



ASX Release

15 August 2016

In excess of 85 million tonnes of Kieserite defined within Colluli Project Resource adds to multi agri-commodity potential

Highlights

- **In excess of 85 million tonne** Kieserite mineral resource contained within the Colluli Project JORC 2012 compliant Mineral Resource estimate¹
- Kieserite is a **chloride free, multi-nutrient fertiliser containing magnesium and sulphur** typically used in **cropping, horticulture, palm oil, market gardening and maize production**
- Kieserite reported to trade at **approximately US\$100 to US\$120 per tonne**²
- Kieserite further adds to the pipeline of Colluli's **multi agri product suite**
- Colluli Project definitive feasibility study (DFS) demonstrates a **world class sulphate of potash (SOP) project, in close proximity to the coast, with a mine life of over 200 years**³
- Kieserite expected to be mined as part of the plant feed material for SOP production
- **In addition to SOP and kieserite potential, sulphate of potash magnesia (SOPM)** has been produced from the Colluli Project salts for marketing purposes
- **MOUs have been signed for 800kt per annum of SOP and 200kt per annum of SOPM**⁴

Danakali Limited ("Danakali", ASX:DNK) is pleased to announce that the kieserite content in the Colluli Project Resource has been quantified. Kieserite ("Magnesium sulphate monohydrate", $MgSO_4 \cdot H_2O$) is a commonly used chloride free, multi-nutrient fertiliser with limited current primary production centres globally.

Managing Director, Paul Donaldson said *"This further adds to what we believe is a compelling investment case and further substantiates the Colluli Project as a positively unique, world class project with multi agri-commodity potential. Kieserite is a sought after fertiliser for magnesium deficient soils which are common in jurisdictions*

¹ Colluli Mineral Resource Estimate, February 2015. For a breakdown of Measured, Indicated and Inferred Resources refer to table 2.

² Based on supplier quotes – Runzichem (3 August 2016), Anderson Chemicals (3 August 2016), Aussie Fertichem (4 August 2016). There is no certainty that kieserite will be successfully mined. In addition, if kieserite is successfully mined in economically viable quantities and is sold, there is no certainty that the Company will realise a sale price based on the current supplier quotes for kieserite.

³ ASX announcement, 30 November 2015

⁴ ASX announcements, 19 April 2016, 20 July 2016, 22 July 2016, 25 July 2016



proximate to Colluli. The monetisation potential adds to the industry leading capital intensity, superior project economics and bottom quartile operating costs determined in the definitive feasibility study for the production of sulphate of potash. The geological history of the Danakil Depression has provided a unique resource composition relative to other potash basins throughout the world, enabling it to produce a broad suite of fertiliser products and providing unrivalled product diversification and project upside potential. The project has no peer.”

The Colluli Project Mineral Resource Estimate completed by AMC Consultants (**AMC**) demonstrates that the majority of the kieserite within the Resource sits within the lower carnallite layer, at a content of approximately 22%. Additional kieserite is contained within the upper carnallite and kainite layers of the Resource¹. These salts may be extracted to produce SOP. Metallurgical test work indicates that the kieserite will report to the tailings stream of the processing plant with the design developed in the definitive feasibility study (DFS). Test work was completed at the Saskatchewan Research Council (**SRC**) using salts from the Colluli Project Resource. Preliminary liberation testing indicates the kieserite can be separated from the salt in the tailings.

Next Steps

Work will commence in the near future on the recovery of kieserite from the tailings salt and the associated capital and operating costs required for its separation.

About Kieserite

Kieserite is a multi-nutrient fertiliser comprising sulphur and magnesium. It represents an ideal fertiliser for magnesium deficient soils, which are common in India, Africa and South America.

Kieserite is primarily obtained from deep underground mining of minerals in Germany. It occurs in marine evaporites in association with halite, carnallite, polyhalite and kainite. It is an effective magnesium and sulphur source for all crops and in all types of soil. Fine crystalline kieserite is sold for direct application to soil, or it is granulated to a larger particle size that is better suited for mechanical fertilizer spreading or for bulk blending with other fertilisers⁵.

Many soils are low in magnesium (**Mg**) and require supplemental nutrients to support crop yield and quality. Sandy-textured soils and soils with a low pH (such as highly weathered tropical soils) are frequently characterized by a low Mg supply for plants. Under these conditions, it is a prerequisite to raise the Mg content in the soil by adequate fertilisation⁵.

Fertiliser Mg application rates vary depending on factors such as the specific crop requirement, the quantity removed during harvest, and the ability of soil minerals to release adequate Mg in a timely manner to support crop yield



Magnesium has many functions in the metabolism of oil palm⁵



Magnesium deficiency impacts the health of maize⁵



Magnesium can be added to bulk blends or through foliar systems⁵



and quality. Kieserite application rates are typically in the range of 200 to 300 kg/ha for many crops⁵.

Current market prices for kieserite can be in the order of US\$100 to US\$120 per tonne FOB², based on supplier quotes (Runzichem (3 August 2016), Anderson Chemicals (3 August 2016), Aussie Fertichem (4 August 2016)). There is no certainty that kieserite will be successfully mined from the Colluli Project. In addition, if kieserite is successfully mined in economically viable quantities, there is no certainty that the Company will realise a sale price based on the current supplier quotes for kieserite.

Two key nutrients in one particle – magnesium and sulphur

Magnesium (Mg): The central chemical component of chlorophyll, the pigment molecule responsible for absorbing sunlight during photosynthesis. Providing Mg and K in the proper balance helps increase plant strength and builds resistance to winter kill, drying, insect attack and spray damage.

Sulphur (S): Helps build proteins in plants and is a key component of many unique traits. S puts the “green and leafy” into crops like spinach, gives garlic and asparagus their distinctive flavours and improves the baking quality of wheat. Deficiencies of S are of particular concern, as sulphur dioxide emission-reduction programs cause less S to be returned to the soil via the atmosphere. The sulphate form of the S aids initial root growth, and promotes seed production and vigorous plant growth⁵.

Colluli Project is ideally located for Magnesium deficient regions

The Colluli Project is located in a highly favourable geographical location relative to key agricultural regions with magnesium deficient soils (Figure 1) which are predominantly in India, Sub-Sahara Africa, South East Asia and South America.

⁵ International Plant Nutrition Institute



Figure 1 - Distribution of magnesium deficient soils. [Source: CRU consultants]

Kieserite within the Colluli Project Resource estimate

The local geology of the Colluli Project is dominated by an expansive evaporite sequence, formed when the Red Sea was connected by seaway to the Danakil Depression. The mineralisation is a layered evaporite sequence, covering an area of approximately 10km north to south by 5km east to west.

The Colluli Mineral Resource Estimate completed by AMC Consultants demonstrates that the majority of the kieserite within the resource exists within the lower carnallite layer, at a content of approximately 22%. Additional kieserite is contained within the upper carnallite and kainite layers of the resource. Kieserite was not reported as part of the Colluli Project Mineral Resource in 2015 as a recovery process had not yet been demonstrated. A recent metallurgical review has identified a potential process to recover kieserite from the Colluli tailings, after original test work demonstrated kieserite will report to the process plant tailings stream.

The Resource estimate is based on drill hole assay data from the original exploration drilling campaign conducted from 2010 to 2012, with additional QAQC drilling in late 2014. The deposit was originally sampled using 100% diamond core from surface. A total of 103 diamond holes have been drilled into the deposit of which 102 holes had geological logging, assaying or geophysical logging and were available for resource estimation. Diamond core was cut in half using a diesel powered core saw. No water was used for lubrication or dust suppression to ensure no core dissolution occurred. Core selected for duplicate analysis was further cut as quartered core with both quarters submitted individually for analysis.



The 2014 drilling was for data validation purposes only and was not directly used in the Mineral Resource estimate. Geological interpretation was carried out by Danakali (previously South Boulder) and AMC, with Mineral Resource estimation and reporting by AMC.

AMC reinterpreted the mineralisation (based on previous work conducted by Ercosplan Ingenieurgesellschaft Geotechnik und Bergbau mbH(Ercosplan)) and produced a set of wire-framed shapes to represent the geological and mineralisation boundaries. These wire-frames were used to develop a three-dimensional block model.

AMC validated the data and requested four diamond drill holes to be twinned for QAQC purposes, and audited previous data, data collection processes and operational procedures for the estimate.

A total of twelve rock units have been interpreted in the current model, with six of these identified as potential economic resource. These are Upper, Middle, and Lower Sylvinite members, Upper and Lower Carnallite members and the Kainitite member.

A block volume model was created using the wire-framed mineralisation interpretation and grade was estimated for K, Mg, Na, Cl, Ca, SO₄, KCl, K₂O, Sylvite, Carnallite, Kainite, Polyhalite, Halite, Bischofite, Kieserite and Anhydrite into the model. The selection of the estimation parameters was based on studies of the statistics and variography of the input drill hole assay data. All grades were estimated into parent cells, with sub-cells receiving the same grade as the parent. Sub-cells were allowed to form in order to honour the interpreted wire-frame volume for each domain. Grade estimation was completed by using ordinary kriging.

Open pit mining is the intended method of extraction, to enable the selective extraction of the salt and potash ore units, minimise dilution and ore loss, and eliminate the requirement for drill and blast.

Social and environmental baseline studies, impact assessments and management plans have been completed and submitted to the Eritrean Ministry of Energy and Mines. All environmental and socioeconomic baseline studies have been completed and reviewed by the Department of Environment. There are believed to be no related issues that do not have a reasonable likelihood of being resolved.

Table 1 lists the 2015 Mineral Resource for Colluli with the Kieserite content now reported. The Mineral Resource Estimate prepared has been classified and reported under the guidelines of the 2012 JORC Code as Measured, Indicated and Inferred Resources as set out in Table 2.

Table 1 - Colluli Project Mineral Resource Estimate, Feb 2015 with Kieserite added

Rock Unit	Tonnes Mt	Density t/m ⁻³	K ₂ O Equiv. %	Kieserite %
Sylvinite	265	2.2	12	0.03
Upper Carnallitite	51	2.1	12	3
Lower Carnallitite	347	2.1	7	22
Kainitite	626	2.1	12	1
Total	1289	2.1	11	7



The Resource contains 18 million tonnes of kieserite in Measured Resource, 66 million tonnes of kieserite in Indicated Resource and 3 million tonnes of kieserite in Inferred Resource.

Table 2 – Kieserite contained by Resource Classification

	Measured		Indicated		Inferred		Total		
	Mt	Contained Kieserite (Mt)	Mt	Contained Kieserite (Mt)	Mt	Contained Kieserite (Mt)	Total (Mt)	Contained Kieserite (Mt)	Kieserite %
Sylv	90	0	160	0	15	0	265	0	0.03
Carn	80	16	303	59	15	3	398	78	20
Kain	133	2	488	7	5	0	626	9	1
TOTAL	303	18	951	66	35	3	1,289	87	7

¹ Weighted Average

About Colluli

In November 2015, Danakali released a highly positive DFS for Colluli which demonstrates industry leading capital intensity and lowest development costs relative to all SOP projects at DFS level in the world. Bottom quartile operating costs are predicted. Mine life is estimated at over 200 years at the DFS production rate, providing the project with substantial growth potential.

The Colluli Mining Share Company is focussing on developing a multi-agri commodity and salt business using the principles of modularity, risk mitigation and full resource utilisation. The shallow mineralisation, close proximity to coast, highly favourable suite of potassium bearing salts and multi agri-commodity diversification potential combine to make Colluli positively unique. It is an unrivalled greenfield project and has no peer. Colluli is a multi-decade potash project in the world and demonstrates superior economic outcomes in comparison with other advanced potassium sulphate projects.

In 2015, a JORC 2012 compliant 300 million tonne high quality rock salt resource was quantified. The salt, which has an average grade of 97%, is intended to be extracted to access the potassium bearing salts¹.

The potassium bearing resource of the Danakil Depression has the unique capability to produce three of the four potash types in the global potash market which comprises potassium sulphate (sulphate of potash or SOP), potassium chloride (muriate of potash or MOP), potassium magnesium sulphate (sulphate of potash magnesia or SOP-M) and potassium nitrate (nitrate of potash or NOP).

For more information, please contact:

Paul Donaldson
Managing Director
+61 8 6315 1444

For Media and Broker Enquiries:

Michael Cairnduff
Cannings Purple
+61 400 466 226



About Danakali Ltd

Danakali is an ASX listed company and 50% owner of the Colluli Potash Project in Eritrea, East Africa. The company is currently developing the Colluli Project in partnership with the Eritrean National Mining Company (ENAMCO).

The project is located in the Danakil Depression region of Eritrea, and is ~75km from the Red Sea coast, making it one of the most accessible potash deposits globally. Mineralisation within the Colluli resource commences at just 16m, making it the world's shallowest potash deposit. The resource is amendable to open pit mining, which allows higher overall resource recovery to be achieved, is generally safer than underground mining and is highly advantageous for modular growth.

The company has completed a definitive feasibility study for the production of potassium sulphate, otherwise known as SOP. SOP is a chloride free, specialty fertiliser which carries a substantial price premium relative to the more common potash type; potassium chloride. Economic resources for production of SOP are geologically scarce. The unique composition of the Colluli resource favours low energy input, high potassium yield conversion to SOP using commercially proven technology. One of the key advantages of the resource is that the salts are present in solid form (in contrast with production of SOP from brines) with which reduces infrastructure costs and substantially reduces the time required to achieve full production capacity.

The resource is favourably positioned to supply the world's fastest growing markets.

Our vision is to bring the Colluli project into production using the principles of risk management, resource utilisation and modularity, using the starting module as a growth platform to develop the resource to its full potential.

Competent Persons Statement (Rock Salt Resource)

Colluli has a JORC 2012 compliant Measured, Indicated and Inferred Mineral Resource estimate of 347Mt @97% NaCl. The resource contains 28Mt @ 97% NaCl of Measured Resources, 180Mt @ 97% NaCl of Indicated Resources and 139Mt @ 97% NaCl of Inferred Resources.

The information relating to the Colluli Rock Salt Mineral Resource estimate was compiled by Mr. John Tyrrell. Mr. Tyrrell is a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and a full time employee of AMC. Mr. Tyrrell has more than 25 years' experience in the field of Mineral Resource estimation. He has sufficient experience relevant to the style of mineralisation and type of the deposit under consideration, and in resource model development, to qualify as a Competent Person as defined in the JORC Code.

Mr Tyrrell consents to the inclusion of the information relating to the rock salt Mineral Resource in the form and context in which it appears

Competent Persons Statement (Sulphate of Potash Resource)

Colluli has a JORC 2012 compliant Measured, Indicated and Inferred Mineral Resource estimate of 1,289Mt @11% K₂O. The resource contains 303Mt @ 11% K₂O of Measured Resources, 951Mt @ 11% K₂O of Indicated Resources and 35Mt @ 10% K₂O of Inferred Resources.

The information relating to the 2015 Colluli Mineral Resource estimate was compiled by Mr. John Tyrrell, under the supervision of Mr. Stephen Halabura M. Sc. P. Geo. Fellow of Engineers Canada (Hon), Fellow of Geoscientists Canada, and as a geologist with over 25 years' experience in the potash mining industry. Mr. Tyrrell is a member of the Australian Institute of Mining and Metallurgy and a full time employee of AMC. Mr. Tyrrell has more than 25 years' experience in the field of Mineral Resource estimation.

Mr. Halabura is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan, a Recognised Professional Organisation (RPO) under the JORC Code and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

Mr. Tyrrell & Mr. Halabura consent to the inclusion of information relating to the 2015 Resource Statement in the form and context in which it appears.

Quality Control and Quality Assurance

Danakali Exploration programs follow standard operating and quality assurance procedures to ensure that all sampling techniques and sample results meet international reporting standards. Drill holes are located using GPS coordinates using WGS84 Datum, all mineralisation intervals are downhole and are true width intervals.

The samples are derived from HQ diamond drill core, which in the case of carnallite ores, are sealed in heat sealed plastic tubing immediately as it is drilled to preserve the sample. Significant sample intervals are dry quarter cut using a diamond saw and then resealed and double bagged for transport to the laboratory.

Halite blanks and duplicate samples are submitted with each hole. Chemical analyses were conducted by Kali-UmwelttechnikGmbH Sondershausen, Germany utilising flame emission spectrometry, atomic absorption spectroscopy and ionchromatography. Kali- Umwelttechnik (KUTEC) Sondershausen1 have extensive experience in analysis of salt rock and brine samples and is certified according by DIN EN ISO/IEC 17025 by the Deutsche AkkreditierungssystemPrüfwesen GmbH (DAR). The laboratory follows standard procedures for the analysis of potash salt rocks chemical analysis (K+, Na+, Mg²⁺, Ca²⁺, Cl⁻, SO₄²⁻, H₂O) and X-ray diffraction (XRD) analysis of the same samples as for chemical analysis to determine a qualitative mineral composition, which combined with the chemical analysis gives a quantitative mineral composition.



Forward Looking Statements and Disclaimer

The information in this document is published to inform you about Danakali Limited (the "Company" or "DNK") and its activities. DNK has endeavoured to ensure that the information enclosed is accurate at the time of release, and that it accurately reflects the Company's intentions. All statements in this document, other than statements of historical facts, that address future production, project development, reserve or resource potential, exploration drilling, exploitation activities, corporate transactions and events or developments that the Company expects to occur, are forward-looking statements. Although the Company believes the expectations expressed in such statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forward-looking statements.

Factors that could cause actual results to differ materially from those in forward-looking statements include market prices of potash and, exploitation and exploration successes, capital and operating costs, changes in project parameters as plans continue to be evaluated, continued availability of capital and financing and general economic, market or business conditions, as well as those factors disclosed in the Company's filed documents.

There can be no assurance that the development of the Colluli Project will proceed as planned. Accordingly, readers should not place undue reliance on forward looking information. Mineral Resources and Ore Reserves have been reported according to the JORC Code, 2012 Edition. To the extent permitted by law, the Company accepts no responsibility or liability for any losses or damages of any kind arising out of the use of any information contained in this document. Recipients should make their own enquiries in relation to any investment decisions.

Mineral Resource, Ore Reserve and financial assumptions made in this document are consistent with assumptions detailed in the Company's ASX announcements dated 25 February 2015, 4 March 2015, 23 September 2015 and 30 November 2015 which continue to apply and have not materially changed. The Company is not aware of any new information or data that materially affects assumptions made.



2015 Colluli Mineral Resource Estimate for Potash and Upper Rock Salt Unit (2012 JORC Code – Table 1)

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialized industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	<p>The Colluli deposit was sampled using diamond core from surface. A total of 103 diamond holes were drilled into the deposit. 102 of the 103 holes had geological logging, assaying or geophysical logging and were available for the resource estimate. The total metres of drilling for the project were 6,409 at the date of the resource estimate. Drilling by Danakali (Formerly South Boulder Mines) occurred from June 2010 until October 2012. Borehole geophysical logging in the form of gamma ray – density measurements were made on 22 drill holes and the results interpreted to determine density of the various rock units.</p> <p>Holes were drilled on an approximate UTM grid (WGS84, Zone 37N) with a grid direction of approximately 050 degrees magnetic in Area A and 090 degrees in Area B, both at a dip of -90 degrees. The drill collar positioning was a nominal 500 m x 500 m spacing in X and Y at Area A and a 700 m x 1000 m grid spacing at Area B.</p> <p>An additional 28 drill holes were completed for use in the rock salt estimate, the GT-A* series and COL098 – COL110. All were logged geologically, but only the GT-A* series holes were assayed (15 holes). The units that were targeted for the update were the Upper Rock Salt (URST) unit and the Marker Beds (MBED) unit.</p>
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	<p>Drill hole collars were originally set out using hand held GPS and on completion the collars were surveyed by survey contractors using high precision GPS. Downhole surveys were not completed as all holes were drilled at 90 degrees down-dip and were almost all less than 150m depth.</p> <p>Diamond core was half-core sampled at regular intervals and generally constrained to geological boundaries where appropriate.</p>
	Aspects of the determination of mineralization that are Material to the Public Report.	<p>Diamond core was drilled predominantly at HQ size. Diamond core samples were cut and bagged and sent to K-Utec in Germany where they were crushed, split and pulverized and assayed for a suite of cations and anions using a liquid ion chromatography technique. Sample pulps were then sent to Technische Universität Clausthal (TUC) for check assaying, using a similar process. A small number of pulp repeats were sent to the Saskatchewan Research Council (SRC) along with samples for geotechnical sampling.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
Drilling techniques	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.).	Diamond drill holes account for 100% of the drill metres and comprises HQ sized core. All holes were drilled as diamond holes from surface, with HW 4" casing employed at the top of the holes due to poor ground conditions in the overburden unit. No core orientation was recorded.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond core recovery was assessed by comparison of the interval of core presented in the core tray against the driller's core blocks. Analysis showed that more than 93% of core intervals had 90% or better recoveries, with 96% of core having recoveries of 80% or better. Core recoveries in the uppermost unit, the overburden, were very poor and many losses occurred. Recoveries in this domain ranged between 0 -60%. These reduced recoveries were not associated with mineralization and as such are not considered material.
	Measures taken to maximize sample recovery and ensure representative nature of the samples.	Diamond drilling utilized triple-tube techniques and constantly monitored drilling fluids in order to assist with maximising recoveries. PVC tubing, HW 4" pipe and HQ rods were used in the uppermost unit, with the tri-salt mud balance constantly monitored for viscosity and density to reduce core dissolution whilst drilling. Core depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers. Recovered core was measured and compared against driller's blocks. Sections of two resource holes were drilled using diesel as drilling fluid, to ensure maximum recovery of the most highly soluble salts in the geological sequence (especially in the Bischofite member). An additional four drill holes were drilled for QAQC purposes in late 2014, with diesel fuel used as the primary drilling fluid.
	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.	Assessments on the effect of low recoveries were completed for the diamond drilling and found that there was not likely to be any material impact or bias on the reported assay results as a result of the reduced recoveries. The MBED unit had recoveries generally in excess of 97%, with one sample with 67% and another with 85% recovery. The URST unit had recoveries greater than 80% for 85% of samples, with 5% having recoveries less than 50%.

For personal use only



For personal use only

Criteria	JORC Code Explanation	Commentary
Logging	<p>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.</p>	<p>Diamond core was geologically logged using predefined lithological, mineralogical and physical characteristics (such as colour, weathering, fabric) logging codes. In addition, structural measurements of major features were collected, such as bedding to core angle for laminations, bedding, veining or fracture structures. The logging was completed at the company core shed by the responsible geologist and checked by the Senior Geologist once completed.</p> <p>All of the drilling was logged onto paper and has recently (late 2014) been transferred to a digital form and loaded into a Microsoft Access drill hole database. The latest geotechnical and QAQC-twinning drill hole logging was completed directly onto a laptop in the field using Microsoft Excel spreadsheets with drop-down boxes to restrict values entered. Logging information was reviewed by the senior geologist prior to final load into the database.</p> <p>All core trays were photographed. Given the nature of the mineralization at Colluli (crystalline salts) the core was not photographed wet, unless photos were taken on-site as soon as the core was removed from the barrel after drilling.</p> <p>Geotechnical logging of all diamond core consisted of recording core recovery, RQDs, amount of dissolution and core state (i.e. whole, broken). In addition, in late 2014, twelve diamond holes (GT- A1 – GT-A14) were drilled specifically for geotechnical purposes and were logged by both AMC geotechnical staff and then Danakali geologists after initial training. Samples from these were also selected for destructive testing. Four of these holes (GT-A6, GT-A8, GT-A11 and GT-A12) were planned to be assayed as twinned holes for comparison with the existing Colluli drill hole database.</p> <p>45 holes also had downhole geophysical logging completed for natural gamma, hole diameter, neutron log, sonic log, temperature and conductivity (calibrated to 25^oC). 22 of these holes also had downhole density logging recorded.</p>
	<p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</p>	<p>Logging was both qualitative and quantitative in nature, with general lithology information recorded as qualitative and most mineralization records and geotechnical records being quantitative. Core photos were collected for all diamond drilling.</p>
	<p>The total length and percentage of the relevant intersections logged.</p>	<p>All recovered intervals were geologically logged, apart from four drill holes (COL-005, COL-019B, COL-020, COL-042) that had no potash intersections and one hole (COL-063A) that was abandoned at 54 m downhole due to poor core recovery.</p>



Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Diamond core was cut in half using a diesel powered core saw. No water was used for lubrication or dust suppression as core dissolution would have occurred. The material being cut is relatively soft and this has not proved to be an issue. Sample intervals were marked on the core by the responsible geologist considering lithological and structural features. Core selected for duplicate analysis was further cut as quartered core with both quarters submitted individually for analysis.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No non-core samples were taken.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation techniques employed for the diamond core samples follow standard potash industry best practice. To avoid dissolution by reacting with the water in the air, all samples were double-bagged at the drill rig, opened for logging and re-bagged immediately and heat sealed prior to transport to the laboratory. Samples were crushed by hammer, within the plastic liner, to a grain size of approximately 1cm or less. The entire sample was then transferred to a PVC vessel and homogenized by shaking. Approximately one third of the homogenized sample was then taken and crushed inside a polythene bag by hammer to a grain size of 5mm or less. About 100g of this homogenized sample was then pulped by disk swing-mill for 120 seconds. Three grams of this pulp was prepared for XRD analysis and ten grams dissolved in 990ml distilled water and agitated for 24 hours prior to ion chromatography. The insoluble portion remaining from the dissolution was removed by a membrane filter (0.45 micron) and weighed.



Criteria	JORC Code Explanation	Commentary
	<p>Quality control procedures adopted for all sub-sampling stages to maximize representivity of samples.</p>	<p>For the initial drilling at Colluli, to hole COL-099, field QAQC procedures included the field insertion of “blanks” taken from the Upper Rock salt domain, as the main minerals of economic interest were KCl and MgSO₄. These were inserted into the sample stream at a rate of approximately 1 in 15 samples. Coarse field duplicates were taken by quarter cutting the core at a rate of approximately 1 in 20 samples. For the updated Mineral Resource estimate of the rock salt, reference materials (standards) were added to the sample stream by Danakali to ensure quality control, however the quality varied with only two being certified standards (POT003 and POT004, internal standards from SRC). Pure NaCl from Rowe Scientific Laboratories was also used as a reference material; however, its certification was not clear.</p> <p>The primary and secondary assay laboratories, also periodically inserted “blanks” in the form of clean distilled water and assayed their own internal standards.</p> <p>Pulp duplicates were taken and re-assayed by TUC, using a mixture of atomic absorption spectroscopy and ion chromatography. Duplicates were taken at a rate of approximately one in 40 samples.</p>
	<p>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.</p>	<p>Field duplicates from core samples generally showed an excellent correlation between original and duplicates, however other measures of spread such as Half Absolute Relative Difference (HARD) showed some variance in some of the minor elements such as Ca and SO₄.</p> <p>Pulp repeat samples from the secondary laboratories also showed excellent correlation between original and repeat samples.</p> <p>Standards were compared well to their expected results, with only minor differences in a few samples. These were generally in the minor components of the URST unit and the MBED unit.</p>
	<p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	<p>Current industry standard sampling is used and deemed appropriate. All of the salts are coarse crystalline and are dissolved completely prior to analysis.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
Quality of assay data and laboratory tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p>	<p>Primary assaying for the updated estimate was undertaken by K-Utec laboratories in Germany. K-Utec uses a combination of flame spectrometry, atomic absorption spectroscopy and ion chromatography for analysis of potash salts.</p> <p>Secondary assaying for the diamond core was completed by TUC using its proprietary method for ion chromatography. TUC is recognized internationally for its work in potash and has a good reputation. Its methods are however, confidential and AMC has no details of the exact process used. AMC requested Danakali to drill four twinned drill holes to test the reliability of the TUC assaying. These were to be assayed at K-Utec and pulp repeats tested at both TUC and SRC in Canada.</p>
	<p>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.</p>	<p>Downhole geophysical readings were taken for 45 of the Danakali drilled diamond holes. Data collected included hole diameter, neutron logs, conductivity, temperature, natural gamma, sonic logs and density. Only 22 holes had density readings taken, due to breakages of the gamma-gamma probe. The work was performed by Abitibi Terratec using the following probes suspended from a 4-conductor cable:</p> <ul style="list-style-type: none"> • Electromind T-Cd-GR. • Electromind 3-arm caliper. • RG Neutron-neutron probe. • RG Gamma-gamma probe. • ALT Sonic-Full Wave probe. <p>Density measurements were validated by taking readings while the probe was in an aluminium block and in a container of water. There were three readings taken in each material.</p> <p>As far as AMC is aware, calibration was undertaken for the density and neutron probes prior to delivery to site for the caliper probe whilst on-site. A polynomial curve function ($y=38.9520+0.176803x-1.53928 \times 10^{-5}x^2$) was applied to the raw caliper data to produce the final hole width readings.</p>
	<p>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.</p>	<p>QAQC results from both the primary and secondary assay laboratories show no material issues with the main variables of interest for the updated URST and MBED grade estimates.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Diamond drill core photographs have been reviewed for the recorded sample intervals. AMC Senior Geologist, John Tyrrell, visited the Colluli project site and the Danakali head office and core shed in Eritrea in October 2014. Whilst there he viewed the drill hole collars on-site and the remaining core (full, half or quarter) at the core shed in Asmara. Selected sections of drill holes were examined in detail in conjunction with the geological logging and assaying.
	The use of twinned holes.	AMC requested four drill holes be twinned for the purpose of testing the veracity of the logging and assaying at Colluli. The holes were sampled using the same intervals (where possible) to the original drill holes in order to compare the logging and assaying as directly as possible. The results for the twin hole assaying and QAQC programme show no material issues and excellent repeatability of assaying and geological logging.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All primary geological data (prior to 2014) was collected using paper logs and transferred into Excel spreadsheets. This was checked by the Chief Geologist for data entry error. Assay results were returned from the laboratories as electronic data (Excel spreadsheets and PDF files). Geophysical data was recorded as log ASCII standard (LAS) files and survey and collar location data was stored as spreadsheet files. In late 2014, all of the primary data was collated and imported into a Microsoft Access relational database, keyed on borehole identifiers and assay sample numbers. The data was verified as it was entered and checked by the Danakali Chief Geologist.



Criteria	JORC Code Explanation	Commentary
	Discuss any adjustment to assay data.	<p>The primary and secondary assay laboratories reported results from the assaying process as weight % values of the assayed cations (Mg^{2+}, Ca^{2+}, Na^+, K^+) and anions (Cl^-, SO_4^{2-}). KCl and K_2O values were also reported. The assays for K were multiplied by a factor of 1.90668 to report KCl and multiplied by a factor of 0.6317 to report K_2O.</p> <p>The raw assay values were also converted to mineral weight percentages using a “Normative Mineralogy” conversion scheme. This scheme relies upon the XRD results for the mineralogy of every sample. This was a two step process which is listed below:</p> <p>Step 1 - Combine cations and anions to simple salts according to the following scheme:</p> <ul style="list-style-type: none"> • Combine with Cl, in the following order: Na, K, Mg, Ca. • Combine with SO_4 in the following order: Ca, Mg, K, Na. • Based on experience with potash deposits, the analyses should be either $MgCl_2$ or K_2SO_4 normative, meaning if $CaCl_2$ or Na_2SO_4 results from these combinations, the analysis is suspect. <p>Step 2 - Combine the simple salts to salt mineralogy according to the following simplified scheme:</p> <ul style="list-style-type: none"> • All NaCl is Halite. • If $MgCl_2$ is present, it is combined 1:1 with KCl to form Carnallite. • If $MgCl_2 > KCl$, remaining $MgCl_2$ to Bischofite. • If K_2SO_4 is present, combine with $CaSO_4$ and $MgSO_4$ to form Polyhalite. • If $KCl > MgCl_2$ and $MgSO_4$ available, combine remaining KCl 1:1 to Kainite. • If remaining KCl $> MgSO_4$, remaining KCl after Kainite to Sylvite, otherwise remaining $MgSO_4$ to Kieserite and; • Remaining $CaSO_4$ to Anhydrite. <p>The resulting salt percentages are combined with the measured insoluble component and should sum to 100% (+3 to -5%). As other potash minerals occur in nature and are not taken into account, this scheme is at best indicative and the results are checked against the logging and core.</p> <p>The results are also checked to ensure over estimation of Kainite content and under estimation of the Sylvite and Kieserite does not occur.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
Location of data points	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.	<p>All of the drill hole collar positions were initially positioned using hand-held GPS. In September 2012, the state run Eritrean Mapping and Information Center (EMIC) completed a program to position five survey control points at and around the project site. These were positioned using Leica system 1200 differential global positioning system (DGPS) equipment with an accuracy of +/-5mm.</p> <p>All of the collar positions at site are now surveyed using DGPS referencing the control point nearest to Colluli, BM-1 (1594828.511 mE, 644029.0546 mN, -101.3126 mRL, UTM). The collars are surveyed in campaigns by an external contractor after the holes are drilled.</p>
	Specification of the grid system used.	The grid projection used for Colluli is WGS84, UTM37N. All reported coordinates are referenced to this grid.
	Quality and adequacy of topographic control.	Topography data for Colluli has been generated from a series of contours taken from data provided by the NASA Shuttle Radar Topography Mission in February 2000. A wireframe was produced from the 2m contour data. AMC believes that the topography data is adequate for the project at this stage.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	<p>Drilling at Colluli has been focused on two deposits, Area A and Area B. The drill hole spacing at Area A is approximately 500 m x 500 m in easting and northing in the better drilled parts of the deposit, increasing to 1000m x 1000m at the peripheries. Drilling in Area A has been closed even further in its northern part as a result of the twinned hole and geotechnical drilling programmes, with drill spacing down to 200 m to 300 m apart (except for the twinned holes at less than 10 m spacing from their original target holes). The grid pattern is aligned at approximately 050 degrees magnetic. There is a cruciform pattern of close-spaced drilling in the centre of the deposit designed to check short scale variability, which has a spacing of nominal 50m.</p> <p>At Area B, the drill hole spacing is a nominal 650 m – 700 m in easting by 1000 m in northing, with the grid direction approximately east-west. The spacing increases to approximately 1000 m in easting and northing at the peripheries.</p>
	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.	The degree of geological and grade continuity demonstrated by the data density is sufficient to support the definition of Mineral Resources and the associated classifications applied to the Mineral Resource estimate as defined under the 2012 JORC Code. Variography studies have shown very little variance in the data for most of the estimated variables and ranges in the order of several kilometres.

For personal use only



Criteria	JORC Code Explanation	Commentary
	Whether sample compositing has been applied.	No compositing was applied to the exploration results prior to assaying. All samples were composited to common lengths after being assayed, prior to their use in the Mineral Resource estimate.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The mineralization is interpreted to be very shallow dipping, roughly planar with stratiform bedding striking approximately east-west and dipping at less than 0.5 degrees to the southwest in Area A and less than 1.0 degrees to the southwest in Area B. The diamond drilling is exclusively conducted at -90 degrees, producing drill hole intersections with the mineralization at effectively 90 degrees.
	If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The orientation of drilling with respect to mineralization is not expected to introduce any sampling bias. Drill holes intersect the rock units at approximately 90 degrees.
Sample security	The measures taken to ensure sample security.	Samples were collected onsite under supervision of a responsible geologist and any potential soluble samples were sealed with taped double bags prior to taking from the rig site. The samples were then stored in lidded core trays and closed with straps before being transported by road to the company core shed in Asmara. Only certified company drivers were allowed to transport the core. Once logging was completed the samples for assay were re-bagged and put into double plastic bags, which were heat sealed with the correct sample number on the inner bag. The samples were then placed into heavy plastic drums, which were sealed ready for transport overseas for assaying. As the samples were travelling overseas for assay, the drums may have been opened by customs both in Eritrea and at their destination. AMC does not believe this to be an issue, as individual samples are in heat sealed bags and are not easily tampered with. Despatch sheets were compared against received samples and any discrepancies reported and corrected.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	A review of the sampling techniques and data was completed by Ercosplan in 2012 and by Snowden in 2013. Neither found any material error. AMC also reviewed the data in the course of preparing the initial Colluli Mineral Resource estimate and the update in 2015. A review of the method used by the secondary assay laboratory, TUC, was not available due to the proprietary nature of its potash assaying process. AMC concludes that the data integrity and consistency of the drill hole database shows sufficient quality to support resource estimation.



Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	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.	The Colluli Project is located wholly within an exploration concession granted by the State of Eritrea in 2009, which encompassed an area of approximately 857 km ² , bordered to the West by the Ethiopian state border (as defined by the Eritrea-Ethiopia Boundary Commission in 2002). In 2012, in accordance with the Eritrean Mining Proclamation, the Colluli Exploration license has been extended and the tenement area has been reduced from the initial 857 km ² to the current 200 km ² . Danakali owns a 50% interest in the project, with the remaining 50% owned by the state of Eritrea. AMC is unaware of any other joint venture, native title, environmental, national park or other ownership agreements on the concession area.
	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.	The concession area is in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous exploration in the wider Dallol region of the Danakil Depression has been undertaken since the early 1900's, with extensive drilling (approx. 300 holes), geophysical surveys, geological and topographic mapping and hydrogeological works undertaken from 1959 to 1968. At the concession area proper, previous exploration was undertaken by a number of parties since 1969. The first drilling at Colluli was undertaken by the Ethiopian Potash Company Inc. (EPC), who carried out exploration drilling and chemical analyses for potash in five sub-areas in the border region Eritrea-Ethiopia (N of Dallol) up to the Buri Peninsula (S of Massawa). The sub-area named "Colluli" at the border region between Eritrea and Ethiopia was reported to contain two distinct zones of potassium and magnesium minerals in a thick section of Halite in the western part of the sub-area (EPC Engineering Division Mine, 1984). Approximately eight other companies have reported mineralization considered (by them) mineable in the area (all now in Ethiopia), but none at the actual Colluli Project site until STB started exploration on the concession in 2010.



Criteria	JORC Code Explanation	Commentary
Geology	Deposit type, geological setting and style of mineralization.	<p>The Colluli Project area is located in the Danakil Depression, which strikes NW-SE with an extension of more than 200km from Lake Bada in the NW to Lake Acori in the SE. The structure of the Danakil Depression widens to the South, beginning with 10km width in the North and widening up to 70km in the South. The northern part is the deepest and has elevations as low as 50m to 128m below sea level. The depression is flanked by the Danakil Alps to the northeast and the Ethiopian Highlands to the southwest. These consist of Precambrian gneisses and phyllites as well as Jurassic sediments, Palaeozoic granites and intruded Neogene basalts.</p> <p>Locally at Colluli the landscape is dominated by flat lying sediments and is approximately 120 metres below sea level. The mineralization in the project area is bound to the northeast by Pliocene to recent anhydrite/ gypsum, halite and clays. The mineralization is hosted by a potash sequence overlain by clastic sediments comprised of sands and silts. Underlying the clastic sequence is a sequence of salts consisting of a discrete sub-members including the "Upper and Lower Rock Salt", "Sylvinite", "Upper and Lower Carnallite", "Bischofite", "Kainitite" and finally the "Black Clay" at the base of the drilled sequence.</p> <p>The bedding is very shallow dipping (less than 0.5 degrees) to the southwest and bound by faults to the northeast and southwest. These faults are steep, with interpreted throws of approximately 20m. A major fault with a throw of approximately 50 to 100m separates the mineralized Area A from Area B. The interpreted fault line track along the course of the Zariga River system.</p> <p>The mineralization is in the form of coarse crystalline salts, predominantly in the form of sylvinite, carnallite, kainitite and rock salt, containing the mineral types Sylvite (KCl), Carnallite (KMgCl₃·6(H₂O)) and Kainite (MgSO₄·KCl·3(H₂O)), with common interbedded halite (NaCl) and kieserite (MgSO₄·H₂O).</p>
Drill hole Information	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: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length.	No exploration results have been reported in this release, therefore there is no drill hole information to report. This section is not relevant to reporting Mineral Resources.

For personal use only



Criteria	JORC Code Explanation	Commentary
Data aggregation methods	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.	No exploration results have been reported in this release, therefore there is no drill hole intercepts to report. This section is not relevant to reporting Mineral Resources.
	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.	No exploration results have been reported in this release, therefore there is no drill hole intercepts to report. This section is not relevant to reporting Mineral Resources.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No exploration results have been reported in this release, therefore there is no drill hole intercepts to report. This section is not relevant to reporting Mineral Resources.
Relationship between mineralization widths and intercept lengths	If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.	No exploration results have been reported in this release. This section is not relevant to reporting Mineral Resources.
Diagrams	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.	No exploration results have been reported in this release. This section is not relevant to reporting Mineral Resources.
Balanced reporting	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.	No exploration results have been reported in this release. This section is not relevant to reporting Mineral Resources.
Other substantive exploration data	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, geotechnical and rock characteristics; potential deleterious or contaminating substances.	No exploration results have been reported in this release. This section is not relevant to reporting Mineral Resources.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	The decision as to the necessity for further exploration at Colluli is pending completion of mining technical studies on the currently available resource.



Criteria	JORC Code Explanation	Commentary
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	The decision as to the necessity for further exploration at Colluli is pending completion of mining technical studies on the currently available resource.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	All of the drilling was logged onto paper and has recently (late 2014) been transferred to a digital form and loaded into a Microsoft Access drill hole database. The latest geotechnical and QAQC twinned drill hole logging was completed directly onto a laptop in the field using Microsoft Excel spreadsheets with drop-down boxes to restrict values entered. Logging information was reviewed by the senior geologist prior to final load into the database. The data is now stored in a single Microsoft Access database for the Colluli project.



Criteria	JORC Code Explanation	Commentary
	Data validation procedures used.	<p>Prior to 2014, the data validation was initially completed by the responsible geologist logging the core and marking up the drill hole for assaying. The paper logs were transferred to Excel spreadsheets and compared with the originals for error. Assay dispatch sheets were compared with the record of samples received by the assay laboratories. All of the electronic files were stored in directories for each data type and labelled by drill hole identifier, allowing for easy recognition of missing data.</p> <p>Since late 2014, all of the drill hole data has been collected and input into a Microsoft Access database, keyed on drill hole identifier (BHID) and assay sample number. All of the data was verified at the time of import to Access and any error was corrected.</p> <p>Both internal (Danakali) and external (Ercosplan, Snowden and AMC) validations were/are completed when data was loaded into spatial software for geological interpretation and resource estimation. AMC checked the data for overlapping intervals, missing samples, FROM values greater than TO values, missing stratigraphy or rock type codes, downhole survey deviations of $\pm 10^\circ$ in azimuth and $\pm 5^\circ$ in dip, assay values greater than or less than expected values and several other possible error types when loading the data into CAE Studio 3 (Datamine) software. Furthermore, each assay record was examined and mineral resource intervals were picked by the Competent Person.</p> <p>QAQC data and reports are normally also checked. Ercosplan and Snowden both reported briefly on the available QAQC data for Colluli and AMC instigated a drilling program of four twinned drill holes for geological and assay data validation purposes. AMC produced a QAQC report on the results of this program and has continued to monitor the QAQC results from subsequent assaying programs.</p>
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	<p>AMC Senior Geologist John Tyrrell visited the Colluli project site in late 2014 and inspected the Area A and Area B deposits. Whilst on site he witnessed the drilling of validation drill holes and their geological logging and sampling preparation for assaying.</p> <p>The geology, sampling, sample preparation and transport, data collection and storage procedures were all reviewed whilst at the project site and at the Danakali office and core shed in Asmara. AMC used this knowledge to aid in the preparation of the Mineral Resource Estimate.</p>
	If no site visits have been undertaken indicate why this is the case.	



Criteria	JORC Code Explanation	Commentary
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	<p>The Colluli potash mineralization is one of only a few shallow potash deposits documented globally. Detailed mapping, geophysical (including gravity and very localised induced polarization, electrical resistivity and seismic refraction studies) and mineralogical studies have been completed by Danakali geologists and contracted specialists between 2011 and 2014. These data and the relatively closely-spaced (for potash) drilling has led to a good understanding of the mineralization controls.</p> <p>The mineralization is hosted within very shallow dipping bedded evaporite units (potash salts and halite) which are really extensive and continuous. There is an obvious change in the sequence at the edges of the mineralization, explained by faulting in the order of 20m or so. Ercosplan had interpreted internal faulting in its 2012 report and model, but the vertical offsets are very small and thus have not been included in the current interpretation for the resource model as they would unnecessarily complicate the stratigraphy. Over the spacing of the drill holes, the difference in RL is negligible and they do not appear to materially affect the distribution of the potash units.</p> <p>There is no obvious alteration in the mineralized units.</p>
	Nature of the data used and of any assumptions made.	No assumptions are made.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	Neither alternative interpretations nor estimations were undertaken by AMC.



For personal use only

Criteria	JORC Code Explanation	Commentary																																							
	<p>The use of geology in guiding and controlling Mineral Resource estimation.</p>	<p>Geological observation has underpinned the resource estimation and geological model. Rock type and geochemistry (assayed anion and cation values as well as normative mineralogy) were used to define the footwall and hanging wall boundaries for each unit. The geological model was developed as an iterative process of checking against logging and photography as needed during interpretation.</p> <p>The extents of the geological model were constrained by drilling. Geological boundaries had only minimal extrapolation beyond drilling in line with the resource classifications of indicated or inferred.</p> <p>The domain coding for the Colluli project (Areas A and B) is as follows:</p> <table border="1" data-bbox="850 846 1442 1279"> <thead> <tr> <th>Lithology/Member</th> <th>Rock Code</th> <th>Numeric Domain Code</th> </tr> </thead> <tbody> <tr><td>Overburden</td><td>OVBD</td><td>1000</td></tr> <tr><td>Upper Rock Salt</td><td>URST</td><td>2000</td></tr> <tr><td>Marker Beds</td><td>MBED</td><td>3000</td></tr> <tr><td>Upper Sylvinite</td><td>USYL</td><td>4100</td></tr> <tr><td>Middle Sylvinite (low grade)</td><td>MSYL</td><td>4200</td></tr> <tr><td>Lower Sylvinite</td><td>LSYL</td><td>4300</td></tr> <tr><td>Upper Carnallite</td><td>UCRT</td><td>5000</td></tr> <tr><td>Bischofite</td><td>BSFT</td><td>6000</td></tr> <tr><td>Lower Carnallite</td><td>LCRT</td><td>7000</td></tr> <tr><td>Kainite</td><td>KANT</td><td>8000</td></tr> <tr><td>Lower Rock Salt</td><td>LRST</td><td>9000</td></tr> <tr><td>Clay</td><td>CLAY</td><td>10000</td></tr> </tbody> </table> <p>The Mineral Resource estimate for potassium salts which includes kieserite includes Domain codes 4100, 4200, 4300, 5000, 7000 and 8000. The rock salt Mineral Resource estimate focussed upon Domain Codes 2000 and 3000 only.</p>	Lithology/Member	Rock Code	Numeric Domain Code	Overburden	OVBD	1000	Upper Rock Salt	URST	2000	Marker Beds	MBED	3000	Upper Sylvinite	USYL	4100	Middle Sylvinite (low grade)	MSYL	4200	Lower Sylvinite	LSYL	4300	Upper Carnallite	UCRT	5000	Bischofite	BSFT	6000	Lower Carnallite	LCRT	7000	Kainite	KANT	8000	Lower Rock Salt	LRST	9000	Clay	CLAY	10000
Lithology/Member	Rock Code	Numeric Domain Code																																							
Overburden	OVBD	1000																																							
Upper Rock Salt	URST	2000																																							
Marker Beds	MBED	3000																																							
Upper Sylvinite	USYL	4100																																							
Middle Sylvinite (low grade)	MSYL	4200																																							
Lower Sylvinite	LSYL	4300																																							
Upper Carnallite	UCRT	5000																																							
Bischofite	BSFT	6000																																							
Lower Carnallite	LCRT	7000																																							
Kainite	KANT	8000																																							
Lower Rock Salt	LRST	9000																																							
Clay	CLAY	10000																																							
	<p>The factors affecting continuity both of grade and geology.</p>	<p>Key factors that are likely to affect the continuity of grade are:</p> <ul style="list-style-type: none"> The down-hole variability of the geological units; the potash units are commonly inter-bedded with other halite and evaporite salts and occasional insoluble materials (clay, quartz). The variability at deposit scale due to complete or partial non-deposition, dissolution of erosion of a salt layer. Internal faulting at a scale that is too small to be defined at the current drill spacing. 																																							



Criteria	JORC Code Explanation	Commentary
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The deposit at Area A strikes approximately 7 km and is approximately triangular being approximately 4 km at its widest point. The mineralized units dip less than one degree towards 170 – 180 degrees azimuth. The mineralized sequence for the Upper Rock Salt ranges in thickness from 0.5 m to 35 m, averaging 10 m and is approximately 10 m to 20 m below surface. The Marker Beds are much thinner, ranging from less than 0.5 m to 6.0 m in thickness, averaging approximately 1.5 m.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.	<p>Grade estimation was completed using ordinary kriging (OK) for the Mineral Resource estimate. Datamine software was used to estimate grades for Na, Cl, K, Mg, Ca, S, SO₄, KCl, K₂O, As, Cu, Pb, Sylvite, Halite, Anhydrite and Insolubles using parameters derived from statistical and variographic studies. The majority of the variables estimated have coefficients of variance of less than 1.0. Average grades were assigned for Cd and Hg, as all of the assays for these elements were below their respective levels of detection.</p> <p>Drill hole spacing varies from approximately 300 m x 300 m to 500 m x 500 m at Area A. Drill hole sample data was flagged with numeric domain codes unique to each mineralization domain. Sample data was composited to 1 m downhole length for the MBED unit and 2 m downhole length for the URST unit, with the resulting composite length adjusted to retain residuals.</p> <p>The influence of extreme sample outliers was reduced by top-cutting where required. The top-cut levels for each mineralization domain were determined using a combination of grade histograms, log probability plots, and decile and percentile analysis.</p> <p>Grade was estimated into two mineralization domains, URST and MBED. The URST unit had downhole variography performed for all estimated variables and directional variography performed where the number of samples permitted for Na, Cl, K, KCl and SO₄. The MBED unit had no variography performed. All variograms were scaled to the variance of the individual variables in the domain. Grade continuity varied from several metres in the vertical direction, to kilometres in the along and across-strike directions. All estimated variables in the mineralization domains had major search axis lengths of approximately 2/3 the longest variogram range, with the other search axes scaled according to their corresponding variograms. The vertical (minor) search axis ranges were multiplied by a factor of ten, to a minimum 20 m, due to the proportionally extreme lengths of the major and semi-major ranges.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	<p>Prior to 2015, a Mineral Resource estimate was completed by German potash expert company Ercosplan and was reported by Danakali in April 2012 as compliant with Canadian National Instrument 43-101 (NI 43-101) and JORC 2004 Guidelines. The estimate used a polygonal-type estimation process, the "Radius of Influence" method, which uses cylinders of equal grade and thickness influence to arrive at a weighted average derived tonnage in each resource and uses a cylindrical classification surrounding each drill hole.</p> <p>The 2015 Mineral Resource estimate was a completely new block based model, using an additional 47 drill holes (drilled by Danakali in 2012) and reinterpreted wireframes to define a volume, with grade estimated by OK based on variographic studies. Resource classification takes into account grade and geological continuity between drill holes rather than within a set radius and/or volume surrounding them.</p> <p>Neither of the two previous estimates reported tonnes and grade for the URST or MBED units and the 2015 rock salt estimate update is the maiden estimate for these domains.</p>
	The assumptions made regarding recovery of by-products.	No assumptions were made regarding recovery of by-products.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterization).	Estimates were also undertaken for K, Mg, Ca, SO ₄ , Sylvite, Anhydrite, S, Insolubles, As, Pb and Cu.



Criteria	JORC Code Explanation	Commentary
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	<p>The Colluli block models use a parent cell size of 500 m in northing, 500 m in easting and 2 m in RL. This corresponds approximately to a distance slightly smaller than the widest drill spacing at Area A. Sub-celling was allowed to occur down to 50 m in easting, 50 m in northing and 0.02 m in RL for all domains. After completion of the volume model it was optimized to reduce the sub-cells whilst keeping the domain codes intact. This allowed for accurate volume representation of the interpretation whilst keeping the overall model size down.</p> <p>Grade was estimated into parent cells, with all sub-cells receiving the same grade as their relevant parent cell.</p> <p>Discretization was set to 10 by 10 by 2 in X, Y and Z respectively for all domains.</p> <p>Search ellipse dimensions for each domain were based on variography. Three search passes were used for each estimate in each domain. The first search allowed a minimum of 8 composites and a maximum of 15 composites. For the second pass, the first pass search ranges were expanded by 2.5 times. A minimum of 5 composites and a maximum of 20 composites were allowed. The third pass search ellipse dimensions were extended by 4 times. A minimum of 2 composites and a maximum of 25 composites were allowed for this pass. A limit of 3 composites from a single drill hole was permitted.</p>
	Any assumptions behind modelling of selective mining units.	Upon direction of Danakali it was assumed for modelling purposes that the deposit would be mined in its entirety by the open pit method so no selective mining units were assumed in this estimate. Model block sizes were determined primarily by drill hole spacing and statistical analysis of the effect of changing block sizes on the final estimates.
	Any assumptions about correlation between variables.	All elements within a domain used the same sample selection routine for block grade estimation. No co-kriging was performed at Colluli.
	Description of how the geological interpretation was used to control the resource estimates.	The geological interpretation is used to define the mineralization domains. All of the mineralization domains are used as hard boundaries to select sample populations for variography and grade estimation.



Criteria	JORC Code Explanation	Commentary
	Discussion of basis for using or not using grade cutting or capping.	Statistical analysis showed that the domains included outlier values that required top-cut values to be applied. Top-cut values are chosen based on the statistical parameters for that element in each domain and a visual check of the location of any possible outlier values. Usually the log probability plots and histogram plots are used to determine the final value used. The top-cuts generally only affect one or two samples. In some cases, the percentage of the weighted average mass of mineralized material was cut, due to extreme high value in relatively poorly sampled domains. AMC generally chose top-cuts that had the most effect on reducing the CV, whilst maintaining the weighted average mass of material (the sum of the grades times the composite lengths per domain) at a maximum. .
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Validation of the block model consisted of: <ul style="list-style-type: none"> • Volumetric comparison of the mineralization wireframes to the block model volumes. • Visual comparison of estimated grades against composite grades. • Comparison of block model grades to the input data using swathe plots. As no mining has taken place at Colluli to date, there is no reconciliation data available.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	All mineralization tonnages are estimated on a dry basis. The moisture content in mineralization is considered low, however there is a moisture content of up to 40% in the overlying overburden unit.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	No grade cut-off has been used to report the Mineral Resource for the potassium salts. For interpretation and modelling a zero NaCl grade cut off has been used. A 95% NaCl (Na_wt% + Cl_wt%) grade cut off has been used for reporting of the rock salt Mineral Resource at Colluli, with an additional constraint of less than 2.5% Ca plus SO ₄ . Consideration of mining, metallurgical and pricing assumptions, while not rigorous, suggest that the currently interpreted mineralized material has a reasonable prospect for eventual economic extraction at these cut off grades.

For personal use only



Criteria	JORC Code Explanation	Commentary
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	AMC Consultants has prepared mining reports to support the Definitive Feasibility Study (DFS) for Colluli on behalf of Danakali. The mining method will utilise conventional open pit using mechanized mining techniques such as continuous surface mining.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<p>Metallurgical studies have been completed to support the DFS work for the production of sulphate of potash. The proposed metallurgical process is well understood and appropriate for the deposit. The processing method is the most commonly used, low cost process for the production of potassium sulphate via the addition of potassium chloride (sylvite) with kainite from the kainite. Bench scale metallurgical test work was completed to determine;</p> <ul style="list-style-type: none">• Chemical and mineral analysis of the samples• Sylvinite characteristics (clay content, liberation, flotation ability)• Kainite characteristics (clay content, liberation, flotation ability)• Decomposition rates and retention times• Feed to brine ratios• Precipitate sizing• Pond evaporation tests• Alternate flotation methods <p>Pilot plant tests produced SOP of 98% purity and chloride levels less than 0.1%.</p> <p>Kieserite liberation characteristics from the carnallite ore and the flotation tailings have been assessed. Test work demonstrates kieserite will report to the process plant tailings stream. Recent metallurgical review has identified a potential process to recover kieserite from the Colluli tailings based on liberation and flotation to recover the material.</p>



Criteria	JORC Code Explanation	Commentary
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfield project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	<p>Environmental studies have been completed as part of the DFS work.</p> <p>Social and Environment Impact Assessment (SEIA) documentation has been prepared by the consulting company MBS Environmental (MBS) and DNK.</p> <ul style="list-style-type: none">• The status of the SEIA is:<ul style="list-style-type: none">- Project classified under the (Eritrean) National Environmental Assessment Procedures and Guidelines as a “Category A” development meaning it requires a full SEIA.- The SEIA and associated management plans have been completed and submitted to the Ministry of Energy and Mines- All environmental and socioeconomic baseline studies have been completed and have been reviewed by the Department of Environment (DOE).- There are believed to be no environmental related issues that do not have a reasonable likelihood of being resolved.- Monitoring and evaluation of the project will be undertaken for operations.• Eritrea is signatory to a number of international agreements and treaties which have been taken into consideration in the planning and development of the project.• Mine waste material characterisation has been completed. All mine waste demonstrated low potential for acid mine drainage. Water leachate analysis showed very low levels of environmentally significant metals and metalloids.• Physical and chemical characterisation of process waste has been completed. Process wastes are not anticipated to have any acid mine drainage potential or to generate environmentally significant levels of leachable trace metals and metalloids.• None of the infrastructure for the project will be located on agricultural or residential land.



For personal use only

Criteria	JORC Code Explanation	Commentary																																						
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	<p>Bulk density has been estimated from density measurements from geophysical probes as well as direct core measurements.</p> <p>The geophysical density measurements were collected as down-hole LAS survey data (completed by Abitibi-Terratec). The 0.01m readings were composited to 1m intervals for use in the estimate. Top and bottom cutting of outlier values was performed as required.</p> <p>As part of the AMC geotechnical testing program in 2014, 64 direct core measurements were taken by SRC. Danakali performed an additional 52 direct core measurements for density on samples from the URST and MBED units. Selected intervals of cylindrical core were measured for length, as well as with calipers along their length for an average diameter. The volume of the core derived by this method was combined with the weight of the core sample to generate a density measurement for each interval.</p> <p>These measurements and those taken by SRC have been incorporated into the table below.</p>																																						
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	<p>The water immersion method is not appropriate for potash deposits, owing to their solubility and collecting perfectly cylindrical core is also difficult.</p> <p>The down-hole geophysical collection of density data is most appropriate for Colluli, with adequate validation and porosity factors applied.</p>																																						
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	<p>The bulk density values applied for the Mineral Resource Estimate at Colluli are:</p> <table border="1"> <thead> <tr> <th>LITHOLOGY</th> <th>DOMAIN</th> <th>MEAN DENSITY</th> </tr> </thead> <tbody> <tr> <td>OVBD</td> <td>1000</td> <td>1.4</td> </tr> <tr> <td>URST</td> <td>2000</td> <td>2.11</td> </tr> <tr> <td>MBED</td> <td>3000</td> <td>2.25</td> </tr> <tr> <td>USYL</td> <td>4100</td> <td>2.15</td> </tr> <tr> <td>MSYL</td> <td>4200</td> <td>2.22</td> </tr> <tr> <td>LSYL</td> <td>4300</td> <td>2.15</td> </tr> <tr> <td>UCRT</td> <td>5000</td> <td>2.12</td> </tr> <tr> <td>BSFT</td> <td>6000</td> <td>2.09</td> </tr> <tr> <td>LCRT</td> <td>7000</td> <td>2.07</td> </tr> <tr> <td>KANT</td> <td>8000</td> <td>2.13</td> </tr> <tr> <td>LRST</td> <td>9000</td> <td>2.16</td> </tr> <tr> <td>CLAY</td> <td>10000</td> <td>2.19</td> </tr> </tbody> </table> <p>All values are in t/m³.</p>	LITHOLOGY	DOMAIN	MEAN DENSITY	OVBD	1000	1.4	URST	2000	2.11	MBED	3000	2.25	USYL	4100	2.15	MSYL	4200	2.22	LSYL	4300	2.15	UCRT	5000	2.12	BSFT	6000	2.09	LCRT	7000	2.07	KANT	8000	2.13	LRST	9000	2.16	CLAY	10000
LITHOLOGY	DOMAIN	MEAN DENSITY																																						
OVBD	1000	1.4																																						
URST	2000	2.11																																						
MBED	3000	2.25																																						
USYL	4100	2.15																																						
MSYL	4200	2.22																																						
LSYL	4300	2.15																																						
UCRT	5000	2.12																																						
BSFT	6000	2.09																																						
LCRT	7000	2.07																																						
KANT	8000	2.13																																						
LRST	9000	2.16																																						
CLAY	10000	2.19																																						



Criteria	JORC Code Explanation	Commentary
Classification	<p>The basis for the classification of the Mineral Resources into varying confidence categories.</p>	<p>Classification for the Mineral Resource at Colluli is based upon continuity of geology, mineralization and grade, considering drill hole and density data spacing and quality, variography and estimation statistics (number of samples used and estimation pass). The classification also takes into account data supplied by Danakali and publicly available data for the quality specification and expected market for the final products.</p> <p>The current classification is only valid for the nominated grade cut-offs and may change if the cut-off used for reporting was changed.</p>
	<p>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</p>	<p>At Colluli, the core of the modelled Area A deposits is generally well drilled for a potash and rock salt deposit having a drill hole spacing from a nominal 300 m x 300 m in easting and northing, up to 500 m x 500 m in easting and northing directions. There is also a localized cruciform drilling pattern in the centre of the deposit, designed to test continuity at small scale, with a spacing of approximately 50 m apart.</p> <p>In general, the estimate has been classified as Measured Resource where clusters of drill holes are within 0.5 km to 0.65 km of each other, the holes have been assayed, geologically and geophysically logged and the confidence in the estimate is high. The estimate has been classified as Indicated Resource where clusters of drill holes are within 1.5 km of each other, with the remaining areas of the model classified as Inferred. The classification is based upon currently available marketing and processing information, particularly with respect to the deleterious elements (primarily Ca, Mg, SO₄ and insolubles), and assumes a 95% NaCl (Na_wt% + Cl_wt%) cut-off with CaSO₄ less than 2.5%, for the rock salt. At the time of the completion of the estimate, the available marketing and product quality specification data was limited and AMC considered a base case scenario for potential economic extraction based upon publicly available data.</p> <p>The MBED unit estimate has not been classified at this time, due to lack of data and confidence in the possibility of economic extraction.</p>
	<p>Whether the result appropriately reflects the Competent Person's view of the deposit.</p>	<p>AMC believes that the classification appropriately reflects its confidence in and the quality of the grade estimates.</p>

For personal use only



Criteria	JORC Code Explanation	Commentary
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The previously reported potash Mineral Resource estimate (Ercosplan 2012) has not been audited, however it has been reviewed by Snowden Group consultants in 2013 in an unpublished report (Snowden 2013). The previously reported rock salt Mineral Resource estimate (AMC 2015) has not been audited and did not report the URST and MBED units.
Discussion of relative accuracy/confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	The Mineral Resource classification applied to each deposit is based on geostatistical procedures based on the drilling data, which implies a confidence level and level of accuracy in the estimates.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	These levels of confidence and accuracy relate to the global estimates of grade and tonnes for the deposit.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	There has been no production from the Colluli project at this time.