drilling failed to

Criteria	Commentary
	intersect mineralisation due to the wrong drilling direction. Xstrata Exploration drilled two RC holes at the southern portion of Turkey Creek in 2011 intersecting copper mineralisation. Altona Mining followed with seven RC holes in 2012 extending the mineralisation some 400 metres to the north. Altona Mining completed an additional 44 RC holes during 2014.
Geology	Mineralisation is considered to be hydrothermal, stratabound and structurally controlled following internal competency, chemical and permeability contrast typical to the Roseby area metasediments. Mineralisation occurs both as fine grained pervasive dissemination and coarse grained vein hosted. Mineralisation is sulphidic under shallow, approximately 25 metre, oxidised cap. Copper sulphides include chalcocite, chalcopyrite and bornite. Majority of the oxide mineralisation consists of copper oxides (malachite) and silicates.
Drill hole Information	Exploration results are not being reported for the Mineral Resource area. Drill hole information is provided in the Mineral Resource estimation section.
Data aggregation methods	Exploration results are not being reported for the Mineral Resource area.
Relationship between mineralisation widths and intercept lengths	Exploration results are not being reported for the Mineral Resource area. Drilling azimuths are considered to be approximately perpendicular to the strike and dip of the mineralisation resulting unbiased true widths.
Diagrams	Refer to ASX release dated 18/3/2015, Figures 1 to 6.
Balanced reporting	Exploration results are not being reported for the Mineral Resource area.
Other substantive exploration data	Exploration results are not being reported for the Mineral Resource area.
Further work	Additional work in the future will consist of diamond core drilling for metallurgical testwork sampling, infill and exploration step-out RC drilling resource definition purposes.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	Data used for estimation is stored within a SQL Server database and is managed using DataShed software. The structure of the drilling and sampling data is based on the Maxwell Data Model. Drill data is logged directly into digital logging systems and uploaded to the

	database by the database administrator (Altona Standard procedures since 2006). Laboratory data has been received in digital format and uploaded directly to the database. (Altona Standard procedures since 2002). In both cases the data was validated on entry to the database, by a variety of means, including the enforcement of coding standards, constraints and triggers. These are features built into the data model that ensure that the data meets essential standards of validity and consistency. Original data sheets and files have been retained and are used to validate the contents of the database against the original logging. Extensive validation of existing collar, downhole survey and assay data was completed. Validation steps included: • Drillhole collar locations were compared to the topographic surface. • Downhole deviations of all drillhole traces were examined and problematic surveys were excluded. • The downhole survey datum was checked to ensure grid transformations were correctly applied. • All data (e.g. assay, bulk density, RQDs, core recovery) was checked for incorrect values by deriving minimum and maximum values. • Lithology data was checked to ensure standard rock type codes were used. • Meta-data fields were checked to ensure they were populated and that the data recorded was consistent.
Site visits	A number of site visits have been undertaken by Mr Bartsch No site visit has been undertaken by Mrs Standing the independent consultant for the Mineral Resource estimate.
Geological interpretation	Confidence in the geological interpretation of the deposit is moderate to high. The spatial extent and geometry of separate lithological components is well constrained by geological surface mapping and detailed logging of RC chips, supported by soil geochemistry and geophysical interpretation, including magnetics. The Turkey Creek deposit, while copper dominated, is interpreted as part of the broader Iron-Oxide-Copper Gold (IOCG) style mineral system common to the Cloncurry district. The deposit extends over 1.8 kilometres in length. Mineralisation occurs at surface, is exposed in sub-crop, and is confirmed through drilling in the main zone down dip to ~140 m vertical depth below surface. Copper occurs predominantly as primary sulphides in fresh rock and as secondary oxide minerals (malachite) within a thin surficial cap. Mineralisation is interpreted to be stratabound, hosted within a sequence of interbedded metasediments (biotite-schists, biotite-scapolite metasediments and marble). The host rocks are altered to carbonate and albite-hematite dominated assemblages. The drilled mineralised zone has a simple tabular geometry that displays strong

	continuity, with true widths varying from approximately 10-30 m (southern end) to 30-50 m (northern end). The main portion of the deposit is oriented north and dips 60° to the east; at its northern end, the strike of the mineralisation and host stratigraphy is folded sharply east and dips steeply south. The broader mineralised sheet displays an upper and lower zone of stronger copper mineralisation. Copper sulphide mineralisation is dominated by disseminated chalcocite and bornite, with subordinate chalcopyrite both disseminated and in carbonate veinlets. Geological interpretation was completed on a sectional basis; from which geological surfaces were interpolated to create 3D solids for mineralisation and lithology. There are no alternative detailed interpretations of geology. The geology interpretation has been refined and is believed to be highly robust. The main mineralisation domains were defined using grade constraints in conjunction with lithological contacts. A nominal cut-off grade of 0.2% Cu was used to define boundaries between mineralised and weakly-mineralised or unmineralised domains. Two main geological domains (Southern zone and Northern fold area) were defined. The Southern zone was sub-divided into a central low grade domain and two higher grade domains (footwall and hanging wall). Statistical and boundary analysis verified the domain definition. All domains were subdivided using a base of oxidation surface to separate oxide mineralisation and primary sulphide mineralisation.
Dimensions	The main zone of mineralisation extends over 1.8 kilometres in length and dips to the east -60 degrees. Mineralisation occurs at surface, is exposed in sub-crop, and has been intersected in drilling to ~ 140 m depth beneath the main Southern zone. The deposit remains open to the east and at depth.
Estimation and modelling techniques	Drillhole sample data was flagged from three dimensional interpretations of the mineralised domains. Sample data was composited to a 1 metre downhole length. Data has a low coefficient of variation and top-cut grades were not applied. Copper mineralisation continuity was interpreted from variogram analyses to have an along strike range of 150 metres to 250 metres and an across strike range of 20 metres to 55 metres. Drillhole spacing ranges from 50 metres to 100 metres along strike; on-section spacing ranges from 25 metres to 50 metres. Maximum extrapolation distance is 35 metres along strike and up to 50 metres depth, in line with intersections from deeper drillholes. Grade estimation was into parent blocks of 10 mE by 50 mN on 10 metre benches

	within the Southern zone and into 10 mE by 25 mN by 10 mRL parent blocks within the Northern fold area. Estimation was carried out using ordinary kriging at the parent block scale. Three estimation passes were used; within the Southern zone the first search was based upon the variogram ranges in the three principal directions; the second search was two times the initial search and the third search was six times the initial search, with reduced sample numbers required for estimation. Data from the Northern fold area was unfolded and block grades estimated in unfolded space. Three estimation passes were used; first search was based upon the variogram ranges in the three principal directions; the second search was two times the initial search and the third search was ten times the initial search, with reduced sample numbers required for estimation. 66% of the block grades were estimated in the first pass. Post-processing of the data by local uniform conditioning was applied to estimate block grades at the selective mining (SMU) scale of 5 mE by 6.25 mN by 2.5 mRL. The estimated copper block model grades were visually validated against the input drillhole data, comparisons were carried out against the declustered drillhole data and by northing, easting and elevation slices.
Moisture	Tonnes have been estimated on a dry basis. Moisture content has not been tested.
Cut-off parameters	The Mineral Resource is reported above a 0.3% copper cut-off grade and within 150 m of the surface, to reflect current commodity prices and open pit mining methods.
Mining factors or assumptions	Planned extraction is by open pit mining. Mining factors such as dilution and ore loss have not been applied to the resource esitmate.
Metallurgical factors or assumptions	No metallurgical assumptions have been built into the resource models. Preliminary metallurgical and mineralogical testing on samples from the sulphide mineralisation from the main zones support recovery and indicate that economic concentrate grades can be achieved.
Environmental factors or assumptions	The new Turkey Creek resource will be included as a component of the Little Eva Development Project coverd by a granted Environmental Management Plan (EMP). Accordingly the EMP will need to be updated to encapsulate its development. The EMP considers a broad range of environmental considerations including: • Flora and fauna • Soils • Radiation • Atmospheric emissions • Hydrogeology

	• Baseline and ongoing studies form part of EMP requirements Analysis of simulated tailings fluids and solids prepared through laboratory scale test work indicates favourable environmental results for the neighbouring Little Eva deposit. Simulated sulphide and oxide tailings were found to be benign in terms of potential for formation of acidic, saline or metalliferous drainage. Testwork on Turkey Creek has not been carried out. By nature of similar setting to Little Eva, in-part shared host rocks and low sulphide content, no adverse environmental considerations have been built into the resource model.
Bulk density	In-situ bulk density values have been confirmed based on physical measurements conducted on drillcore samples. The average measured densities are: sulphide mineralisation 2.73 t/m3; oxide mineralisation 2.59 t/m3. In-situ bulk densities applied to the resource estimate are: oxide mineralised metasediments 2.5 t/m3; and, mineralised metasediments 2.7 t/m3
Classification	Classification for the Turkey Creek Mineral Resource is based upon the continuity of geology, mineralisation and grade, using drillhole data spacing and quality, variography and estimation statistics (number of samples used, estimation pass, kriging efficiency and slope of regression). Mineral Resources have been classified on the basis of confidence in geological and grade continuity using the drilling density, geological model, modelled grade continuity and conditional bias measures (slope of the regression and kriging efficiency) as criteria. • Measured Mineral Resources - none defined • Indicated Mineral Resources - have been defined in areas where drill spacing is 100 metres by 50 metres or less, within a down dip extent of up to 25 metres below the drilling and where grade variance is moderate • Inferred Mineral Resources have been defined in areas where extension of mineralisation is supported down dip and within the eastern extent of the Nothern fold area. The classification considers all available data and quality of the estimate and reflects the Competent Person's view of the deposit.
Audits or reviews	The resource estimate has been internally reviewed by Altona staff. The geological interpretation, estimation parameters and validation of the resource models were peer reviewed by Optiro staff.
Discussion or relative accuracy / confidence	The assigned classification of Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate. The confidence levels reflect production volumes on an annual basis.

Section 4: Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section)

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	The geological model used to estimate the Mineral Resource for Turkey Creek was developed by Altona Mining Ltd, and the block model/resource estimate was created and reported in March 2015 by Optiro. The stated Mineral Resource is inclusive of the Ore Reserve.
Site visits	The competent persons are regular visitors to site.
Study status	A Definitive Feasibility Study (DFS) was carried out in 2011/12 for the Little Eva Project and a cost update was completed in 2014. Input parameters for integrating Turkey Creek into the project were based (and adjusted as required to reflect current conditions) on the DFS. Mine layouts were adjusted to accommodate the addition of Turkey Creek. The work to incorporate Turkey Creek into the Little Eva project has been compiled as an addendum to the Little Eva DFS. All material modifying factors have been considered.
Cut-off parameters	Minimum cut-off grades for Turkey Creek were calculated at 0.16% Cu. This is based on the ability to mine the resource on an economic basis. The copper price used was based on information on consensus pricing provided by Altona. Cut-off grade varies over the mine valuation period.
Mining factors or assumptions	Integration of the Turkey Creek deposit into the Little Eva Project, which envisages a 7 million tonnes per annum processing facility (SAG/Ball and flotation circuit) to produce a concentrate. Several optimisations were carried out based on input parameters from the original DFS and the 2014 update. Pit optimisations were undertaken by independent resource consultancy Optiro Pty Ltd. and by independent resource consultancy Orelogy. Orelogy developed pit designs and mine schedules. The Ore Reserves are reported within pit designs. Designs which are based on bulk mining using conventional load and haul practices, with drill and blast where required. The pit design was based upon pit shell optimisations of all resource categories (Measured, Indicated and Inferred). Optimisations excluding Inferred resources capture all Measured and Indicated resources. There are however no Measured Resources. The overall pit slopes used for the pit optimisation were those used for the Little Eva pit design of 40° in the oxide zone and 43°in fresh rock No geotechnical assessment has been conducted however geotechnical logging indicate conditions equal to or better than those seen at Little Eva. Summary of pit optimisation input parameters: • Direct mining costs inclusive of Load & Haul, Drill & Blast of A$2.77/t at the surface plus a vertical incremental cost per 10m bench of + A$0.072/t.

Criteria	Commentary

	• Ore haulage cost from the Turkey Creek pit to the Little Eva plant of A$ 1.00/t.
	• Mining recovery 96% .
	• Dilution 6%.
	• Processing costs are AU$10.26/t which is inclusive of:
	  - General and Administration
	  - Sustaining Capital
	  - Grade Control
	  - Ore haulage cost.
	• Processing recovery for copper 96%.
	• 25% copper in concentrate with a moisture content of 9%.
	• Concentrate transport and shipping A$48.75/t.
	• Concentrate treatment charge of A$93.75/t concentrate.
	• Refining costs of A$206.68/t copper metal.
	• Copper price of A$8,267/t.
	• Copper payability of 96%.

Metallurgical factors or assumptions	Ore will be processed through the proposed Little Eva Project process plant at a rate of 7 million tonnes per annum flotation circuit to produce a concentrate; the plant utilises industry standard and simple proven technology. The metallurgical recoveries to copper concentrate used for pit optimisation are based on detailed optimised testwork on the neighbouring Little Eva deposit. Testwork carried out to date on Turkey Creek ore indicates that at a finer grind size the Turkey Creek ore should perform similarly to the Little Eva ore with respect to copper recovery. Metallurgical testwork followed flowsheets based on previous studies and results from the Little Eva Project and reflecting the established DFS project process design. Two programmes of testwork have been conducted. The first testwork programme was completed using composite samples from RC resource drill hole samples. GR Engineering Services managed the programme.The second programme used diamond drill core holes targeting representative geometallurgical domains within the optimised pit shell.. Altona managed this programme. Both testwork programs were conducted by ALS AMMTEC. The testwork programmes showed that the copper sulphides could be recovered into rougher concentrates at around 93% copper recovery. Optimum response (range 91 to 95% copper recovery) was at a grind size P80 of 106 µm and 75 µm. More detailed work was performed in the second programme. At the optimum rougher stage grind sizes of P80 of 106 µm to 75 µm concentrate grades of 8.5 - 12.1 % copper approximated those achieved on the Little Eva Ore of 8.7 - 14.7 % copper at a grind size P80 of 212 µm. A finer grind gave a higher concentrate grade which was supported by mineralogical analysis which showed copper mineral (chalcocite, bornite,

Criteria	Commentary
	chalcopyrite) grain sizes predominantly in the 200 to 30 µm range. A single unoptimised cleaner test was conducted on a rougher concentrate sample at a 106 µm with regrind at a P80 of 35 µm. A high grade concentrate of 32.6% copper was achieved. The results indicate that the Little Eva flowsheet of a coarse grind followed by regrinding of a rougher concentrate is a viable option for the Turkey Creek ore. Characterisation of the breakage behaviour of mineralisation types from Turkey Creek was undertaken on diamond drillcore. Sulphide ore is softer than Little Eva ore. Bond work indices (BRMWi 19.9 and BMWi 14.9) for sulphide ore from Turkey creek are lower than the average determined for Little Eva ore (20.4 and 18.0 respectively) within the lower end of the range of variability displayed by Little Eva ore.
Environmental	Environmental impact studies have been completed and an Environmental Authority (EA) was granted permitting the grant of Mining Leases. Amendments to the EA are required to incorporate Turkey Creek into the Project. An EA amendment application has been prepared and lodged by MBS Environmental. All necessary studies and designs have been completed for a revised mine layout to include Turkey Creek to support the amendment. A decision by the Queensland Department of Environment and Heritage Protection on the amendment application is pending with no objections from affected parties having been received.
Infrastructure	Details of the proposed project are described more fully in ASX release of 13 March 2014. The project is located in an established mining district with close access to required infrastructure. It is approximately 65km by road to Cloncurry. Concentrate trucked 65km to Cloncurry in half containers on existing sealed roads within 10 km of the plant; containerised rail to Townsville port. Power supply is to be provided via a proposed 9km line from the Dugald River mine substation. The 220KV power line to bring power from Cloncurry to Dugald River substation is a part of the MMG Dugald River Project which was approved for development in mid-2015. Ground water will be sourced primarily from pit dewatering bores at active pits supplemented by permitted dewatering of the Blackard resource. Blackard is not currently included in the mine plan. Back up water can be purchased from the Lake Julius - Ernest Henry water pipeline which is 2.5 km from the plant. A fly-in fly-out work force is to be complemented by local drive in-drive out employees from Cloncurry and Mt Isa. Accommodation will be on site in a 220 man village or in Cloncurry. DFS mine site infrastructure layouts and designs have been revised by Knight Piesold (tailings storage facility, drainage diversions) and Orelogy (waste dumps) to incorporate mining of Turkey Creek.

Criteria	Commentary
Costs	Appropriate estimating and costing techniques and studies were used throughout this study. Costs were apportioned appropriately to either capital or operating cost categories. The mining costs are those provided by reputable mining contractors based on a mining schedule developed prior to the upgrade in resource model. The processing, engineering and other costs are obtained from: a) quantities determined from material take off; b) direct costs and schedules of rates; c) spare and first fill requirements. All other costs being generated from various studies associated with current activities. Altona.
Revenue factors	The long term copper price used is US$6,614/t. Allowances are made for transport charges and royalty charges where appropriate. Any forward product cost projections, exchange rates is based on assessment of the relevant market analyst information.
Market assessment	There are currently no offtake agreements in place and these will be secured closer to a final investment decision. It should also be noted that Altona have experience in this market, as they successfully secured offtake agreements for a previous Altona mining operation.
Economic	Inputs for the economic analysis are as listed under Mining factors or Assumptions.
Social	All access, heritage and compensation agreements required with key stakeholders are in place.
Other	Natural risks, such as flooding, have been considered in the design and work undertaken to mitigate against any ill effects from up to a 1 in 100 year event. It is considered that the current planning and layout can be developed into a viable operation. However, there are several opportunities which can be explored prior to implementation which, if completed, will improve the outcome. All other legal social and government factors have been reviewed and do not show any signs of hindering the viability of the project. All titles have been checked against the Government of Queensland's data base and appear in order. The primary permits required are either already in place. It is not expected that any outstanding permits or required amendments will be an issue as no negative receptors have been identified.
Classification	Only fresh (sulphide) ore has been converted to Ore Reserves. The Turkey Creek Mineral Resources are classified as Indicated and Inferred. Pit designs and pit optimisations are based on both Indicated and Inferred Mineral Resource classes. The overall pit comprises 3 stages of mining. Stage 1 and 2 pits are based on a pit shell optimised on Indicated Mineral Resources only. Indicated Mineral Resources within the first two stages have all been converted to Probable Ore Reserves. All Inferred Mineral Resources and Indicated Mineral Resources within the third stage are reported as Mining Inventory.

Criteria	Commentary
Audits or reviews	No previous Ore Reserves have been declared for Turkey Creek. Internal peer reviews were undertaken. Consideration of current market conditions (lower operating costs and lower metal prices) have been assessed has having an overall positive or neutral impact. Preliminary pit optimisations conducted by Optiro are consistent with the outcomes of more expansive work by Orelogy.
Discussion of relative accuracy / confidence	The assigned classification of Probable Reserve reflects the Competent Person's assessment of the accuracy and confidence levels in the estimate. The confidence levels reflect production volumes on a Life of Mine and annual basis.