

**Cautionary Statement: TIRIS ENHANCED DEFINITIVE FEASIBILITY STUDY**

*As the Enhanced Definitive Feasibility Study (EFS) for Tiris utilises a portion of Inferred Mineral Resources, the ASX Listing Rules require a cautionary statement to be included in this announcement.*

*The EFS referred to in this announcement is based on a Mineral Resources Estimate reported in accordance with JORC guidelines 2012 in the announcement entitled "Major Resource Upgrade at Aura Energy's Tiris Project" dated 14 February 2023.*

*The Company advises that the EFS Tiris Uranium Production Targets set out in this announcement use a portion of Proved and Probable Ore Reserves, as well as Inferred Resources in the first 6 years (less than 10%) and over the 16-year life of mine (23%) for the Base Case. In the Upside Case over 17 years life-of-mine (24.6%).*

*In accordance with ASX Listing Rules 5.16 and 5.17, as well as the 2012 JORC Code reporting guidelines, a summary of the material information used to estimate the EFS Tiris Production Target and the forecast financial information derived from the EFS Tiris Production Target is detailed below (for more detail refer to the Executive Summary and Table 1, Sections 1 to 4 included as Appendix 1).*

*The Company confirms that the use of Inferred Resources is not a determining factor to the Tiris Project's economic viability.*

*There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised.*

*The information in this announcement that relates to estimated Mineral Resources underpinning the production targets and the forecast financial information derived from the production targets for Tiris were initially reported by the Company in the announcement entitled "Major Resource Upgrade at Aura Energy's Tiris Project" dated 14 February 2023. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resources Estimates in the relevant market announcement continues to apply and has not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.*

*The Announcement includes forward-looking statements. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties, and other factors, many of which are outside the control of Aura Energy Ltd, which could cause actual results to differ materially from such statements. Aura Energy Ltd makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of this announcement.*

*The Company has concluded that it has a reasonable basis for providing the forward-looking statements and production targets included in this announcement. The detailed reasons for this conclusion are outlined throughout this announcement, in the EFS Executive Summary and through JORC Table 1 Sections 1 to 4.*

## Enhanced Definitive Feasibility Study confirms robust financial returns and near-term production potential of the Tiris Uranium Project

### KEY POINTS:

- Average steady-state production increased by 150% from 0.8 Mlbs U<sub>3</sub>O<sub>8</sub> to 2.0 Mlbs pa U<sub>3</sub>O<sub>8</sub>
- Strong financial metrics delivered from 60% of total Mineral Resources, headlined by a 180% increase in the Base Case post-tax NPV US\$ 226M and IRR of 28%
- 57% cash margins from an AISC of US\$ 28.77 / lb U<sub>3</sub>O<sub>8</sub>
- Initial capital cost of US\$ 87.9 million with an additional capital of US\$ 90.3 million to produce 2.0 Mlbs pa U<sub>3</sub>O<sub>8</sub>
- Government stakeholder agreement and major permits in place
- 16-year project life with near-term exploration upside

	Units	2021 DFS <sup>1</sup>	2023 EFS <sup>3</sup> Base Case	2023 EFS <sup>4</sup> Upside Case
Production (10yr average at full production)	Mlbs pa U <sub>3</sub> O <sub>8</sub>	0.8	2.0	2.0
Post-tax NPV <sub>8</sub>	US\$ million	79.7	226	347
Post-tax IRR	%	22%	28%	35%
Average All-in Sustaining Costs	US\$/lbs U <sub>3</sub> O <sub>8</sub>	29.81	28.77	29.40
EBITDA (10yr average at full production)	US\$ million	19.9	72	95
Initial Life of Mine	Years	15	16	17
Capital Expenditure	US\$ million	74.8	178.2	178.2
Payback period	Years	4.0	4.5	3.75

A proportion of the production target for the 2023 EFS is based on Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources, and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

Aura Energy Limited (ASX: AEE, AIM: AURA, “**Aura**”, “**Aura Energy**” or “**the Company**”) is pleased to announce the completion and delivery of the Enhanced Definitive Feasibility Study (“EFS”) for the Tiris Uranium Project (“**Tiris**” or the “**Project**”) in Mauritania. The EFS is based on the original 2021 study but now benefits from the recently updated Mineral Resource Estimate<sup>2</sup> and revised throughput

<sup>1</sup> ASX and AIM Announcement – “Zero Emission Tiris Uranium Project Definitive Feasibility Study – Updated Capital Estimate” 18 August 2021

<sup>2</sup> ASX and AIM Announcement – “Major Resource Upgrade at Aura Energy’s Tiris Project” 14 February 2023

<sup>3</sup> Base Case Spot Price US\$ 65 / lb U<sub>3</sub>O<sub>8</sub>

<sup>4</sup> Upside Case Price Trade Tech Forward Availability Model (FAM2) forecast US\$79/lb U<sub>3</sub>O<sub>8</sub>

modelling that confirms an increase in steady-state production to 2.0 Mlbs pa  $U_3O_8$  and the delivery of strong financial metrics and robust returns to shareholders over the life of the Project.

**Commenting on the updated DFS, Aura Energy Managing Director Dave Woodall said:**

*“The EFS confirms the strong financial case for the Tiris Uranium Project. The Tiris Project is unique with its low capital intensity, low operating costs, competitive all-in-sustaining cost and key regulatory approvals in place. With a relatively short timeline for commercial production, the focus is now on the consideration of a Final Investment Decision as early as Q4 2023, which would see commissioning in late 2024 for commercial production in early 2025.*

*“What differentiates Tiris is the ore quality that allows free-dig shallow open pit mining. Aura does not require expensive drill and blast operations or capital-hungry infrastructure for crushing and screening. Following simple scrubbing and screening the Project will have a leach feed grade of  $>2,000$  ppm  $U_3O_8$  resulting in a downsizing of the leaching circuit that drives competitive operating costs and creates a competitive advantage for Aura Energy in a strengthening uranium market.”*

**Enhanced Definitive Feasibility Study Highlights**

The key highlights from the EFS are:

- ✓ 150% increase in average steady-state production to 2.0 Mlbs  $U_3O_8$
- ✓ Proven processing with simple free dig mining
- ✓ Rapid beneficiation that delivers  $>2,000$  ppm  $U_3O_8$  leach feed grade
- ✓ High confidence production scheduled with 76% Proved and Probable Reserves, and 24% Inferred Mineral Resources.
- ✓ Low initial capital cost and high capital efficiency from any future expansion
- ✓ Excellent cash margins driven by an AISC of US\$ 28.77 / lb
- ✓ 18-month construction period provides rapid path to production following FID
- ✓ 15-year mine life with significant resource growth potential

The Tiris Uranium Project is located in the Tiris Zemmour region, an emerging uranium province approximately 1,450 km from the Mauritanian capital of Nouakchott. The Project is owned by Aura Energy, through its 85% owned Tiris Resources with its Mauritanian Government partner, the National Agency for Geological Research and Mining Heritage (ANARPAM).

The key differentiating feature of the EFS, compared to the 2021 DFS is the increase in production. The Project now plans to deliver a life of mine production of 25.5 Mlbs  $U_3O_8$ , an increase of 110%, taking advantage of the recently announced 52% increase in Measured and Indicated Resources to 29.6 Mlbs  $U_3O_8$ , (62.1Mt at 216 ppm  $U_3O_8$ , at a 100ppm grade cut-off).

The effect of this increased production is enhanced project economics, delivering a Base Case NPV<sub>8</sub> of US\$226 million, and an exceptional Base Case IRR of 28%, with further capacity to improve as nearby Resource growth, is targeted.

Beyond this Base Case Scenario, a long-term Upside Side was calculated using the Trade Tech Forward Availability Model (FAM2) forecast pricing of US\$79/lb  $U_3O_8$ . This Upside Case forms the second scenario illustrated in this EFS demonstrating the leverage to forecast growth in the global uranium market by the World Nuclear Association. With an Upside Case NPV<sub>8</sub> of US\$347 million and a remarkable Upside Case IRR of 35%, this second scenario indicates that the Tiris Project could be one of the most exciting conventional mining uranium projects in development.

Further project optimisation will be investigated as part of the FEED study which has commenced using the outcomes of the EFS. Additional areas of optimisation within the recovery of the  $U_3O_8$  are under investigation and require further engineering to optimise the production profile.

In parallel with this engineering work, project financing and offtake discussions will continue ahead of a potential Financial Investment Decision (FID) in Q4 2023.

## Technical Background

The Tiris Uranium Project was presented in the 2021 DFS as a robust project with low capital and operating cost requirements and the capacity to move into production in the near term. This placed the Project in a strong position as an advanced uranium development opportunity.

The Project was limited in scale by the level of confidence in the Tiris Mineral Resource Estimate (MRE). The mine plan included 19% of the Mineral Resource at a cut-off grade of 110ppm  $U_3O_8$  and the proportion of fixed operating costs was high, indicating poor utilisation of capital.

In 2022 Aura undertook a 10,000m in-fill drilling program with the aim of increasing confidence in the MRE. The outcomes of that program announced on the 14th of February 2023<sup>5</sup>, confirmed a 52% increase in Measured and Indicated Resource Estimates to 29.6 Mlbs  $U_3O_8$  at a cost of just US\$3.5 million. Aura expects further opportunities to continue to improve the quality of the MRE and add further Ore Reserve Estimates through low-cost drill programmes.

Based on this positive outcome, Aura has re-evaluated the optimum processing throughput to realise the full value of the updated MRE. The strategy was to leverage the modular design of the Tiris processing circuits through the incremental addition of more circuits, allowing increased production capacity in a capital-efficient manner. The redesign resulted in an increase in the production profile to an average of 2.0 Mlbs pa  $U_3O_8$  after the expansion. The increase can be achieved with a modest additional capital expenditure of US\$90 million, which maintains cash costs at \$US 25/lb  $U_3O_8$  and AISC at less than US\$30/lb  $U_3O_8$ . This result includes the application of inflationary factors from the original operating cost estimate in 2021.

Importantly, with excellent exploration potential already identified in the surrounding area, it is worth noting that the Updated DFS Base Case only utilises ~50% of the Tiris Global Resource. It will be a priority for the company to lift the categorisation and grow the resources in the future.

## Ore Reserve Estimate

A key outcome of the upgrade to the MRE was the capacity to increase the Ore Reserve Estimate for the Tiris Project, supporting an increase in production capacity.

As per ASX Listing Rule 5.9 and the 2012 JORC Code reporting guidelines, a summary of the material information used to estimate the Tiris Ore Reserve is detailed below (for more detail refer to the Executive Summary and Table 1, Sections 1 to 4 included as Appendix 1).

The Ore Reserve Estimate was generated by Resolve Mining Services (Resolve). The overall project financial model was prepared by Aura using inputs from the mining schedule physicals and the cost model. Detailed processing, tailings disposal, power, water, camp infrastructure and logistics, and other costs were also developed as part of the Feasibility Study. Resolve reviewed the cash flow model with Aura to ensure that the project has a positive cash flow outcome, and this has been confirmed.

The declared Ore Reserve Estimate, at a 110 ppm  $U_3O_8$  cut off is shown in Table 1-1: Updated Ore Reserve Estimate. The definition of the Ore Reserve Estimate cut-off grade can be seen in section 9.3.1 of this report. Aura completed numerous metallurgical and geometallurgical studies on composite samples of mineralisation at Tiris, which were summarised in ASX and AIM announcement, "Tiris Uranium Project DFS complete" 29 July 2019. These results together with updated mining and

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<sup>5</sup> ASX and AIM Announcement: "Major Resource Upgrade at Aura Energy's Tiris Project, 14<sup>th</sup> February 2023

processing costs, and other cost inputs support the application of a marginal cut-off grade of 110ppm U<sub>3</sub>O<sub>8</sub>. This cut-off is comparable to peer projects with similar mineralisation types and processing assumptions.

Description	Mt	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (Mlbs)
<b>Lazare North</b>			
<b>Proved</b>	0.9	298	0.6
<b>Probable</b>	7.9	251	4.4
<b>Lazare South</b>			
<b>Proved</b>	6.5	264	3.8
<b>Probable</b>	2.6	291	1.7
<b>Hippolyte</b>			
<b>Proved</b>	5.7	270	3.4
<b>Probable</b>	7.1	231	3.6
<b>Sadi</b>			
<b>Proved</b>	6.1	232	3.1
<b>Probable</b>	3.3	261	1.9
<b>Total Ore Reserve</b>			
<b>Proved</b>	19.3	257	11.0
<b>Probable</b>	21.3	251	11.6
<b>Total Tiris East Reserve</b>	40.3	254	22.6

**Table 1-1: Updated Ore Reserve Estimate**

*Notes to Table 1:*

*Ore Reserves are a subset of Mineral Resources.*

*Ore Reserves conform with and use the JORC Code 2012 definitions.*

*Ore Reserves are calculated using a uranium price of US\$65 /lb U<sub>3</sub>O<sub>8</sub>.*

*Ore Reserves are calculated using a cut-off grade of 110 ppm U<sub>3</sub>O<sub>8</sub>.*

*Tonnages are reported including mining dilution*

*All figures are rounded to reflect appropriate levels of confidence which may result in apparent errors of summation.*

The Ore Reserve Estimate was generated from the Mineral Resource Estimate produced by H&S Consultants (Sydney) with the appropriate modifying factors to apply for mining dilution. This Resource model was used in an open pit optimisation process to produce a range of pit areas using operating costs and other inputs derived from previous studies. Mining costs were built up from estimates derived from equipment supplier and mining contractor submissions and applied to a detailed mine schedule.

The Ore Reserve Estimate is based on information compiled by the following:

- Revenue prices, based on historical averages and forward estimates, inclusive of the Offtake Agreement with Curzon Resources provided by Aura.
- Processing recoveries based on the geometallurgical model developed by Aura.
- Mineral Resource Estimate, H&S Consultants, 24<sup>th</sup> February 2023.
- Pit optimisation, mine design, production scheduling and mining cost estimation completed by Resolve.
- Capital costs, Mincore, Simulus Engineers, Adelaide Control Engineers (ACE) and Aura.
- Operating costs, Mincore, Simulus Engineers, ACE and Aura.

Please see the Executive Summary and Appendix 1 for further detail on the information material to understand the reported Ore Reserve Estimate.

### Comparison to the 2019 Maiden Ore Reserve

A comparison between the Maiden Ore Reserve published in 2019<sup>46</sup> and the updated Reserve Estimate can be seen in Table 1-2 below.

	2019 Maiden Reserve 175 ppm U <sub>3</sub> O <sub>8</sub> cut off			2023 Reserve Update 110 ppm U <sub>3</sub> O <sub>8</sub> cut off			Variation		
	Mt	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (Mlbs)	Mt	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (Mlbs)	Mt %	U <sub>3</sub> O <sub>8</sub> (ppm) %	U <sub>3</sub> O <sub>8</sub> (Mlbs) %
<b>Lazare North</b>									
<b>Proved</b>	0.7	354	0.6	0.9	298	0.6	29%	-16%	0%
<b>Probable</b>	4.4	332	3.2	7.9	251	4.4	80%	-24%	38%
<b>Lazare South</b>									
<b>Proved</b>	1.5	342	1.1	6.5	264	3.8	333%	-23%	245%
<b>Probable</b>	0.7	340	0.5	2.6	291	1.7	271%	-14%	240%
<b>Hippolyte</b>									
<b>Proved</b>	1.9	331	1.4	5.7	270	3.4	200%	-18%	143%
<b>Probable</b>	1.7	334	1.3	7.1	231	3.6	318%	-31%	177%
<b>Sadi</b>									
<b>Proved</b>				6.1	232	3.1			
<b>Probable</b>				3.3	261	1.9			
<b>Total Ore Reserves</b>									
<b>Proved</b>	4.1	339	3.1	19.3	257	11.0	371%	-24%	255%
<b>Probable</b>	6.8	333	5.0	21.3	251	11.6	213%	-25%	132%
<b>Total Tiris East Reserve</b>	10.9	336	8.1	40.3	254	22.6	270%	-24%	179%

Table 1-2: Comparison of 2019 Maiden Ore Reserve to 2023 Ore Reserve Update.

This ASX Release is authorised by the Aura Energy Board of Directors.

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<sup>46</sup> ASX and AIM Announcement: "Tiris Uranium DFS Complete" 29 July 2019



### **About Aura Energy (ASX: AEE, AIM AURA)**

Aura Energy is an Australian-based minerals company that has major uranium and polymetallic projects with large resources in Africa and Europe. The Company is now focused on uranium production from the Tiris Project, a major greenfield uranium discovery in Mauritania.

A recent Enhanced Definitive Feasibility Study has increased the project NPV significantly which reconfirms Tiris as one of the lowest capex, lowest operating cost uranium projects that remain undeveloped in the world.

In October 2021, the Company entered a US\$10 million Offtake Financing Agreement with Curzon, which includes an additional up to US\$10 million facility, bringing the maximum available under the agreement to US\$20 million.

In 2023, Aura will continue to transition from a uranium explorer to a uranium producer, to capitalise on the rapidly growing demand for nuclear power as the world continues to shift towards a decarbonised energy sector.

### **Disclaimer Regarding Forward-Looking Statements**

This ASX announcement (Announcement) contains various forward-looking statements with respect to the financial condition, operations and business of the Company and certain plans and objectives of the management of the Company. Forward-looking statements can be identified by the use of forward-looking terminology, including, without limitation, the terms “believes”, “estimates”, “anticipates”, “expects”, “predicts”, “intends”, “plans”, “goals”, “targets”, “aims”, “outlook”, “guidance”, “forecasts”, “may”, “will”, “would”, “could” or “should” or, in each case, their negative or other variations or comparable terminology. These forward-looking statements include all matters other than that are not statements of historical fact. Forward-looking statements are inherently subject to uncertainties in that they may be affected by a variety of known and unknown risks, variables and factors which could cause actual values or results, performance, or achievements to differ materially from the results or performance expressed or implied in such forward-looking statements. Such forward-looking statements are based on numerous assumptions regarding the Company’s present and future business strategies and the political and economic environment in which the Company will operate in the future, which may not be reasonable, and are not guarantees or predictions of future performance.

The Company and its respective affiliates and related bodies corporate and each of their respective related parties and intermediaries disclaim any obligation or undertaking to release any updates or revisions to information to reflect any change in any of the information contained in this presentation (including, but not limited to, any assumptions or expectations set out in the presentation).

### **Notes to Project Description**

The estimated Ore Reserves and Mineral Resources underpinning the production targets in this announcement have been prepared by a Competent Person in accordance with the requirements of the JORC Code (2012).

The Company confirms that the material assumptions on which the DFS Tiris Uranium Production Targets are based and the associated financial information derived from the DFS Tiris Uranium Production Targets as outlined in the Aura Energy release entitled “Zero Emission Tiris Uranium Project Definitive Feasibility Study – Updated Capital Estimate” dated 18 August 2021 for the Tiris Uranium Project Definitive Feasibility Study continue to apply and have not materially changed.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcement and that all material assumptions and technical parameters underpinning the estimates in the market announcement continues to apply and has not materially changed.

### **Competent Persons**

The Competent Person for information in this report that relates to the Tiris Ore Reserve Estimate is based on information compiled and reviewed by Mr Andrew Hutson, a Competent Person who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM) and a full-time employee of Resolve Mining Services. Mr Hutson has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the JORC Code 2012. Mr Hutson has no economic, financial or pecuniary interest in the company and consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The Competent Person for the Tiris Ore Reserve Estimate in respect of drill hole data and for integrating the different Mineral Resource Estimates from September 2022 is Dr Michael Fletcher. The information in the report to which this statement is attached that relates to compiling Mineral Resource Estimates and to drill hole data is based on information compiled by Dr Michael Fletcher. Dr Fletcher has sufficient relevant experience in the preparation and compilation of exploration data across a broad range of deposits 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'. Dr Fletcher is a consultant to Aura Energy and a full-time employee of GeoEndeavours Pty Ltd. Dr Fletcher is a Member of the Australasian Institute of Geoscientists and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Competent Person for the Ore Reserve Estimate in respect of Tiris Metallurgical Testwork is Dr Will Goodall. The information in the report to which this statement is attached that relates to the testwork is based on information compiled by Dr Will Goodall. Dr Goodall is currently the Chief Operating Officer of Aura Energy. Dr Goodall has sufficient experience that is relevant to the testwork program and to the activity which he is undertaking. This qualifies Dr Goodall as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Goodall is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM). Dr Goodall consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



# Executive Summary

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## 1 Introduction

The Tiris Project is a greenfield calcrete uranium project first discovered by Aura Energy in 2008. It represents the first development in a significant new global uranium province in Mauritania with a Mineral Resource Estimate of 59Mlbs U<sub>3</sub>O<sub>8</sub> and considerable exploration upside. The mineralisation is naturally suited to low capital cost development and low operating cost extraction of uranium, presenting an opportunity for near term development of the Project.

The Enhanced Feasibility Study assesses the potential to increase U<sub>3</sub>O<sub>8</sub> production from that previously reported in the 2021 DFS, following improvements in Mineral Resource confidence with the Mineral Resource Estimate Upgrade announced in February 2023. The assessment has been made utilising incremental addition of modular processing trains based on 2021 Feasibility Study assumptions.

## 2 Key Financial Outcomes of Enhanced Feasibility Study

Key Financial Outcomes	Unit	Enhanced Feasibility Study Mar-23	Definitive Feasibility Study Aug-21
<b>Price Inputs</b>			
LOM Average U <sub>3</sub> O <sub>8</sub> Price	US\$/lb U <sub>3</sub> O <sub>8</sub>	64 <sup>5</sup>	60
US\$/A\$		0.70	0.70
<b>Valuations and Returns</b>			
NPV <sub>8</sub> (post-tax, real basis, ungeared)	US\$M	226	80
IRR (post-tax, real basis, ungeared)	%	28%	22%
Total Project Payback	Years	4.5	3.75
<b>Cashflow Summary</b>			
Life of Mine (LOM)	Years	16	15
Uranium Produced (LOM)	Mlbs U <sub>3</sub> O <sub>8</sub>	25.5	12.1
Gross revenue (LOM)	US\$M	1,562	
Free cash-flow (Pre-tax)	US\$M	906	420
Free-cash-flow (Post-tax)	US\$M	554	265
<b>Unit Operating Cost</b>			
All in Cost	US\$/lb U <sub>3</sub> O <sub>8</sub>	35.6	37.3
All in Sustaining Cost	US\$/lb U <sub>3</sub> O <sub>8</sub>	28.7	29.8
C1 Cash Cost	US\$/lb U <sub>3</sub> O <sub>8</sub>	25.2	25.4
<b>Capital Cost</b>			
Capital Cost – Start up	US\$M	85.8	74.8
Capital Cost – Ramp up	US\$M	90.1	
Total Development Cost	US\$M	175.9	74.8

Table 2-1 Key Financial outcomes of Enhanced Definitive Feasibility Study

<sup>5</sup> Based on spot price of US\$65/lb U<sub>3</sub>O<sub>8</sub> with inclusion of Aura's commitments under the offtake agreement with Curzon Resources, ASX/AIM: Uranium Offtake Agreement Concluded for Tiris Uranium Project dated 29<sup>th</sup> January 2019

### 3 Project Background

The Tiris Project is a greenfield calcrete uranium project first discovered by Aura Energy in 2008. Located in the Sahara Desert in northeast Mauritania it represents the first major calcrete uranium discovery in the region. The Project is 100% owned by Tiris Ressources SARL, which is 85% owned by Aura Energy Ltd and 15% by the Mauritanian Government's Agence Nationale de Recherches Géologiques et du Patrimoine Minier (ANARPAM)

A Scoping Study was completed in 2014. This was updated into a Feasibility Study (FS) document in May 2017, to support an application for exploitation licences. FS and an extensive Environmental and Social Impact Assessment (ESIA) were submitted on 24th May 2017 to the Mauritanian Ministry of Petroleum, Energy and Mines, and formally approved by the Mauritanian Government on 5th October 2017.

A Definitive Feasibility Study (DFS) for a 1.25 Mtpa mine and process plant was completed in 2019 has been designed to take full advantage of these unusual characteristics, whilst providing a low capital cost and rapid project development and construction. The Capital Estimate for the DFS was updated in August 2021

Exploitation licences (2491C4 and 2492C4) for the Ain Sder and Oued El Foude permits were granted on the 8<sup>th</sup> of February 2019<sup>6</sup> and Mining Conventions for these permits were signed in January 2023.

### 4 Enhanced Feasibility Study

The Enhanced Feasibility Study (EFS) represents an incremental assessment of the potential to increase production rates for the Tiris Project to fully utilise the updated Ore Reserve Estimate as reported in this announcement and the 2023 Mineral Resource Estimate (MRE) update<sup>7</sup>. To achieve this Aura has made the following assumptions:

- All inputs to EFS based on Definitive Feasibility Study 2021<sup>8</sup>
- Process throughput increased based on the addition of modular units defined in DFS.
- Ore Reserve Estimate updated based on 2023 Mineral Resource Estimate Upgrade
- Mining schedule and costs updated to be based on updated Ore Reserve Estimate.
- Capital Estimate escalated by 15% for inflation pending completion of FEED study, Q4 CY 2023.
- Mining and reagent costs updated.
- U<sub>3</sub>O<sub>8</sub> pricing assumptions updated to reflect a structural shift in the uranium market.

<sup>6</sup> Refer ASX announcement – 8 Feb 2019: Tiris Uranium Project Exploitation License Granted

<sup>7</sup> ASX and AIM announcement: Major Resource upgrade for Tiris Project, 14<sup>th</sup> February 2023

<sup>8</sup> ASX and AIM announcement: "Tiris Uranium DFS Complete" 29 July 2019

## 5 Project Location

Tiris uranium project located 680km from Zouérat and 1,400km from Nouakchott, Mauritania's Capital.

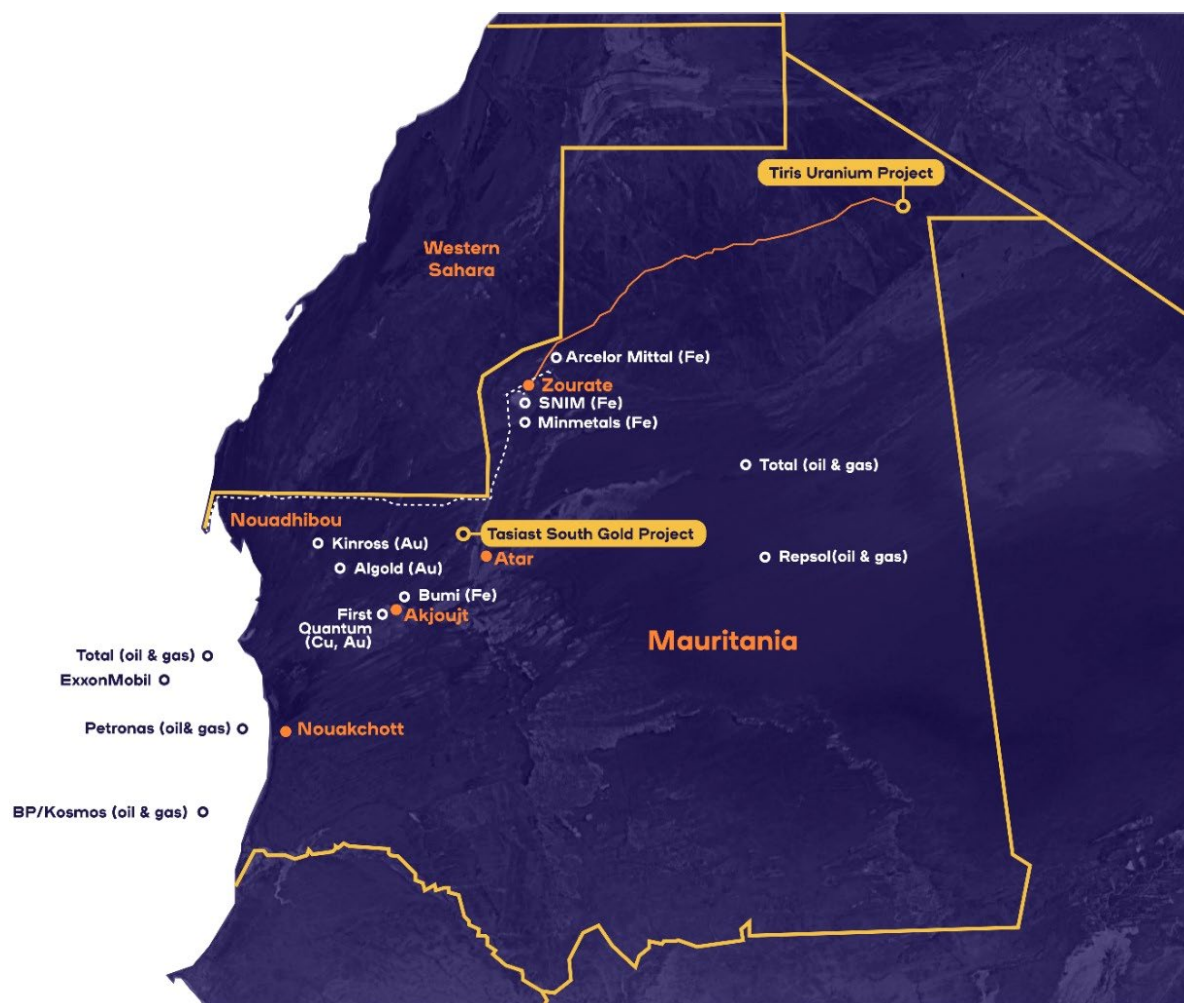


Figure 5-1

Figure 5-2: Location of the Tiris Uranium Project in Mauritania

Mauritania is a country with a well-established and sizeable mining industry and a favourable and well-administered Mining Act. The Government is stable, democratic, based on the French civil law system and supportive of foreign investment. It has an established reputation for maintaining stability and security within its borders.

The predominant spoken languages in Mauritania are Hassaniya, Arabic, Pulaar, Soninke, Wolof and French (widely used in the media and among educated classes). Modern Standard Arabic is the official language.

As of 2018, Mauritania had a population of approximately 4.5 million. The local population is divided into three main ethnic groups: Bidhan, Haratin, and West Africans. Mauritania is nearly 100% Muslim with most inhabitants adhering to the Sunni denomination. The Sufi orders, the Tijaniyah and the Qadiriyyah have great influence in the country. Mauritania gained its independence from France on 28 November 1960, after 59 years of French colonialism. Mauritania held its first democratic presidential elections in 2007 and again in 2009 after a coup. The outgoing president, Abdel Aziz, held

power from 2009 for the regulatory two terms, and gained widespread international and internal support. Abdel Aziz's Defence Minister has just been elected as the new President in June 2019.

## 6 Tenements

The Project is 100% owned by Tiris Ressources SARL, which is 85% owned by Aura Energy Ltd and 15% by the Mauritanian Government's Agence Nationale de Recherches Géologiques et du Patrimoine Minier (ANARPAM).

The key approvals provided for the Tiris project to date are:-

- Mining Exploitation licences (2491C4 and 2492C4) granted for the two Eastern Resource zones at Oued El Foule and Ain Sder on February 8th, 2019
- Environmental and Social Impact Assessment (ESIA), approved on 5th October, 2017<sup>9</sup>.
- Mining Conventions for 2491C4 and 2492C4 Licences, signed January 2023

Once the project go-ahead is given and design is resolved, additional approvals will include:-

- Construction permit for any construction work outside Aura's mining leases.
- Water approval permit to draw water.
- Road usage permit for any roads to be constructed outside Aura's mining leases.
- Import permit for relief of Customs and import duties on all imported materials.
- Re-certification of existing Shield airstrip
- Power permit to establish three power generation plants.
- Health permit to establish a first aid clinic on site.
- Labour permit to approve Aura's Mauritanisation plan to train local personnel and replace expatriates.
- Prior authorisation for production and export of Uranium Oxide Concentrate

## 7 Geology

- Mineralised gravels and weathered granite occur at surface, or under a very thin (<30cm) veneer of wind-blown sand.
- Uranium mineralisation occurs principally as carnotite  $K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$ .
- Carnotite occurs as fine dustings and coatings on granite or granite mineral fragments.

The Tiris resources lie in the north-eastern part of the Reguibat Craton, an Archaean (>2.5 Ga) and Lower Proterozoic (1.6-2.5 Ga) aged complex composed principally of granitoids, meta-sediments and meta-volcanics. The resources lie within Proterozoic portions of the craton. This part of the craton generally consists of intrusive and high-grade metamorphic rocks of amphibolite facies grade.

Several small uranium vein deposits were known in the Reguibat Craton from exploration during the 1950's pointing to the existence of a poorly explored uranium province. Economically significant calcrete-type uranium deposits had not been reported in Mauritania prior to Aura's discoveries.

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<sup>9</sup> Refer ASX announcement – 5 Oct 2017: Environmental Approval for Tiris Uranium Project

## 7.2 Local Geology

In Aura's resource zones, the underlying rocks are pre-dominantly granitic and of two main types:

- Pale grey medium-grained granite and granodiorite with coarse phenocrysts of plagioclase, generally unfoliated and forming low smooth outcrops. The uranium content is low, typically 1 to 2 ppm
- Finer-grained red to pink porphyritic granite, less abundant than the grey granite. This granite typically has higher uranium content in the range 5 to 20 ppm and is therefore a moderately 'hot' granite. The red granite is typically fractured and foliated and is believed to have formed by alteration of the grey granites in zones of deformation.

All the resource zones lie beneath very flat land surfaces covered by surficial hamada and thin aeolian sand deposits. These largely cover the basement rocks, which appear only as scattered outcrops.

## 7.3 Mineralisation

The uranium resources lie predominantly within either weathered, partially decomposed red granite or in colluvial gravels developed on or near to red granites. The resources are believed to have developed within shallow depressions or basins, where colluvial material has accumulated in desert sheet wash events.

Calcrete-hosted uranium mineralisation of several metres in thickness occurs in gravels and weathered granite at surface to a depth of 8 metres, or under a very thin (<30cm) veneer of wind-blown sand. The weathered veneer of relatively unconsolidated material that overlies fresh rock is typically less than 5 metres in thickness, although locally it can occur up to 12 m depth.

The mineralised bodies form laterally continuous, single, thin sheets overlying fresh rock, usually granite. This offers the opportunity for easy, low-cost mining and little or no crushing.

Uranium mineralisation occurs principally as carnotite  $K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$ , occurring as fine dustings and coatings on granite or granite mineral fragments usually mixed with white powdery calcium carbonate. The carnotite grain size is mostly ultrafine micron scale. The deposits appear to have formed by near-surface leaching of uranium from the uraniferous red granites by saline groundwaters during the wet Saharan "pluvial" periods. There have been many of these periods over the past 2.5 million years, the most recent ending only 5,900 years ago. Evaporation during the subsequent arid periods caused the precipitation of the uranium vanadates, along with calcium, sodium and strontium carbonates, sulphates and chlorides.

## 8 Resource and Reserve

### 8.1 Resources

This Feasibility Study is based upon consolidated Mineral Resources reported in the ASX announcement entitled "Major Resource Upgrade at Aura Energy's Tiris Project" released on 14<sup>th</sup> February 2023 and available to download from [asx.com.au ASX:AEE](https://www.asx.com.au/asx/AEE). In that report, Measured and Indicated Resources were listed at 62.1 Mt of ore for 29.6 Mlbs U3O8, at 216 ppm. The combined Mineral Resources Estimate, including an Inferred Resource Estimate, is 113Mt of ore at 236 ppm for 58.9 Mlbs U3O8. All resources were reported at a 100ppm grade cut-off



Area <sup>1,2</sup>	Class	Tonnes (Mt)	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (Mkg)	U <sub>3</sub> O <sub>8</sub> (Mlb)
Hippolyte North	Measured	8.0	236	1.9	4.2
	Indicated	5.8	217	1.3	2.8
	Inferred	4.7	212	1.0	2.2
	Sub-Total	18.5	224	4.1	9.1
Hippolyte Marie & West	Inferred	8.2	310	2.5	5.6
Hippolyte South	Indicated	4.6	192	0.9	2.0
	Inferred	2.7	176	0.5	1.1
	Sub-Total	7.4	186	1.4	3.0
Lazare North	Measured	1.0	282	0.3	0.6
	Indicated	10.1	229	2.3	5.1
	Inferred	3.7	210	0.8	1.7
	Sub-Total	14.8	228	3.4	7.4
Lazare South	Measured	8.6	233	2.0	4.4
	Indicated	5.2	226	1.2	2.6
	Inferred	4.8	222	1.1	2.3
	Sub-Total	18.6	228	4.2	9.3
Sadi	Measured	11.5	189	2.2	4.8
	Indicated	7.4	200	1.5	3.2
	Inferred	10.3	228	2.4	5.2
	Sub-Total	29.2	206	6.0	13.2
All Deposits	Measured	29.1	218	6.4	14.0
	Indicated	33.0	215	7.1	15.6
	Inferred	34.5	237	8.2	18.0
Total Tiris East		96.6	224	21.6	47.7
Oum Ferkik	Inferred	16.4	305	5.1	11.2
Total Aura Resources		113.0	236	26.7	58.9

Table 8-1 - 2023 Mineral Resource Estimate

<sup>1</sup> The information in this announcement is extracted from ASX announcement entitled “Major Resource Upgrade at Aura Energy’s Tiris Project” released on 14<sup>th</sup> February 2023 and available to download from [asx.com.au](https://asx.com.au/asx/ae) ASX:AEE. The Company is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

<sup>2</sup> This Tiris Resource Inventory aggregates the 2023 Mineral Resource Estimates by H&S Consultants Pty Ltd on the Lazare North, Lazare South, Hippolyte, and Hippolyte South deposits and the 2011 Mineral Resource Estimates by Coffey Mining on the Sadi, Ferkik West, Ferkik East, Hippolyte West and Marie deposits. The 2011 Resource Estimate was the subject of Aura ASX announcement dated 19 July, 2011 “First Uranium Resource in Mauritania”. The 2011 Mineral Resource Estimate was produced in compliance with the 2004 edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Aura confirms that all material assumptions and

technical parameters underpinning the 2011 Mineral Resource Estimates in the relevant market announcement continue to apply and have not materially changed.

## 8.2 Reserve Estimate

### 8.2.1 Mining Block Models

The mining block models were supplied as regularized, diluted models by Aura Energy as Multiple Indicator Kriged (MIK) with a panel size of 50 mE x 50 mN x 1.0 mRL. This block size represents an appropriate Selective Mining Unit (SMU) block size for the assumed mining methods of the ore/waste contact and underlying ore zones and is unchanged from the 2019 Study.

Updated models were provided for Lazare North, Sadi and Hippolyte Zone 3. All other areas were unchanged from the 2019 Study.

### 8.2.2 Cut Off Grade

Aura Energy provided an updated cost structure for the project which included an increased production rate and associated recoveries, as summarised in Table 8-2:

Description	Unit	Value
Labour, Administration, FIFO.	US\$/lb	\$1.63
Diesel Generator Maintenance	US\$/lb	\$0.19
Contract Mining	US\$/lb	\$7.07
Road Maintenance	US\$/lb	\$0.18
Process Operating & Reagent	US\$/lb	\$3.32
Spares	US\$/lb	\$1.15
Transport Costs	US\$/lb	\$2.27
Tailings/Reject Management	US\$/lb	\$0.77
Medical Clinic labour	US\$/lb	\$0.15
Camp Management	US\$/lb	\$0.88
Solar	US\$/lb	\$0.26
Diesel Costs	US\$/lb	\$3.48
Communications	US\$/lb	\$0.03
Radiation Management.	US\$/lb	\$0.08
External Services	US\$/lb	\$0.01
<b>Total</b>	<b>US\$/lb</b>	<b>\$21.70</b>

Table 8-2 – Preliminary Operating Costs

Removing the contract mining cost the preliminary non-mining operating cost is US\$ 14.63 /lb

Based on preliminary production targets for mining studies this resulted in a preliminary non-mining cost of US\$9.62/t mill feed.

At this cost, and a planned recovery of 83.1% the cut-off grades, at various selling process is shown in Table 8-3

Selling Price (US\$/lb)	Cut-Off Grade (ppm)
\$40	131
\$50	105
\$60	87
\$70	75

**Table 8-3 - Cut Off Grades**

Aura undertook market research into the projected sales price and came to the recommendations that a reasonable price to use for the study is \$60 per lb U3O8 in 2022 real terms. Aura's recommendation was summarised as;

*A number of industry and financial market commentators have provided estimates of future pricing based on incentive curves. Equity analyst consensus for uranium prices in the late 2020s and into the 2030s sits in the range of \$55 to \$60 per lb.*

*The current TradeTech long term market price indicator, as published for the end of November 2022, is \$53.00 per lb U3O8. TradeTech's production cost indicator, intended to give an idea of a uranium mine incentive price today, is \$56.20.*

*TradeTech's 2022 market study offers two long term price scenarios, FAM 1 based on a 'risk off' approach where published production target volumes are readily achieved, and FAM 2 based on a 'risk on' approach where there is a reduction in production volumes of 129,000 tU / 15,240 t / 336M lbs between 2020 and 2040. FAM 1 has a midpoint forecast price of \$54 per lb and FAM 2 has a midpoint forecast price of \$69 per lb in real terms from 2030. The mean of the two forecasts is \$61.50.*

Allowing for the preliminary nature of the non-mining costs and the range of uranium pricing a cut-off grade of 110ppm was selected for the study, however, to ensure that the resultant grade within the shells is high enough to achieve the target annual production optimisations were also completed at 125ppm, 150ppm and 175ppm.

### **8.2.3 Mineral Resource Summaries**

At a cut-off grade of 110ppm, the total available resource for the study is 59.3 Mt @ 230ppm containing 30.1 Mlbs. This grade is too low to achieve the annual production target of 2.5 Mlbs at the expected milling rates and recoveries. At a cut-off grade of 150ppm the average grade rises to 250ppm and at 175ppm cut-off grade the average resource grade is 313ppm

The resources available for the study, at the various cut off grades are summarised by area in Table 8-4 to Table 8-7.

**Table 8-4 – Resource Summary (110ppm CoG)**

Mining Area	Measured & Indicated		
	(Mt)	(ppm)	(Mlb)
Lazare South	12.4	245	6.7
Lazare North	10.3	245	5.6
Sadi	18.2	209	8.4
Hippolyte Zone 3	4.2	264	2.4
Hippolyte North	9.9	234	5.1
Hippolyte South	4.3	201	1.9
<b>Total</b>	<b>59.3</b>	<b>230</b>	<b>30.1</b>

**Table 8-5 – Resource Summary (125ppm CoG)**

Mining Area	Measured & Indicated		
	(Mt)	(ppm)	(Mlb)
Lazare South	10.7	265	6.2
Lazare North	9.1	261	5.2
Sadi	14.8	230	7.5
Hippolyte Zone 3	3.6	286	2.3
Hippolyte North	8.6	252	4.8
Hippolyte South	3.7	214	1.7
<b>Total</b>	<b>50.5</b>	<b>250</b>	<b>27.8</b>

**Table 8-6 – Resource Summary (150ppm CoG)**

Mining Area	Measured & Indicated		
	(Mt)	(ppm)	(Mlb)
Lazare South	8.7	294	5.7
Lazare North	7.4	290	4.7
Sadi	10.9	263	6.3
Hippolyte Zone 3	2.9	322	2.1
Hippolyte North	6.8	283	4.2
Hippolyte South	2.8	238	1.5
<b>Total</b>	<b>39.6</b>	<b>281</b>	<b>24.5</b>

**Table 8-7 – Resource Summary (175ppm CoG)**

Mining Area	Measured & Indicated		
	(Mt)	(ppm)	(Mlb)
Lazare South	7.1	323	5.1
Lazare North	6.0	319	4.2
Sadi	8.1	298	5.3
Hippolyte Zone 3	2.4	358	1.9
Hippolyte North	5.4	314	3.7
Hippolyte South	2.1	264	1.2
<b>Total</b>	<b>31.1</b>	<b>313</b>	<b>21.5</b>

The Ore Reserve Estimate was generated by Resolve Mining Services (Resolve). The overall project financial model was prepared by Aura using inputs from the mining schedule physicals and the cost model. Detailed processing, tailings disposal, power, water, camp infrastructure and logistics, and other costs were also developed as part of the Feasibility Study. Resolve reviewed the cash flow model with Aura to ensure that the project has a positive cash flow outcome, and this has been confirmed.

The declared Ore Reserve Estimate, at a 110 ppm U<sub>3</sub>O<sub>8</sub> cut off is shown in Table 8-8.

Description	Mt	U <sub>3</sub> O <sub>8</sub> (ppm)	U <sub>3</sub> O <sub>8</sub> (Mlb)
<b>Lazare North</b>			
<b>Proved</b>	0.9	298	0.6
<b>Probable</b>	7.9	251	4.4
<b>Lazare South</b>			
<b>Proved</b>	6.5	264	3.8
<b>Probable</b>	2.6	291	1.7
<b>Hippolyte</b>			
<b>Proved</b>	5.7	270	3.4
<b>Probable</b>	7.1	231	3.6
<b>Sadi</b>			
<b>Proved</b>	6.1	232	3.1
<b>Probable</b>	3.3	261	1.9
<b>Total Ore Reserve</b>			
<b>Proved</b>	<b>19.3</b>	<b>257</b>	<b>11.0</b>
<b>Probable</b>	<b>21.3</b>	<b>251</b>	<b>11.6</b>
<b>Total Tiris East Reserve</b>	<b>40.3</b>	<b>254</b>	<b>22.6</b>

**Table 8-8: Updated Ore Reserve Estimate**

*Ore Reserves are a subset of Mineral Resources.*

*Ore Reserves conform with and use the JORC Code 2012 definitions.*

*Ore Reserves are calculated using a uranium price of US\$65 /lb.*

*Ore Reserves are calculated using a cut-off grade of 110 ppm U<sub>3</sub>O<sub>8</sub>.*

*Tonnages are reported including mining dilution*

*All figures are rounded to reflect appropriate levels of confidence which may result in apparent errors of summation.*

The Ore Reserve Estimate was generated from the Mineral Resource Estimate produced by H&S Consultants (Sydney) with the appropriate modifying factors to apply for mining dilution. This Mineral Resource model was used in an open pit optimisation process to produce a range of pit areas using operating costs and other inputs derived from previous studies. Mining costs were built up from estimates derived from equipment supplier and mining contractor submissions and applied to a detailed mine schedule.

The Ore Reserve Estimate is based on information compiled by the following:

- Revenue prices, based on historical averages and forward estimates, based on Offtake Agreement with Curzon Resources provided by Aura.
- Processing recoveries based on the geometallurgical model developed by Aura.
- Mineral Resource estimate, H&S Consultants, 14 February 2023.

- Pit optimisation, mine design, production scheduling and mining cost estimation completed by Resolve.
- Capital costs, Mincore, Simulus Engineers, Adelaide Control Engineers (ACE) and Aura.
- Operating costs, Mincore, Simulus Engineers, ACE, Mining Plus and Aura.

## 9 Mining

- The EFS mine schedule supports 15 years production at average 2.0 Mlbs of U<sub>3</sub>O<sub>8</sub> per annum, after ramp-up.
- Mining is free-digging and at surface.
- Owner mining employed.

Resolve Mining Consultants (Resolve) was commissioned by Aura Energy in November 2022, to complete the mining design for the project, including Ore Reserve estimation in accordance with JORC (2012 Edition) requirements.

The detailed tasks undertaken were:

- Preliminary mine planning for preparation of information pack to obtain Mining Contractor Pricing.
- Obtain Mining Contractor pricing and review submissions.
- Complete pit optimisation including Measured, Indicated, and Inferred (MII) mineral resources for the Lazare North, Lazare South, Hippolyte North, Hippolyte South, Hippolyte Z3 and Sadi Resources as potential mineral inventory.
- Define mining method and cycle based on optimised pit designs.
- Develop life-of-mine and mill production schedules including backfilling of beneficiation circuit reject and process tailings.
- Estimate Ore Reserves and report in accordance with JORC (2012 Edition).

In January 2023 Mining Plus was engaged to complete an owner mining cost model to support the mine schedule.

The uranium mineralisation largely lies within 3 to 5 metres of the surface in a relatively soft, free-digging material containing patchy calcrete. Based on trenching and metallurgical test work to date, this does not require blasting before mining, or crushing prior to beneficiation.

The Enhanced Feasibility Study has shown that the three mining hubs can be developed in a practical sequence to produce 1.7 -2.3 Mlbs/yr UOC through the processing plant for over ten years. The first nine years are from currently defined Measured or Indicated Mineral Resources, which form the declared Ore Reserve Estimate. The total mining cost to develop and operate the mine for 17 years, has been estimated at US\$190 million or US\$2.14/tonne of material mined. This includes both fixed and variable operating costs, but excludes any capital spent prior to mobilisation.

### 9.1 Pit Optimisation

Optimization's for the study were completed using the rates from both the 2019 results and the higher average mining costs which will show the impact of increasing mining costs on the potential Ore Reserve.

The optimisation results for the six mining areas, two mining costs and four cut off grades and US\$60/lb are summarised in Table 9-1.



The tables show that over 75% of the total resource falls within the optimisation shells at \$60/lb, even at the higher mining costs.

Mining Area	Mill Feed (Mt)	Mill Feed (ppm)	Mill Feed (Mlbs)	Waste (Mt)	Total (Mt)	Cash Flow (M\$)	Cost (US\$/lb)	Resource (%)
Lazare South	9.1	272	5.4	10.5	19.6	\$94	\$35.3	81%
Lazare North	9.2	254	5.2	9.0	18.2	\$108	\$34.7	93%
Sadi	10.5	245	5.7	11.5	22.1	\$84	\$38.6	68%
Hippolyte Zone 3	3.2	296	2.1	4.0	7.1	\$46	\$32.9	85%
Hippolyte North	7.0	244	3.7	7.3	14.3	\$72	\$36.8	73%
Hippolyte South	3.6	210	1.7	10.7	14.3	\$27	\$41.0	89%
<b>Total</b>	<b>42.5</b>	<b>253</b>	<b>23.8</b>	<b>53.1</b>	<b>95.6</b>	<b>\$430</b>	<b>\$36.4</b>	<b>79%</b>

**Table 9-1 - Higher Cost Optimisation Results at 110 ppm COG**

The optimisation results show an increase in the mill feed grade as either the cut-off grade increases, or the cost does. At the lowest cost and lowest cut-off grade the average grade mined is 246ppm, this average grade would only produce 1.7 Mlbs pa, and adding a fourth beneficiation train would be required to approach the target of 2.5 Mlbs pa.

Increasing the cut-off grade to 175ppm increases the life of mine average grade to 324ppm, and with this the production would increase to 2.2 Mlbs pa for three trains or 3.0 Mlbs pa from four. The small increase in grade from the higher mining costs will allow more than 3.0 Mlbs pa to be achieved, one average, from all deposits except Hippolyte South using four beneficiation trains.

The tables show that increasing the mining cost only decreases the potential mill feed by less than 10%, and the contained metal within this feed by only 5%. This indicates that the ore being dropped at the higher cost is not significant and the grade associated with this material is at the lower end of that being selected for mining. The drop in waste and therefore total movement is more significant at 15%-20% which does carry through to higher cash flows.

These increased grades, along with the potential need to add a fourth beneficiation train to the processing will decrease the overall mine life. The mine life ranges from over twelve years to less than six for the highest grade with highest throughputs.

Beneficiation Trains	CoG (ppm)	Mill Feed (Mt)	Mill Feed (ppm)	Product (Mlbs pa)	Mine Life (yrs.)
3	110	46.8	246	1.7	12.5
3	125	41.2	263	1.8	11.0
3	150	33.1	293	2.0	8.8
3	175	26.3	324	2.2	7.0
4	110	46.8	246	2.3	9.4
4	125	41.2	263	2.4	8.2
4	150	33.1	293	2.7	6.6
4	175	26.3	324	3.0	5.3

**Table 9-2 – Mine Life Comparisons. Highlighted case (4 beneficiation trains at 110ppm cut off) represents proposed Base Case.**

## 9.2 Pit Shells

The pit shells for the three mining areas are shown in Figure 9-1 to Figure 9-5. The figures show the four cut-off grade results as;

- 100ppm; green
- 125ppm; blue
- 150ppm; yellow, and
- 175ppm; red

In most areas the four shells over lie each other and the difference in inventory is due to the proportion of above cut-off grade material in each model block. The model blocks that fall outside the shells generally have less than 10% mineralization and are uneconomic.

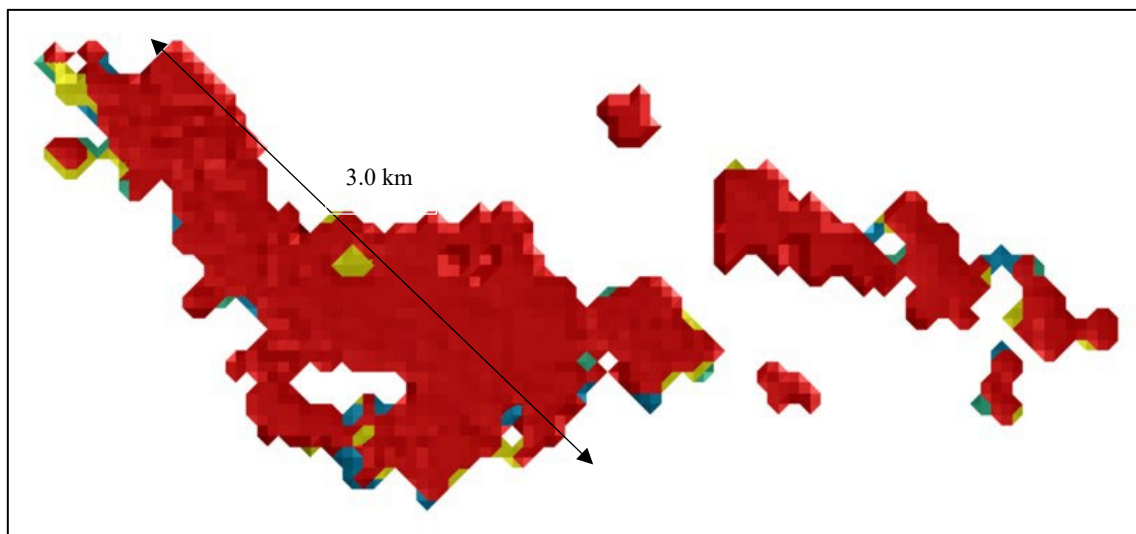


Figure 9-1 – Lazare South Optimisation Shells

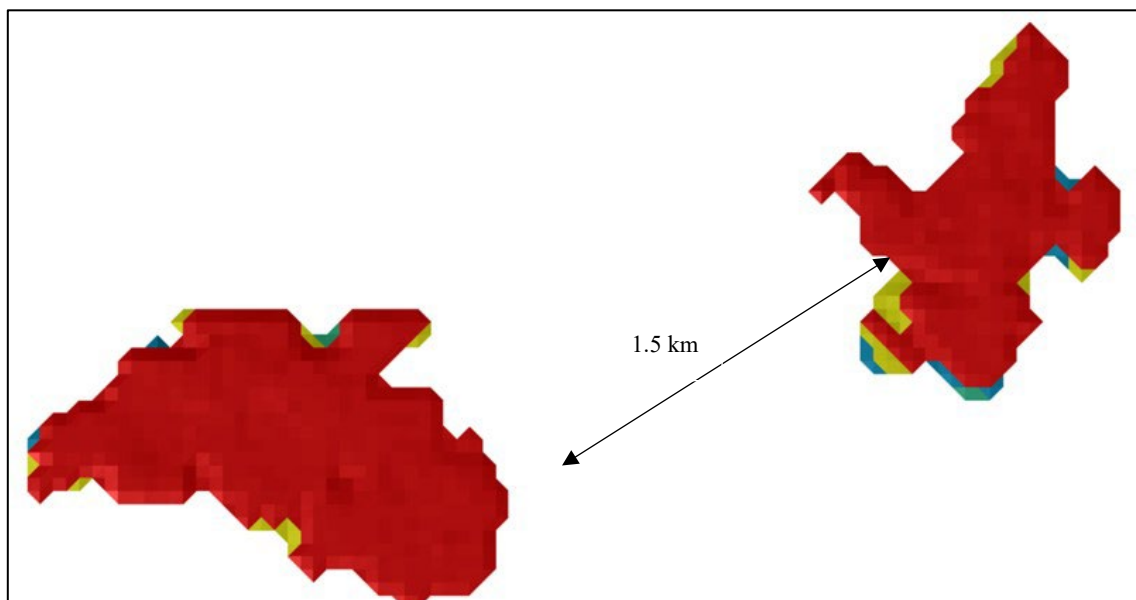


Figure 9-2 – Lazare North Optimisation Shells

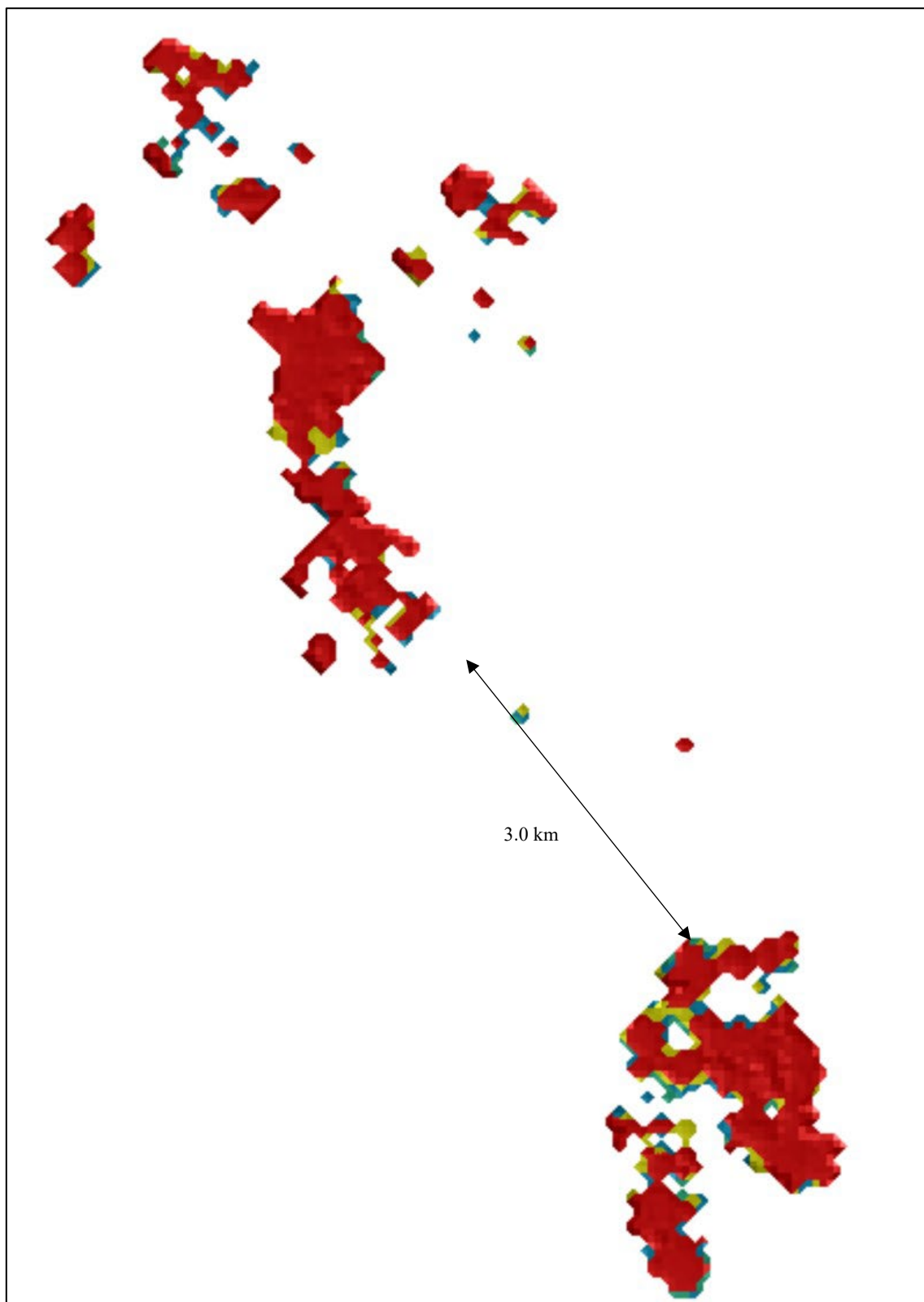
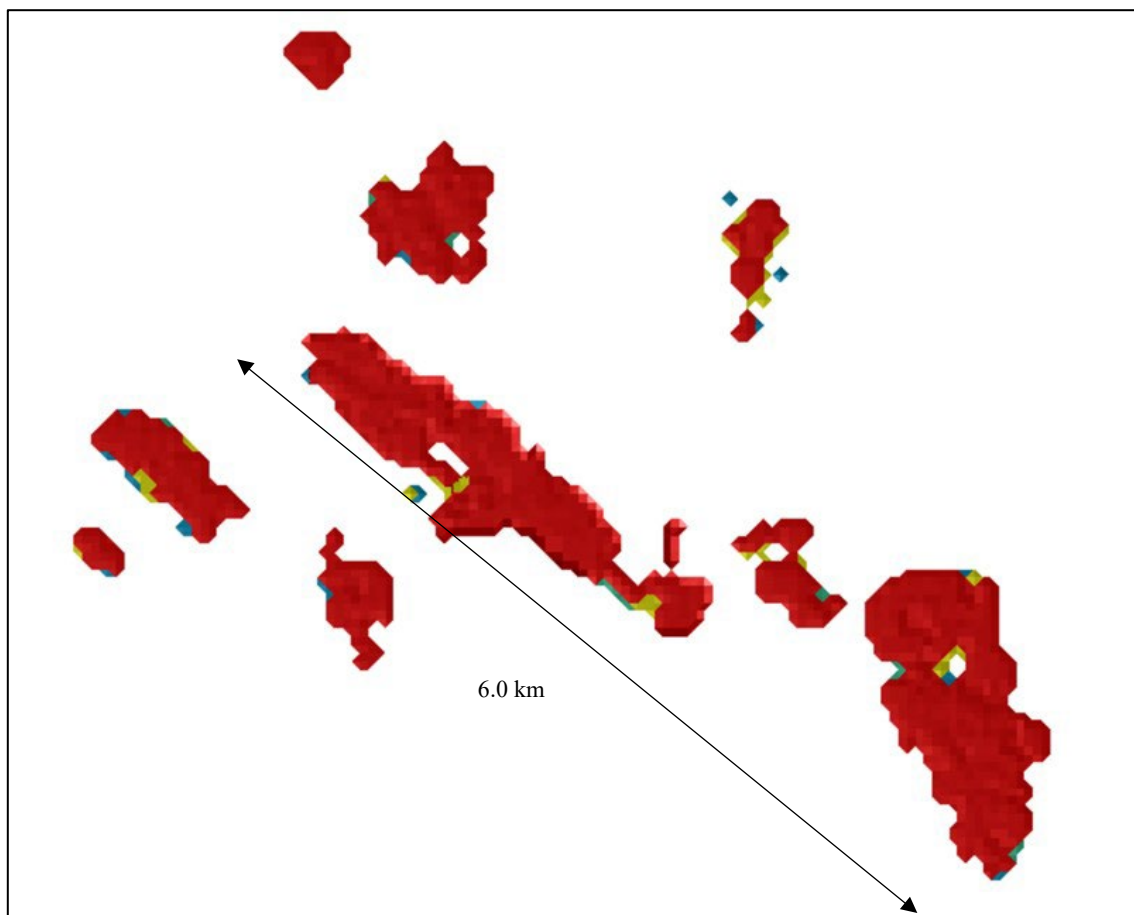


Figure 9-3 – Sadi Optimisation Shells



**Figure 9-4 – Hippolyte North (inc Z3) Optimisation Shells**

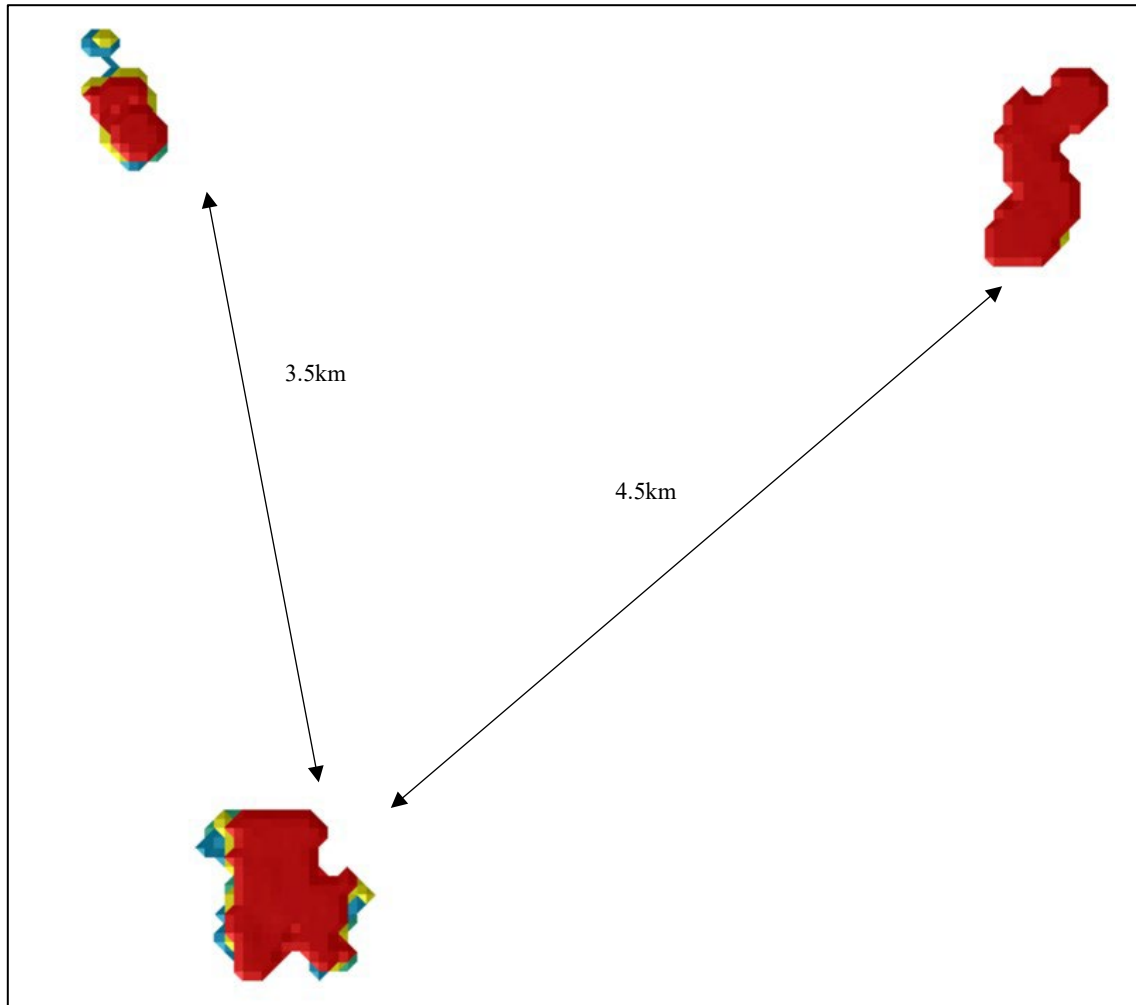


Figure 9-5 – Hippolyte South Optimisation Shells

### 9.3 Mine Design

#### 9.3.1 Open Pit Designs

Due to the shallow nature of the deposit and that the optimisations can be used to determine the extent of mining no individual pit designs are required for the study. As the project develops the pit designs will need to be developed but they will still be relatively simple shapes used to extract the ore and waste.

For the study the optimisations shells were cleaned to remove any small un-mineable shapes, and then these clean surfaces coded into the mining model. The blocks within the mining model are 50m x 50m which while is a mineable size a mine panel size of 200m x 200m was selected as the minimum dimensions of each pit. The mining model blocks and mine panels for Lazare South are shown in Figure 9-6 to indicate the selected minimum pit size.

This pit size was selected as it provides sufficient length on any side to ensure a ramp can be installed and that mine development can be advanced enough for continuous backfilling.

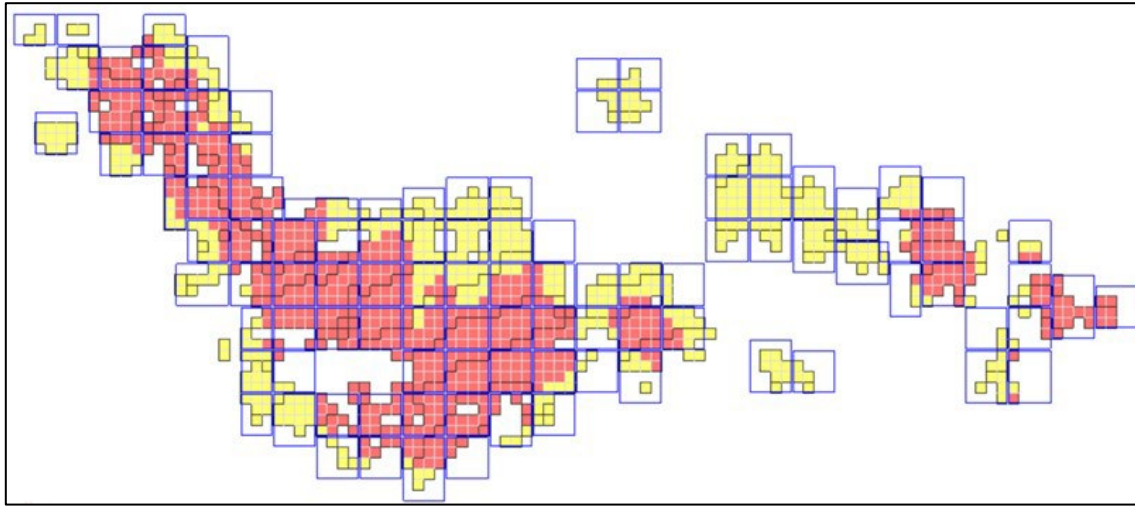


Figure 9-6 – Lazare South Measured and Indicated Mining Model and Mine Panels

### 9.3.2 Waste Dumps

Prior to backfilling being possible each project area will require a waste dump to store the overburden, beneficiation rejects and dry-stacked tailings until sufficient void space has been mined. The size and location of these dumps is determined by the production schedule.

Each dump constructed will be rehandled back into the mining void prior to a mining area being completed.

### 9.3.3 Mining Method and Cycle

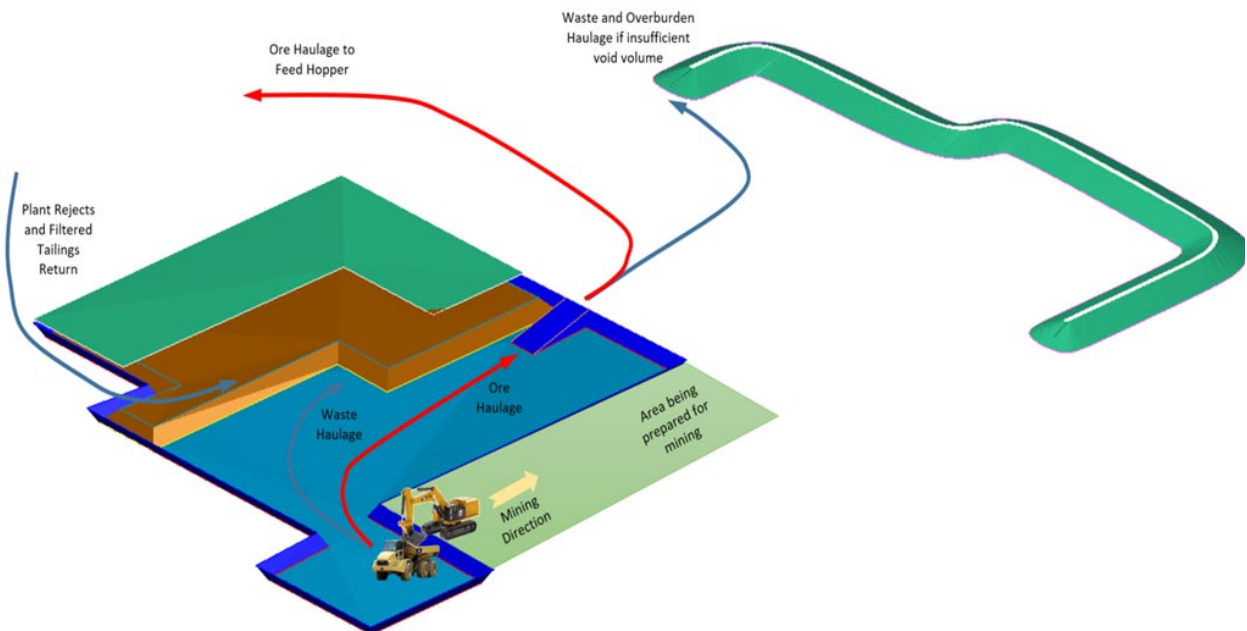


Figure 9-7: Mining Method, Ore Haulage Circuit



A conventional open pit dry mining method, utilising a combination of bulldozers, excavators and trucks will be employed. Mining is anticipated to follow a strip-mining philosophy, where any waste mined will be returned to a previously mined area without the need for building waste dumps or rehandling. It is planned that initial ex-pit dumps or berms will be utilised as the open pit develops, but these should be located immediately adjacent to a pit. The waste material should be able to be simply pushed in when space is available in the mined-out void.

No drilling or blasting is required based on Aura's site investigations and material properties. However, each mining area will require grade control drilling prior to excavation. It is expected that this grade control will be undertaken by either excavator dug pits or a rock saw, which could then be gamma logged to ascertain the in-situ grade.

Stage	Description
Sand Clearing	Any overlying sand is pushed into windrow stockpiles alongside the pit with a bulldozer. Where required these shall be formed as berms to avoid any flooding of the pit from the infrequent rainfall and surface water eventuating.
Overburden Removal	Any overburden is removed by bulldozer onto windrow stockpiles.
Ore and Waste Mining	The ore exposed and associated waste is mined by hydraulic shovel or bulldozer and front-end loader and loaded into haul trucks. The ore is hauled directly to the apron feeder area, whereas the waste is placed into stockpiles alongside the pit unless sufficient mining voids are available for backfilling
Backfilling	When sufficient void volume is available, the mined-out cell is filled with filter pressed process plant tailings, barren rejects discharged from the screening plant and mine waste.
Surface Rehabilitation	Overburden and stockpiled mine waste is pushed over the consolidated cell from the windrow stockpiles at the side of the pit.

**Table 9-3 - Mining Cycle Description**

#### 9.4 Mine Schedule

Mine scheduling was completed with the following constraints:

The base case target mining rate of 4.18 Mtpa.

- A plus 10-year project life
- Measured and Indicated Mineral Resources with minor Inferred Mineral Resources
- Two years ramp up phase at mining rate of 1.25Mtpa
- No ore stockpiling

The schedule was completed monthly then summarised annually. Allowances for feed hopper relocations were included between mining areas when a shutdown of the plant and mine occurred.

Ore and waste mining occur concurrently as the ore is defined as a proportion of each resource block, with the remainder being waste. Ore is mined at exactly the processing rate required as there is no stockpiling of ore at the hopper. No advance waste mining occurs.

The mining panels were sequenced from highest value within each mining area before a feed hopper relocation occurs. The operating mine area is grouped into three mining hubs based on their locality and synergies to share resources and available infrastructure. The list of selected mining hubs is summarised in Table 9-4.

Mining Hub	Open Pits
Lazare Mining Hub	Lazare South Lazare North
Hippolyte Mining Hub	Hippolyte Z3 Hippolyte South Hippolyte North
Sadi Mining Hub	Sadi South Sadi North

Table 9-4: Resource distribution by mining hubs

The final base case sequence has been presented in Figure 9-8. From Year 4 there will be 3 modular beneficiation circuits available, allowing simultaneous mining at multiple resources.

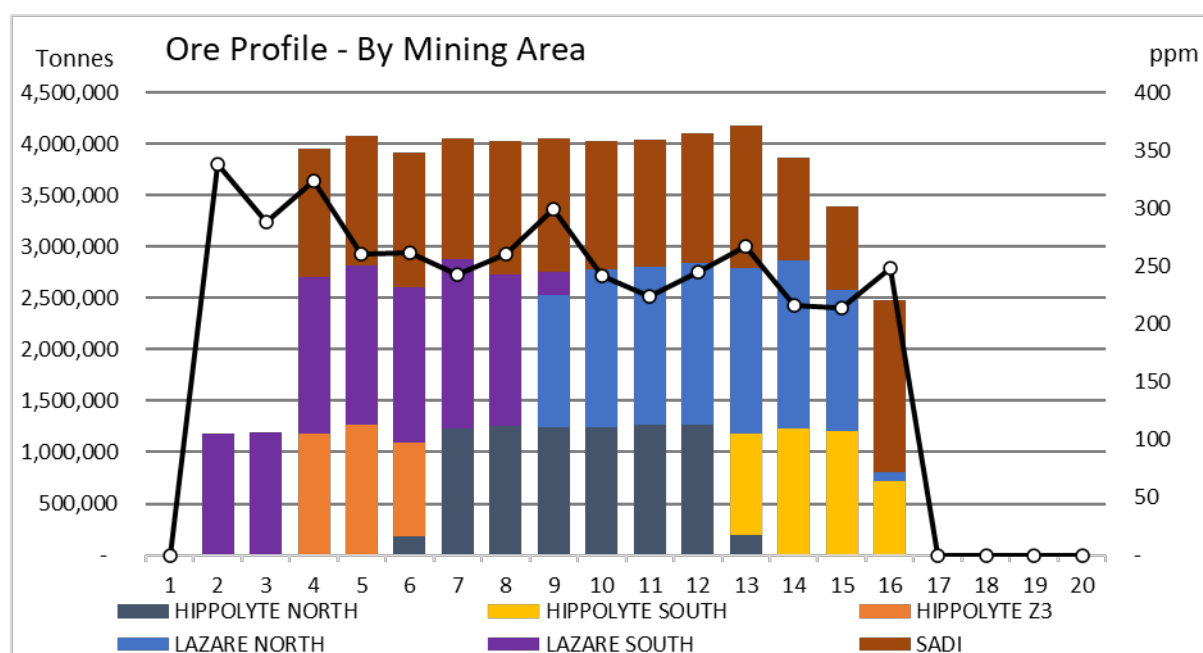
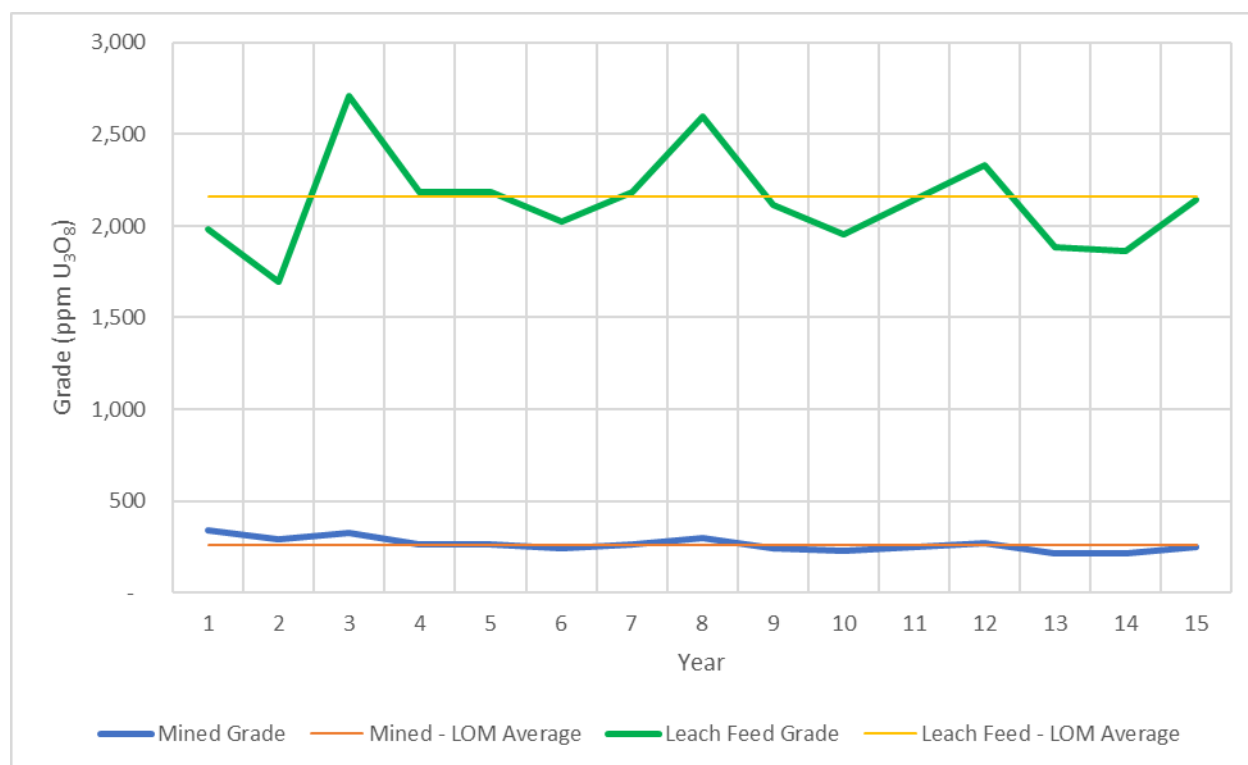


Figure 9-8: Mine schedule ore profile by area. Including grade profile across LOM.

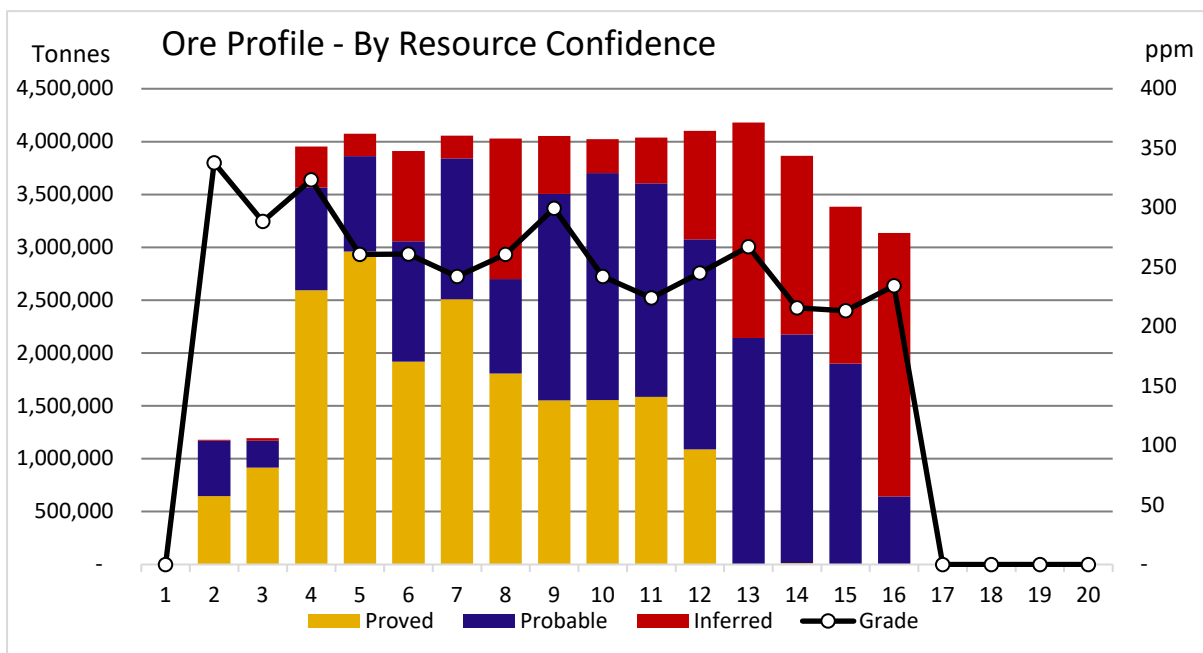
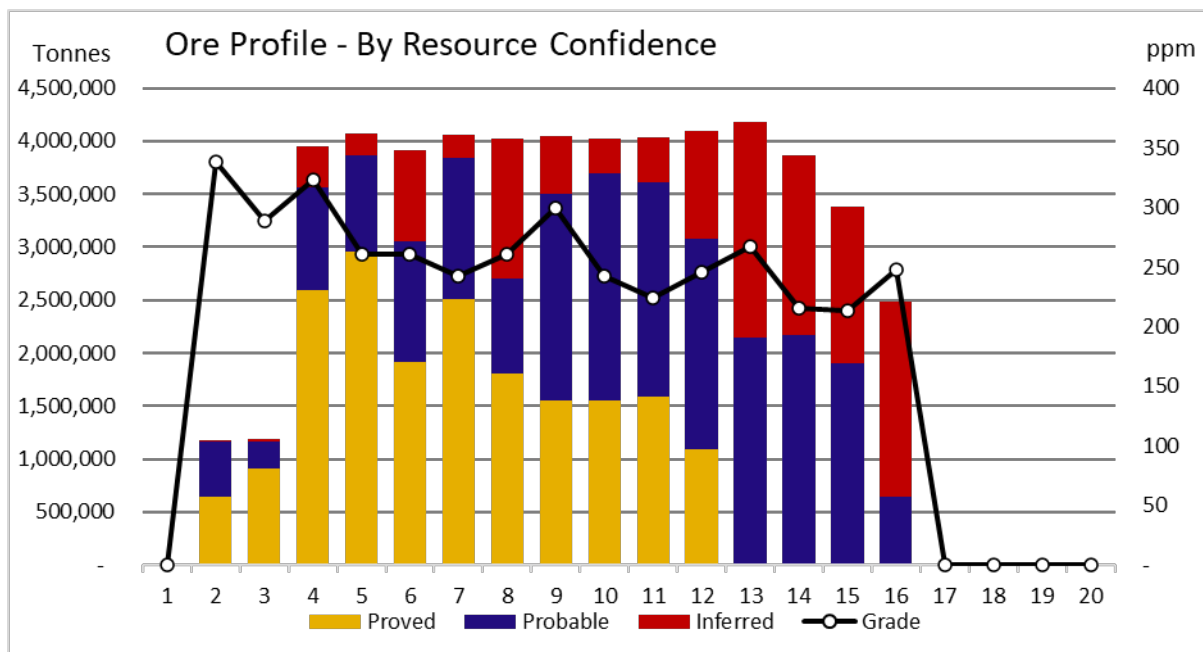
*There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised. The Company confirms that the use of Inferred Resources is not a determining factor to the Tiris Project's economic viability*

Figure 9-9 presents the  $U_3O_8$  grade profile as mined and for leach feed.



**Figure 9-9: Mined grade profile and leach feed grade profile across LOM. Screen cut size for beneficiation at 150 $\mu$ m for ramp up, reduced to 75 $\mu$ m for operations.**

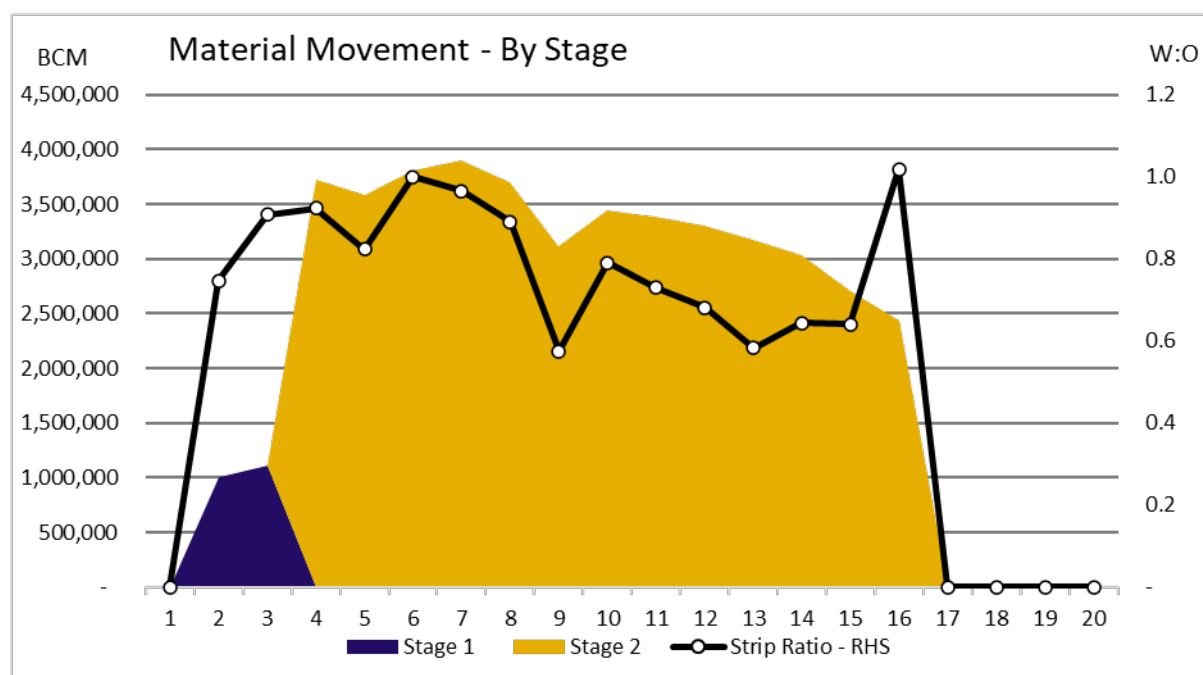
The base case ore profile by Mineral Resource confidence is presented in Figure 9-10. This demonstrates no Inferred material through the ramp up period and no more than 10% Inferred material in the first 5 years through the payback period. Over the LOM 21.04% of mined material was from the Inferred category. The project remains economically viable without the inclusion of Inferred Resource Estimates.



**Figure 9-10: Ore profile by Ore Reserve and Mineral Resource confidence.**

*There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised. The Company confirms that the use of Inferred Resources is not a determining factor to the Tiris Project's economic viability*

Figure 9-11 shows the material movement in the start-up and operational phases, along with the strip ratio across the schedule. The average strip ratio (W:O) across the 16-year LOM was 0.79.



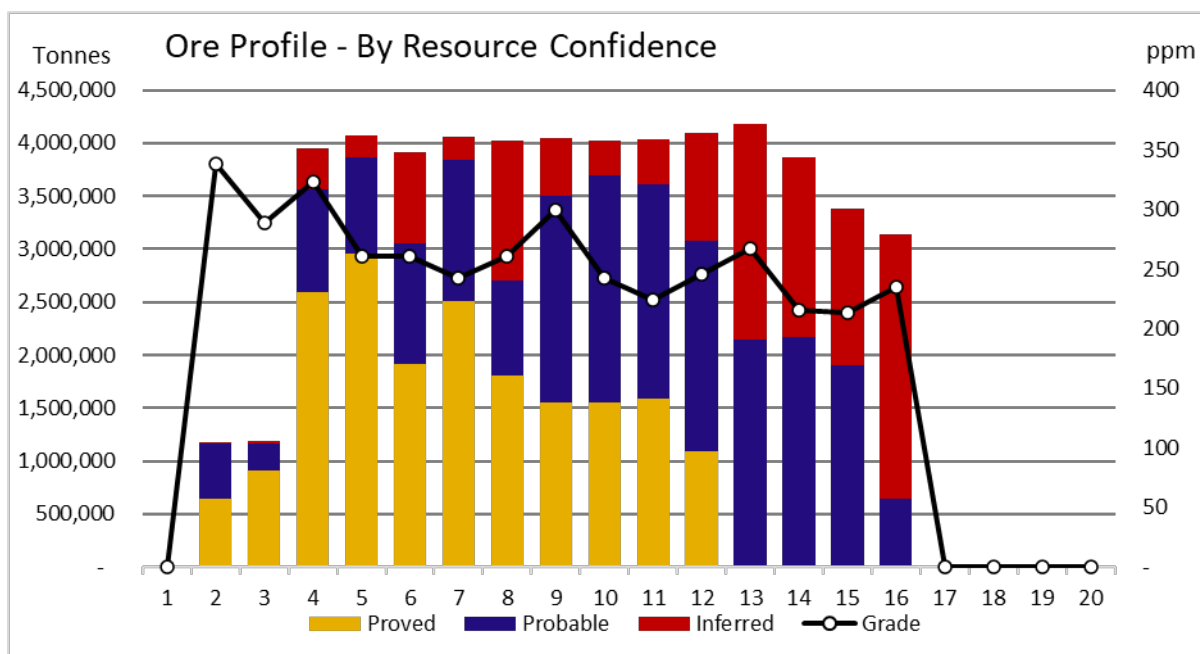
**Figure 9-11: Material movement between ramp up stage and operations, with strip ratio.**

*There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised. The Company confirms that the use of Inferred Resources is not a determining factor to the Tiris Project's economic viability*

#### 9.4.1 Upside Scenario

A scenario examining the potential for extension of the project life using additional material from the Inferred Mineral classification was developed. For this scenario it was assumed that Inferred material could convert to Measured and Indicated Mineral classification along the same parameters observed for the Maiden Ore Reserve Estimate and in the 2022 Resource upgrade program. In these programs an average of 65% Inferred Resource material converted to Measured and/or Indicated Resource classifications.

The production profile estimated for the upside scenario can be seen in Figure 9-12. In this scenario 53.2Mt of material at 110ppm cut off and average grade of 257ppm  $U_3O_8$  was estimated to be mined over 15-year LOM.



**Figure 9-12 – Material profile and grade by Reserve and Resource category for upside scenario.**

The upside scenario production profile is based on a Mineral Resources Estimate in accordance with JORC guidelines 2012 (ASX: Major Resource Upgrade at Aura Energy's Tiris Project dated 14 February 2023). The Company advises that the EFS uses a portion of Inferred Resources; in the first 6 years (less than 10%) and over the 15-year life of mine (24.6%). The Company confirms that the use of Inferred Resources is not a determining factor to the Tiris Project's economic viability.

There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration or evaluation work will result in the determination of Indicated Resources or that the production targets reported in this announcement will be realised.



## 10 Metallurgy and Test work

Process development for the Tiris Project was based on detailed material characterisation. This included detailed mineralogical characterisation early in the project development, supported by various diagnostic techniques.

The results of material characterisation were assessed against established uranium processing options. This allowed early assessment of viable options and rejection of unsuitable options. The primary characteristics driving process selection were defined as:

- Presence of uranium exclusively with carnotite group minerals.
- Fine grained nature of carnotite, which could be easily liberated from host particles.
- Dominance of carbonate minerals over sulphate minerals.
- Tendency for carbonate minerals to upgrade with uranium, while sulphate minerals were rejected.
- Presence of swelling and non-swelling clay minerals.

The uranium mineralisation at Tiris occurs principally as carnotite  $K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$  and possibly some of the chemically-similar calcium uranium vanadate, tyuyamunite  $Ca(UO_2)_2(VO_4)_{2.5} \cdot 8H_2O$  in varying proportions.

Carnotite is a radioactive, bright-yellow, soft and earthy vanadium mineral that is an important source of uranium. A hydrated vanadate, pure carnotite contains about 53 % uranium, 12 % vanadium, and trace amounts of radium. It is of secondary origin, having been formed by alteration of primary uranium-vanadium minerals. It occurs chiefly with (its) in, locally as small pure masses, particularly around fossil wood.

The Carnotite grain size for the Tiris material is in the range of 5-15µm diameter across the deposits. The majority of carnotite grains identified were within the micron size range.

Several Ore Domains were defined by geometallurgical modelling based on process behaviour. These Domains were defined by gangue mineralisation and particle size distribution. Geometallurgical modelling focused on the first 4 years of mine production (payback period), for the Lazare North and Lazare South Resources. The geometallurgical modelling covered 18% of defined Ore Reserves for the EFS mine schedule, with additional work planned through the FEED study.

The primary differentiating factors for the Ore Domains were:

- Proportion of mass distribution reporting to -75µm screen fraction.
- Proportion of sulphate mineral reporting to -75µm screen fraction.
- Upgrade factor of uranium to -75µm screen fraction

The material characterisation identified that the most appropriate process flowsheet would include ore beneficiation, followed by a heated alkaline leach, concentration of leached uranium and precipitation of yellowcake product.

To investigate the technical viability of process flowsheet options a steady state simulation model was developed. This allowed rapid assessment of process configurations and early rejection of options that were technically unsuitable. The steady state simulation model was used throughout process

development test work to support test work results and allow for solution recycle and potential impurity build up at every stage. This allowed test work programs to be developed that were targeted specifically at design critical parameters.

### 10.1 Ore beneficiation

There is a high portion of barren sands within the mineralised calcrete. Removal of the sand prior to leaching reduces the throughput in the hydrometallurgical process plant, with a subsequent reduction in capital and operating costs. The Tiris mineralisation is particularly well suited to this type of ore beneficiation.

The uranium bearing carnotite is very fine grained, with average particle diameter of 5-15µm. The carnotite, clay minerals and fine-grained calcite is loosely bound to barren silica and sulphate rich gravels. This can be easily separated using low power washing in a rotary scrubber, resulting in concentration of carnotite in the fine fractions. Uranium can be separated in these fine fractions using simple screening, resulting in recovery of over 90% of the uranium into between 10% and 15% of the total mass, as demonstrated in Figure 10-1.

The response to ore beneficiation allows rejection of most of the ore mass, greatly reducing the throughput to leaching. This translates to Capital savings through requirement for a significantly smaller leach circuit, along with significant operating savings through reduction in reagent consumption.

Beneficiation test work was undertaken at AMML, Gosford on ~100kg domain composite samples. This included benchtop scrubbing of bulk samples followed by screening to 150µm to product ore concentrates of 10-15kg for each Domain Composite. These provided the inputs for development hydrometallurgical test work at ANSTO Minerals.

Bulk Domain Composite samples were also prepared at Mintek, South Africa. These samples were scrubbed in a 1m diameter rotary scrubber and screened at 150µm on an industrial scale single deck Derrick Stack Sizer. Technical support for Derrick screening test work was provided by Derrick International.<sup>10</sup>

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<sup>10</sup> ASX Release: "Tests confirm average 550% upgrading of uranium at Tiris", 23 June 2022

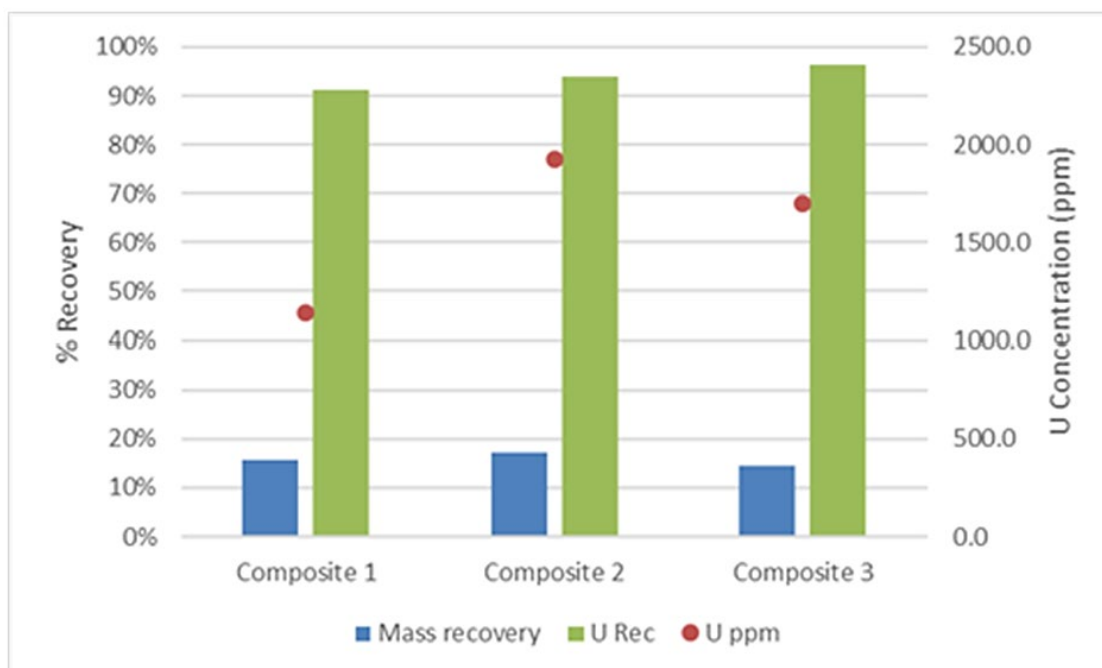


Figure 10-1: Mass recovery, uranium recovery and product uranium grade for screen cut size of 150µm. All composites.



Figure 10-2: Scrubbed vs unscrubbed samples from Hippolyte resource

## 10.2 Alkaline Leaching

The nature of the carnotite mineralisation also translates to improved leaching response. A program of bulk heated alkaline leaches was undertaken at ANSTO Minerals. Figure 10-3 shows the leaching profile by Domain composite for Lazare North and Lazare South. The fine-grained nature of carnotite results in very rapid leaching, with the reaction essentially complete within 8 hours. This is significantly faster than leaching rates for similar calcrete deposits, where leach residence time of 96 hours is often required.

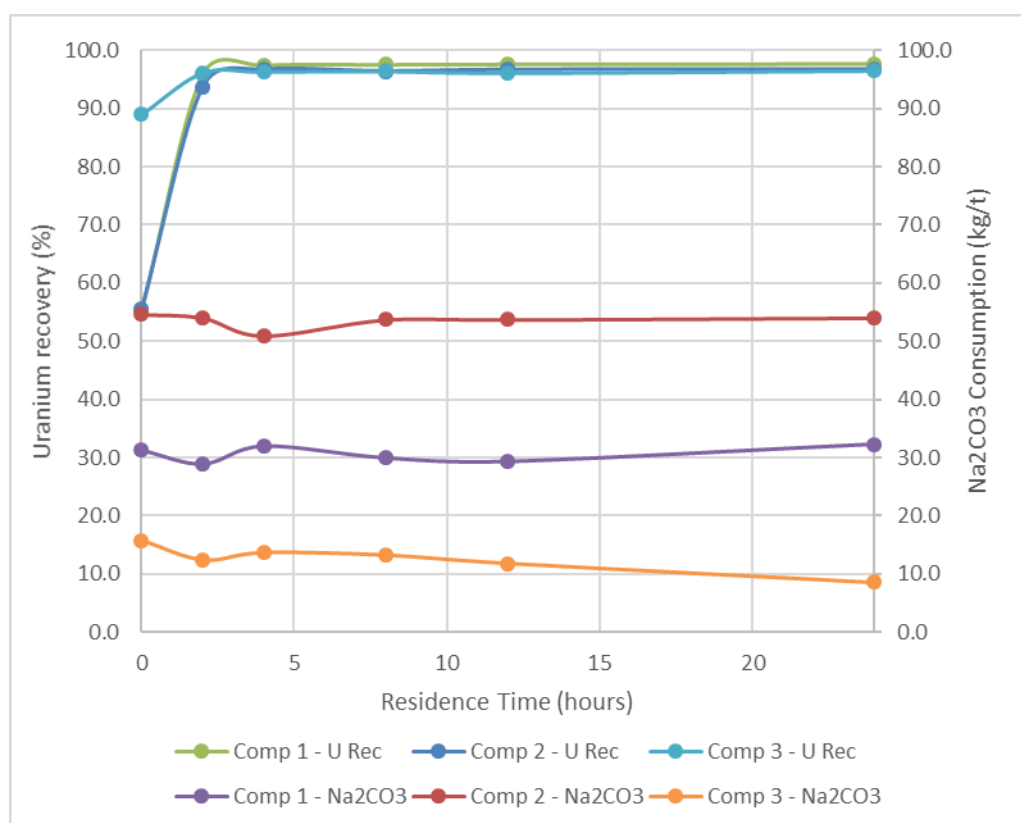


Figure 10-3: Leach behaviour across all Domain composites.

### 10.3 Solid Liquid Separation and Dewatering

The upgrade of carnotite by screening naturally results in concentration of clay minerals. A program of rheological characterisation, including thickener and filtration modelling was undertaken at ANSTO Minerals by Rheological Consulting Services. Vendor test work was undertaken on pressure filtration by Aqseptance in 2022, confirming DFS assumptions.

### 10.4 Ion Exchange

Uranium was recovered from clarified pregnant leach liquor by Ion Exchange at ANSTO Minerals. Ion exchange was undertaken using a fixed bed in lead-lag configuration with a Strong Base Anionic (SBA) Resin. For a nominal 98 % extraction of uranium from the PLS (670 mg/L  $U_3O_8$ ), very close to the maximum loading can be achieved with resin inventories of  $\sim 0.15 \text{ m}^3$  resin per  $\text{m}^3/\text{h}$  of PLS.

### 10.5 Uranium Precipitation and Purification

Uranyl peroxide precipitation sighter tests were performed using a portion of the sulphuric acid digest solution, by the addition of hydrogen peroxide at controlled pH. Samples of the feed and final liquors were analysed by ICP-OES and ICP-MS. The  $UO_4$  was washed, dried, digested in nitric acid and analysed by ICP-OES and ICP-MS. A vanadium removal test was performed by adjusting the SDU digest liquor to approximately pH 2 at  $50^\circ\text{C}$ , prior to  $UO_4$  precipitation at pH 3-4.

### 10.6 Uranium Oxide Concentrate Product

Uranium Oxide Concentrate (UOC) in the form of  $UO_4$  was produced by ANSTO Minerals from concentrate samples generated in the Mintek beneficiation pilot plant. The results shown in Table 10-1 demonstrate that the product is within ASTM standard specification limits without rejection.

	UO <sub>4</sub> wt% U Basis	Limit Without Penalty	Limit Without Rejection
As	<0.001	0.05	0.10
B	<0.07	0.01	0.10
Ca	<0.001	0.05	1.00
K	0.06	0.20	2.00
Mg	<0.001	0.02	0.50
Mo	<0.001	0.10	0.30
Na	0.07	0.50	7.50
P	<0.07	0.10	0.70
S	0.13	1.00	4.00
Si	<0.04	0.23	1.17
Ti	<0.001	0.01	0.05
V	0.02	0.06	0.30
Zr	0.01	0.01	0.10
Cl	0.02	0.05	0.10
F	<0.004	0.01	0.10

**Table 10-1: Tiris UO<sub>4</sub> precipitate impurity concentrations with reference to ASTM standards limit without penalty or rejection.**

The results generated from bulk metallurgical test work program at ANSTO Minerals on concentrate samples from beneficiation pilot program (see JORC Table 1 below and ASX Release: 23rd June 2022)

## 11 Process Plant

The uranium is hosted with ultra-fine grained carnotite (K<sub>2</sub>(UO<sub>2</sub>)<sub>2</sub>(VO<sub>4</sub>)<sub>2</sub>.3H<sub>2</sub>O) that is loosely attached to barren gangue particles. This means uranium-bearing carnotite can be readily separated from barren particles, allowing highly efficient upgrade of uranium concentration by simple scrubbing and screening. This greatly reduces the mass of material for leaching, reducing footprint and throughput for the hydrometallurgical plant.

The processing facility consists of three main sections. These are separated by surge tanks and include:

- Beneficiation circuit
- Uranium extraction circuit (Alkaline leach – solid liquid separation – Ion exchange)
- Uranium purification and precipitation circuit.

There are several process configurations used for recovery and extraction of uranium, predominantly driven by the type of uranium mineralisation. Leaching of uranium can be undertaken in either acid or alkaline conditions. The selection of the leaching system is driven by the ore composition and whether acid or alkaline consuming minerals are dominant. In the case of the Tiris calcrete mineralisation, acid consuming minerals (e.g. calcite and strontianite) are prevalent and preferentially concentrate with the uranium bearing carnotite. Therefore, the Tiris mineralisation is well suited to uranium recovery by alkaline leaching, using the sodium carbonate/ sodium bicarbonate system. The leach is undertaken at a temperature of 90°C with a residence time of 12 hours.

The main commercial process options for solution recovery after leaching are counter current decantation (CCD) using high-rate thickeners, or filtration. The elevated clay concentration in Tiris

leach product means that settling rates are low, and the wash efficiencies for a CCD circuit would be similarly low. This would result in increases in the water balance and high losses of contained reagents. Alternatively, for filtration, while clays lead to slower filtration rates, the efficiency of solution recovery is greater. This leads to more efficient reagent recovery, and higher uranium concentration in feed to recovery circuit. To reduce filtration time the Tiris process utilises a filter-repulp-filter configuration, where washing of the slurry is undertaken in a repulp tank, rather than inside the plate and frame filter.

For alkaline systems the main process options available for recovery of uranium are ion exchange (IX), Resin in Pulp (RIP), or Direct Precipitation. For the Tiris process, ion exchange was selected. For efficient application of Direct Precipitation higher concentrations of uranium in leach solution would be required, to minimise downstream reagent requirements. Similarly, the elevated clay concentration may cause 'blinding' of resin in an RIP system, reducing recovery efficiency.

After ion exchange the resin loaded with uranyl carbonate is eluted using sodium bicarbonate. The eluted uranium stream is then further concentrated by nano-filtration, and sodium bicarbonate recovered for recycle back to the leach circuit. Uranium is then precipitated with sodium hydroxide as sodium diuranate (SDU). The SDU precipitate is filtered and dissolved in sulphuric acid as uranyl sulphate, ready for final precipitation.

Uranium is precipitated with hydrogen peroxide to form the final uranyl peroxide ( $\text{UO}_3$ ) product.  $\text{UO}_4$  will then be dried or calcined to form the final Yellowcake product. Yellowcake is a term used to cover all Uranium Oxide Concentrates (UOC), which may include  $\text{UO}_4$ ,  $\text{UO}_3$ ,  $\text{UO}_2$  or  $\text{U}_3\text{O}_8$ .

The final UOC product will be packed in secure 205L IP-1 open head steel drums and strapped within a 6m container for transport by road to the Port of Nouakchott.

Figure 11-1 summarises the Block Flow Diagram for the process and Figure 11-2 shows the proposed plant layout.

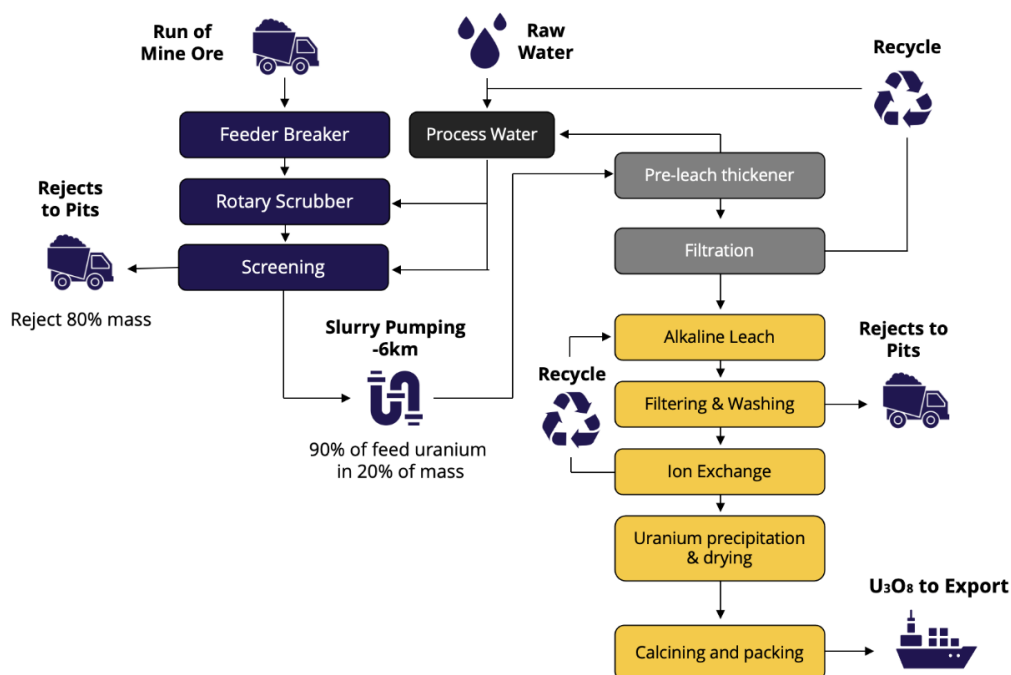
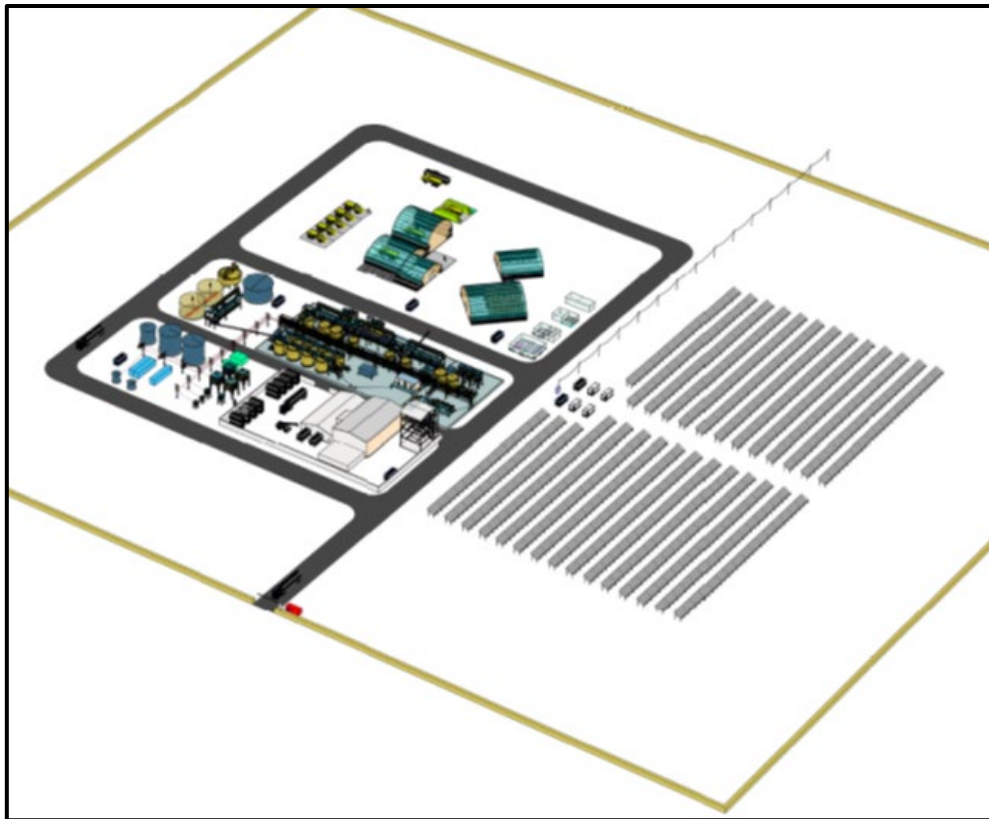


Figure 11-1: Process block flow diagram





**Figure 11-2: Processing Plant Layout**

### **11.1 Processing Trains**

The 2021 DFS provided a base case for design of 1 modular processing train. A modular design was selected to allow simple addition of additional processing trains to facilitate expanded production. On this basis the Enhanced Feasibility Study has assessed expansion options through incremental addition of modular units.

The design capacity of modular process trains is:

- Beneficiation circuit: 1.25Mtpa Run of Mine (ROM) ore.
- Leaching, IX and precipitation circuit: 230,000tpa Leach feed.
- Precipitation and Packaging circuit: 3.5Mlb per year UOC.

### **11.2 Modular Beneficiation circuit**

The Tiris Eastern resources are spread over 64 km east-west and 36 km north-south, so the transport of ore is a significant consideration. Refer to Figure 11-3 for spread of Tiris resources.

The Tiris mineralisation allows for rejection of 85-90% of ore mass as barren rejects, through a simple beneficiation process. To optimise the material transport, a modular transportable beneficiation circuit located close to the resources was incorporated. The trucks have a transport distance of around 1-2 km to the beneficiation stage, and slurried product is pumped to the processing plant. Refer to Figure 6 for process plant location at Lazare centroid.



The modular beneficiation circuits and the hydrometallurgical process plant are in separate locations connected by pipelines, used to transfer slurry, liquid recycling, and raw water.

The ramp up mine schedule focuses on mining of Lazare South resources over the first 2 years with a single modular beneficiation circuit. In stable operation from year 3, mining hubs will be established at the Lazare, Sadi and Hippolyte Resources, each with a modular beneficiation circuit. The beneficiation circuit has been designed to be transportable. Given that this will stop all production until all the plant systems and utilities are re-connected and re-commissioned, a highly planned shutdown will be required. An allowance of 4 weeks to shift the beneficiation circuit each time has been made in the mine schedule.

The modular and transportable front end beneficiation circuit comprises: -

- ROM ore Feeder-Breaker unit
- Rotary wet scrubber 2.4 m diameter x 4.8 m long.
- 3 sets of 2 screens with screen apertures of 2mm, 300 micron and 150 microns.
- Waste conveyor and radial stacker for the 85% rejects.
- Agitated surge tank for storing slurry
- Slurry pumps to pump slurry some 6 km to Process plant

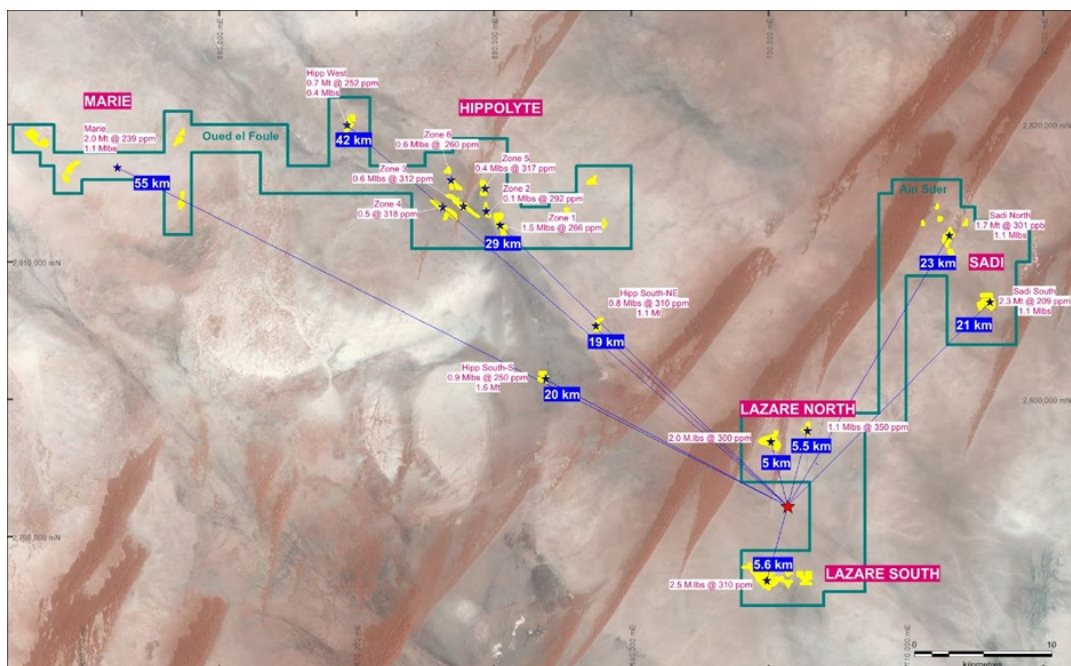


Figure 11-3: Resource distances to Lazare processing plant

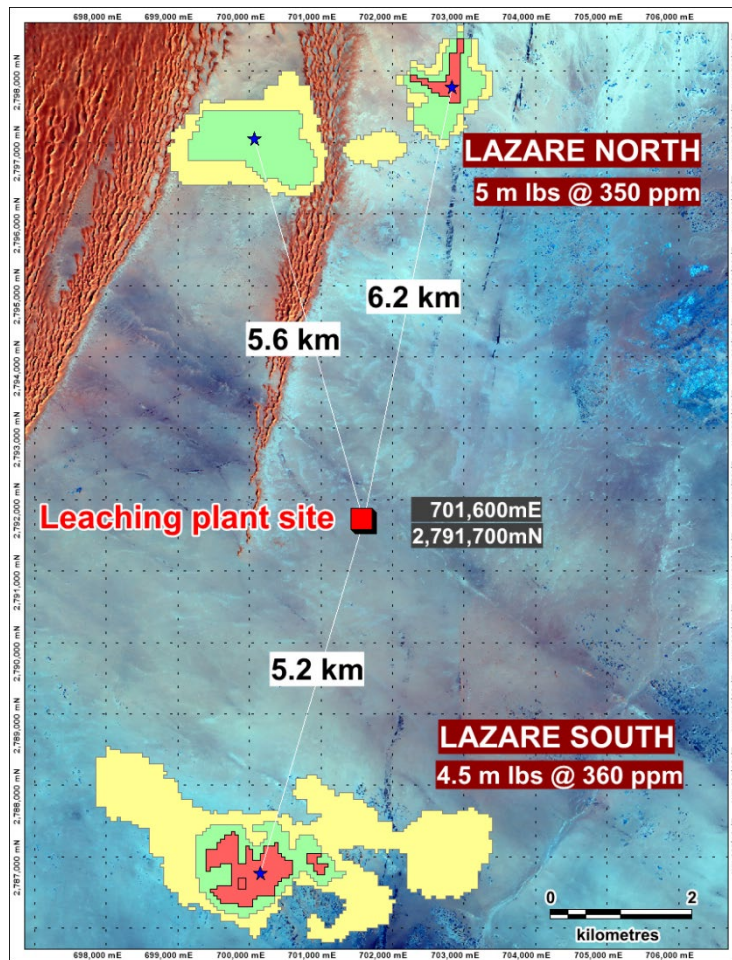


Figure 11-4: Optimized (Opex/Capex) site location for Lazare Resources

### 11.3 Modular processing circuit

Connecting the Beneficiation front end and the permanent process plant, there are 3 surface run HDPE pipelines some 6 km long as follows: -

- The 225 DN, PN25 PE 100 fines slurry line transferring pumped slurry to the process plant,
- The 200 DN, PN 25 PE 100 liquor recycle line returning filtrate from the process plant to the beneficiation front end,
- The 32 DN, PN16 PE 100 raw water supply line providing raw water to the beneficiation front end.

These will be fully welded into section lengths able to be safely dragged without damage, during the relocation stages. Flanges would connect the section lengths.

The Process plant major equipment shown in Figure 11.5 comprises: -

- A hi-rate carbon steel pre-leach thickener, ten metres diameter with three metre walls,
- Four agitated surge tanks, providing 24 hours downtime capacity for the downstream process plant,
- A 650m<sup>2</sup> filter press feeding a cake transfer conveyor,
- Six agitated leach tanks 6.1 m diameter, 6.4 m high,

- A diesel steam boiler package and two associated heat exchangers, to heat the slurry to 90 degrees C,
- Three 26 m long plate and frame filters filtering the barren liquor from IX, and filtrate from product dewatering,
- IX feed tank and three IX columns,
- SDU Precipitation circuit, including thickener, decanter centrifuge and tanks.

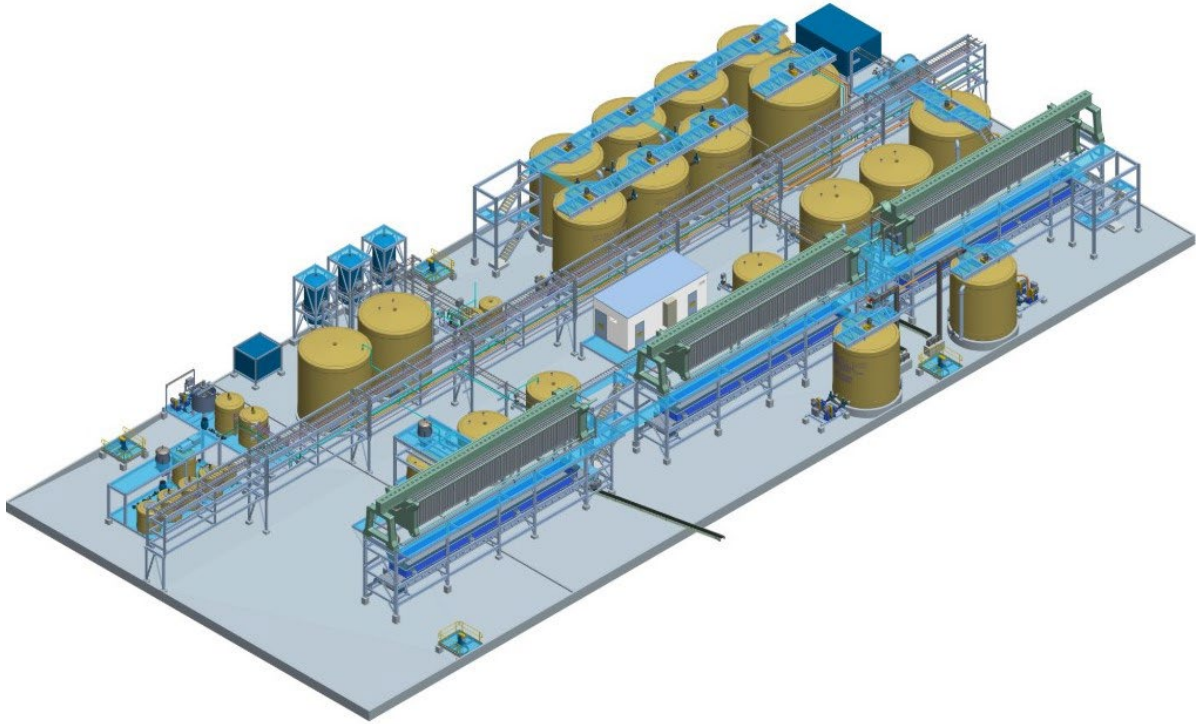


Figure 11-5: Isometric plan of leach, ion exchange and precipitation circuits

#### 11.4 Modular precipitation and packaging circuit

A modular, containerised precipitation and product packaging circuit shown in Figure 11.6 has a design capacity to produce up to 3.5Mlb per year UOC will be used, including:

- Product Precipitation plant including fluid bed crystalliser, dewatering centrifuge, 150 kW rotary kiln, vent scrubber, and drum packaging plant.

The Modular Dewatering, Drying/Calcining and Drum Packing Plant will be pre-assembled modules. They will be located within the main plant perimeter in a secure building, with restricted and controlled personnel access.

The dewatering, drying, off-gas modules, dust collector and yellowcake buffer hopper will be in an enclosed and sealed area of the Drum and Packaging (D&P) building, to prevent any fugitive dust from escaping from the process plant area. The Drum Packing Module will be on the clean side of the D&P building.



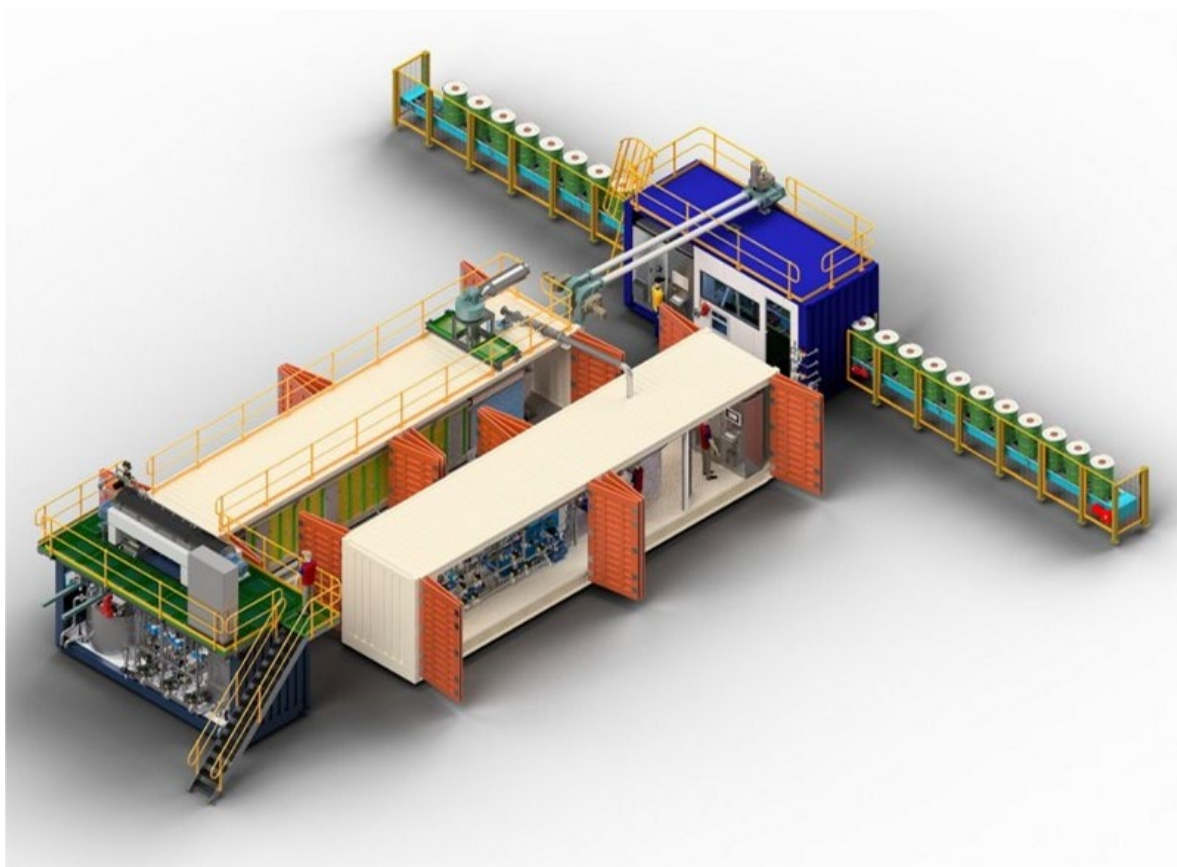


Figure 11-6: Isometric plan of UOC drying and drum packaging plant

## 11.5 Ramp up Phase

The mine schedule has been developed to allow for a ramp up phase of two years. This will provide Aura with the opportunity to stabilise operations, logistics and fully train the workforce.

The ramp up phase, with mining rate of 1.25Mtpa ROM material, will include circuits at design capacity summarised in Table 11-1

Modular Circuit	Number circuits	Design Capacity
Beneficiation	1	1.25 Mtpa
Leaching, IX, Precipitation	1	0.23 Mtpa
Product precipitation and packaging	1	3.5 Mlbs pa UOC

Table 11-1: Circuit configuration for ramp up phase.

## 11.6 Operations

Through the ramp-up phase procurement and construction will be undertaken for additional modular circuits to achieve full operational capacity. The incremental addition of modular circuits provides Aura with the capacity to tailor expansion in a capital efficient manner, with minimal operational risk.

The operation will target a mining rate of 4.18Mtpa ROM material and will include modular circuits with design capacity summarised in Table 11-2.

Modular Circuit	Number circuits	Design Capacity
Beneficiation	4	1.25 Mtpa
Leaching, IX, Precipitation	2	0.23 Mtpa
Product precipitation and packaging	1	3.5 Mtpa UOC

Table 11-2: Circuit configuration for operations phase.

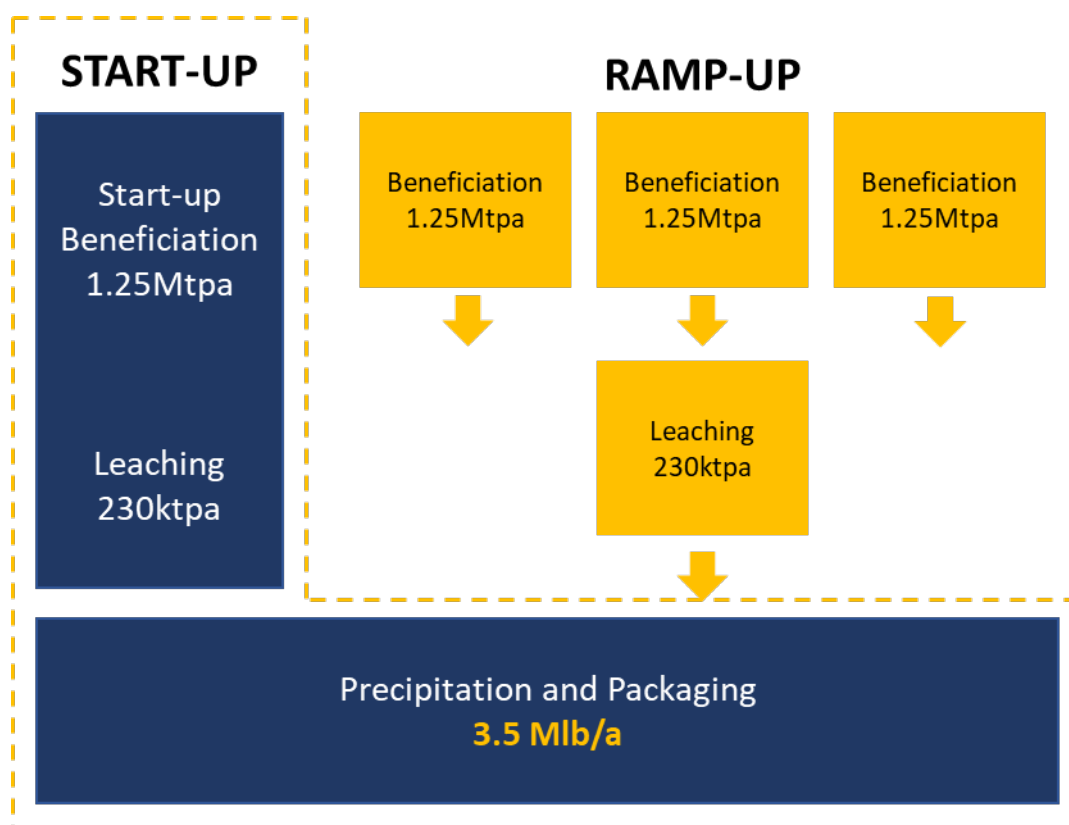


Figure 11-7: Flow diagram of process circuit configuration through start up and operations phases.

Test work has demonstrated that beneficiation at a screen cut size of 75µm is readily achievable. It has been assumed that in stable operations these screening conditions will be used, resulting in higher leach feed grade and more efficient use of modular leach circuit capacity.

The profile of leach feed material can be seen in Figure 11-8.

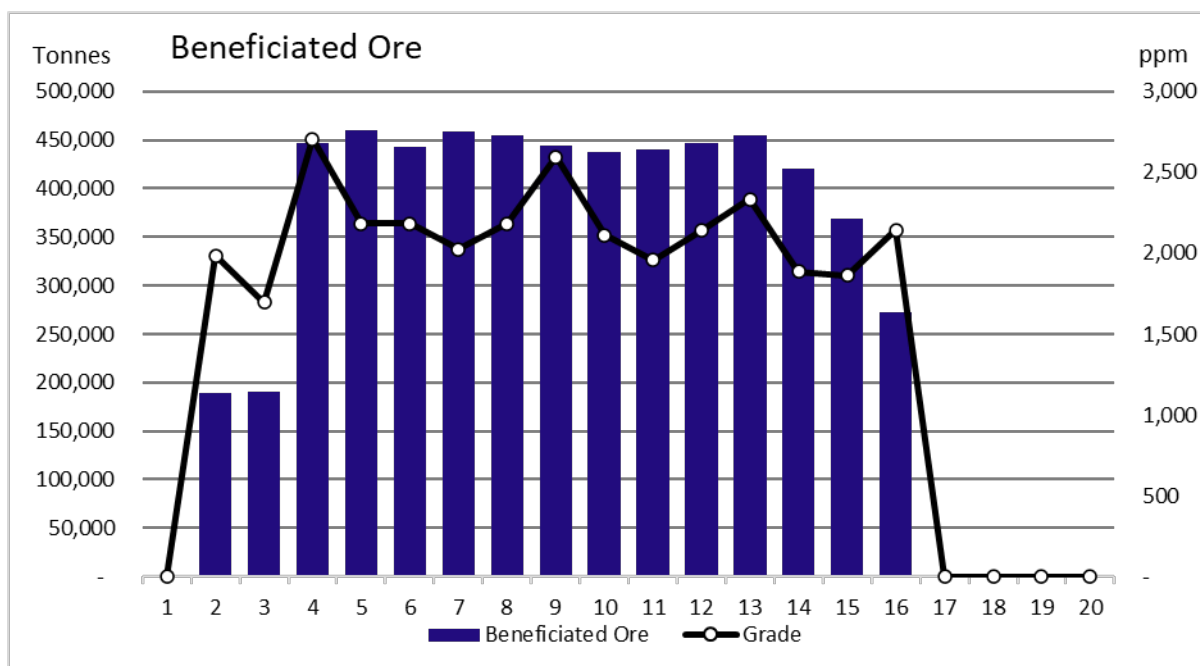


Figure 11-8: Beneficiation ore (leach feed) and grade profile for LOM

The  $U_3O_8$  production profile across the Life of Mine (LOM) can be seen in Figure 11-9. This shows an average  $U_3O_8$  production rate of 2.0Mlb per year through the first 10 years of the operations phase. Peak UOC production of 2.4Mlb pa  $U_3O_8$  will be achieved in year 4.

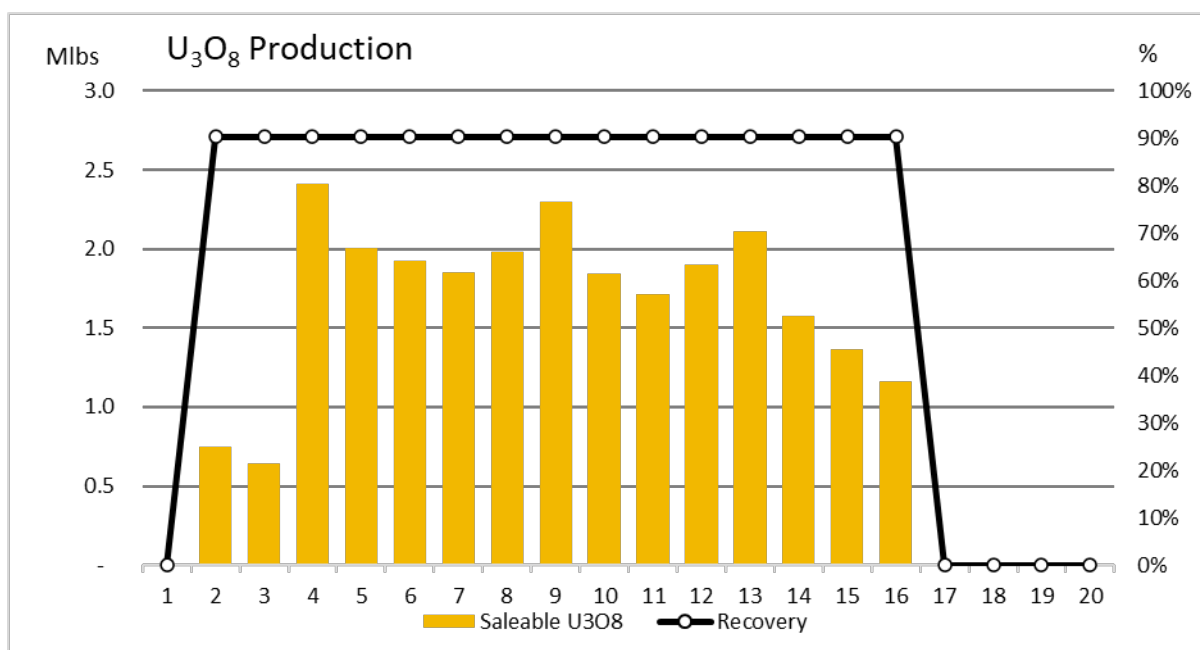


Figure 11-9:  $U_3O_8$  production profile with recovery for LOM

## 11.7 Tailings

The permanent process plant produces a 300,000m<sup>3</sup>/year tailings stream from the leach pressure filtration module at 25% moisture content. The leach plant tailings would be stockpiled on a slab by a belt conveyor and loaded by a front-end loader into mining trucks. For approximately the first 6 months, the tailings would be transported to tailings dam some 1,100m northeast of the plant. The tailings dam would hold 75,000m<sup>3</sup> of tailings, with dimensions 250m by 180m by 2m deep. When adequate voids are available in the mined-out areas, the dewatered tailings would be trucked directly to the mined-out areas for in-pit disposal, at the base of the pits. The tailings would then be covered by barren reject material, mine waste and overburden.

It has been assumed that no lined geotechnical membrane will be required underlying the tailings dam. Aura will have to confirm from testing the likely concentration of radiation levels in leach plant residue, and whether any groundwater issues will be caused. The required waste and overburden coverage above the tailings requires confirmation.

At the front-end beneficiation plant, there is a barren rejects stream produced of coarser material (2,100,000m<sup>3</sup>/year) discharged from the 3-stage screening unit. This reject material will be predominantly between 2mm and 75µm in size and be initially used to build berms on the windward side of the pits to reduce dust levels. Once sufficient voids are available in the mined-out pits, these rejects would be back filled into the mined-out areas, and subsequently covered with mine waste and overburden. Having the front-end plant within 1km of the open cut pit reduces trucking to reasonable levels.

## 11.8 Water Supply

In the ramp up phase the 1.25 Mtpa process operation requires between 0.5 and 0.6 GL of water per year, supplied to the plant. Of this, 150 litres/person/day is required for personnel use, and 0.17 GL of raw water for dedusting roads and ongoing roadworks. Only some 40,000 m<sup>3</sup>, (or 7%) needs to be converted by a water treatment plant to demineralised or potable quality, as the process can utilise water with a moderate degree of salinity.

Of 4 regional water sourcing options initially identified by hydrological consultants, Aura's water search and development activities have focussed on the closest source, the Oued El Foule Depression, an extensive drainage system, the central axis of which is less than 20 km from the Tiris plant site.

Aura identified a number of major structures likely to host water and carried out ground geophysics (resistivity and EM) over 24 targets within 50 km of the proposed plant. 15 of the most promising targets were selected for drilling. To date 6 of these targets have been drill tested, three of which yielded significant water flows. The best of these, Target C22, was followed up with detailed ground geophysics for optimum siting of drill holes. C22 was tested by 8 water bores and 5 monitoring holes, and 72-hour pump testing was carried out on 7 of the bores.

The C22 aquifer is relatively shallow with standing water level starting at 28m depth and no water deeper than 61m in drilling to date. While C22 contains sufficient water to supply the operation for many years at 0.6 GL/yr, modelling by Groundwater Exploration Services Pty Ltd in Australia, has suggested that due to porosity and permeability characteristics of the aquifer a pumping rate greater than 0.25 GL per year may not be able to be sustained.

The C22 aquifer remains open at its southern end where the best water flows were encountered. A program of geophysics completed in this area has indicated good prospects for extending the aquifer to the south, and a drilling program to test this has been prepared.



Additionally, the strike rate in water drilling to date and the number of targets yet to be tested indicate a strong likelihood that drilling will locate additional water supply for the relatively low water requirement of the Tiris Project. Two producing water bores (shown in figure 11.10) were drilled by the Mauritanian Government to supply informal mining activity and demonstrate the presence of reliable water supply within 70 km of planned operations.

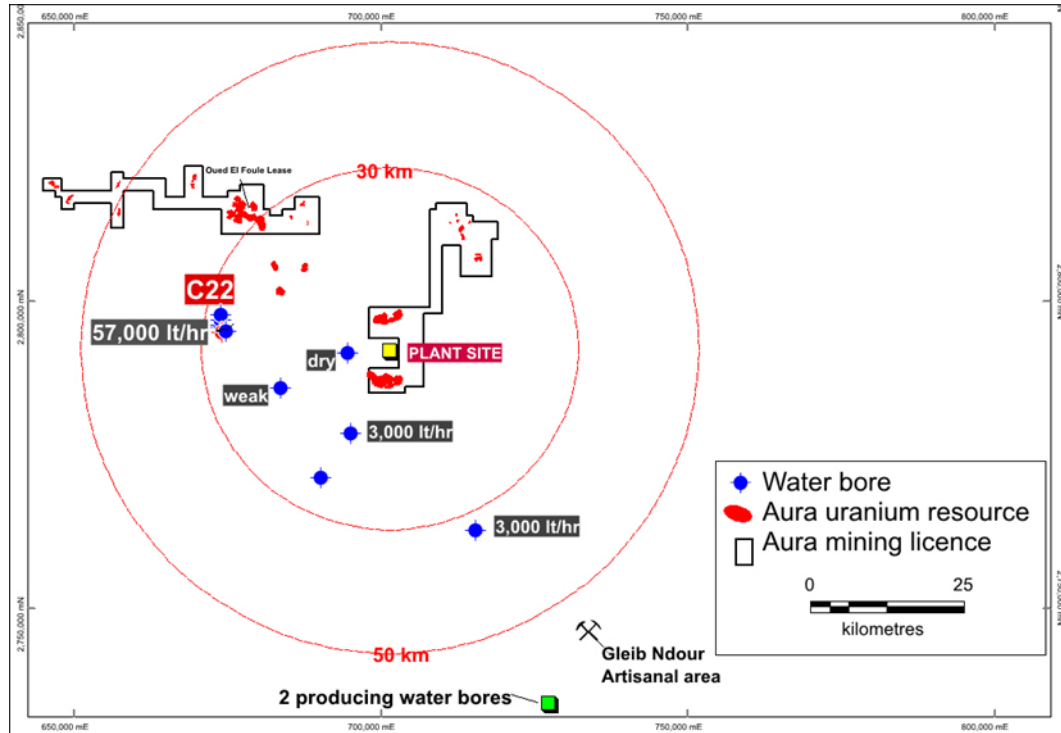


Figure 11-10 – Water drill hole locations in relation to project area

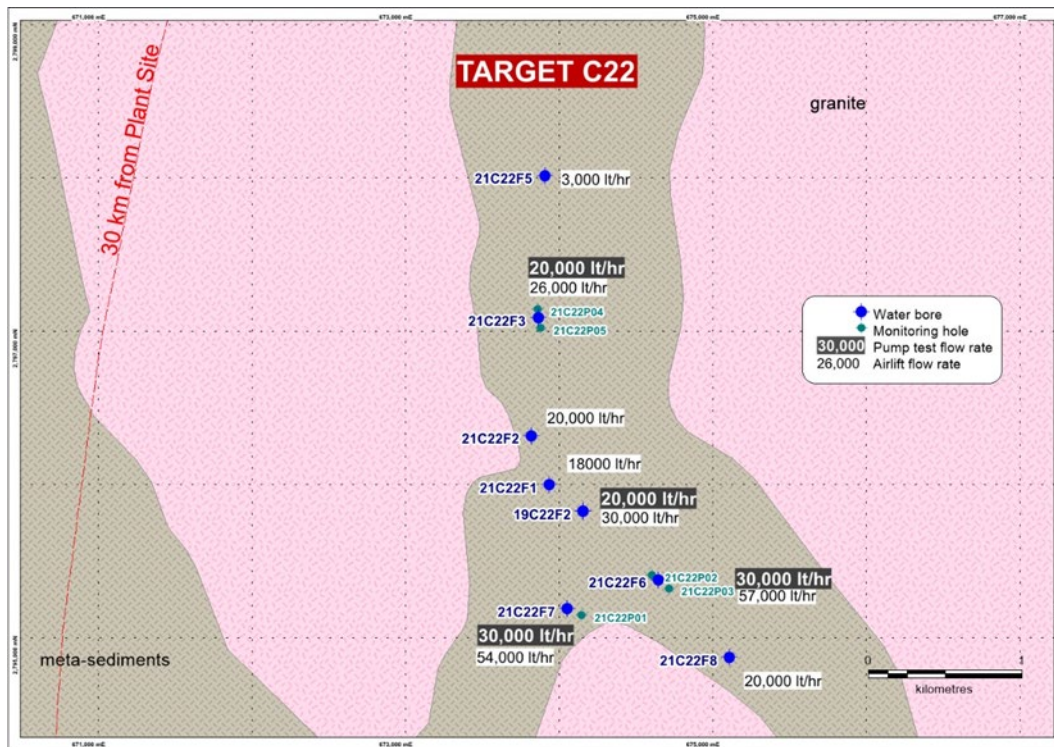


Figure 11-11 – C22 aquifer

Figure 11-10 shows the location of the six water bores drilled to date, and the C22 aquifer in relation to mining leases and planned operations. The two producing water bores shown in green were drilled by the Mauritanian Government to supply informal mining activity and show the presence of reliable water supply. Figure 11-11 shows drilling within the C22 aquifer, along with measured flow rates.

Small 24 kW dedicated diesel generators will be used at each borehole to power the 11 kW submersible lift pumps, and the 3kW transfer pumps. Similarly, a 48 kW diesel generator is required at the main pumping station, to power the duty and standby 37 kW pumps. The local fuel tanks will have a two week capacity and be supplied by an Aura fuel truck or trailer from the main process plant diesel storage. Telemetry will be installed to provide the control linkage and hourly reporting, back to the main process plant.

The twelve-hour capacity raw water storage tank at the process plant, will supply water for firefighting, dust suppression and to the Reverse Osmosis (RO) water treatment plant.

The containerized RO water treatment plant will produce both potable and demineralized water, with storage for 48 hours potable water and 4h demineralized water. Water will then be reticulated from these tanks to accommodation, administration, and laboratory buildings as well as to the process plant, and to the camp via a 3 km pipeline. Potable water requirements for the transportable front end and mining offices will be trucked down in a suitable water tanker, to smaller portable tanks there.

## 12 Infrastructure

The infrastructure component of the Tiris Project includes all supporting facilities located outside the mining area. Infrastructure includes the engineering design, procurement and management for the following site infrastructure works:

- Internal roads within the process site, and minor roadworks on the 680km site access road from Zouérat.
- Bulk earthworks
- Accommodation camp installation, reticulated services, waste disposal, water treatment and associated infrastructure.
- Transportable buildings including offices, change rooms, crib rooms and ablutions.
- Communications systems
- Steel framed buildings including workshops, warehouse, and uranium packaging building.
- Power reticulation across the project site.
- Site security.
- Process plant security.
- Remote water borefield and pipeline.

### 12.1 Site Works

The process plant area includes a heavy vehicle workshop, which will carry out maintenance on all the mining fleet. All the designated road areas within the process plant area, and the process plant equipment area, will require some soil compaction to avoid settlement. Key process equipment/traffic areas will be prepared by stripping the topsoil, proof rolling the area and installing a crushed compacted granite sub-base. Earthworks will thus be limited to the minimum required only. No earthworks are planned for the camp 3km northeast of the process plant, due to the low building weights involved.

### 12.2 Access Road

Figure 12.1 indicates the route proposed utilising trucking on the existing 767 km N1 sealed highway from Nouakchott port to Zouérat. From Zouérat, there is initially 15 km of sealed road, then a 665 km unsealed desert track to Tiris.

Some limited road works will be required on the 665 km unsealed section prior to construction commencing, to ensure all trucks (2WD & 4WD) can reliably travel from Zouérat to the Tiris site in two days. The route will be marked clearly, and soft sand sections replaced with crushed compacted rock fill. A permanent road maintenance crew will then be required during construction and ongoing operations to keep the road in satisfactory condition.

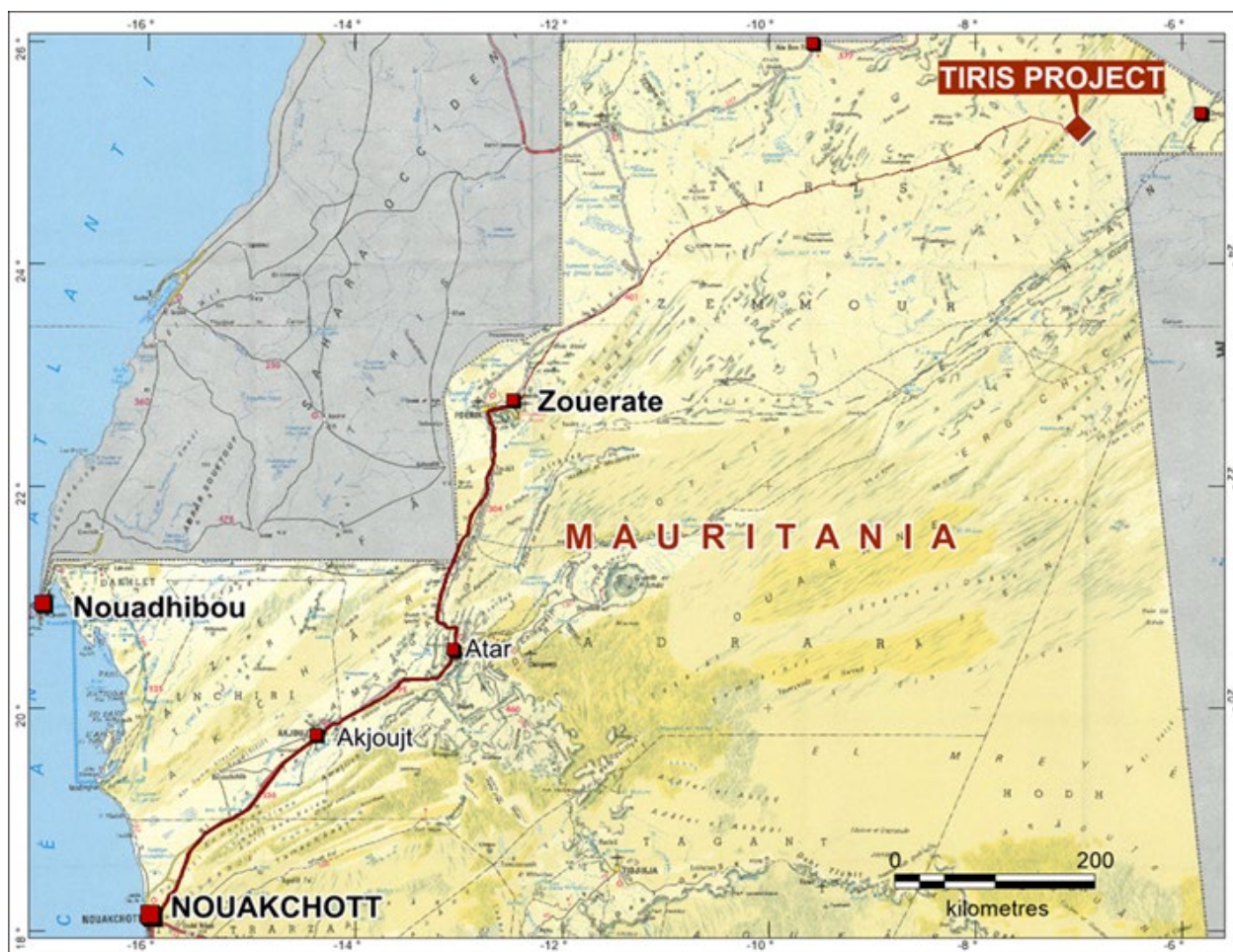


Figure 12-1: Proposed site access route from Nouakchott via Zouérate



### 12.3 Accommodation Camp

The camp will consist of accommodation for 200 personnel in total, including an allowance of visitors. Security, kitchen and dining facilities, a large recreation room, a prayer room and storage facilities will be provided. Camp accommodation and support buildings will be located some 3km north-east of the plant site, to reduce the effects of windblown dust and noise from the operations.

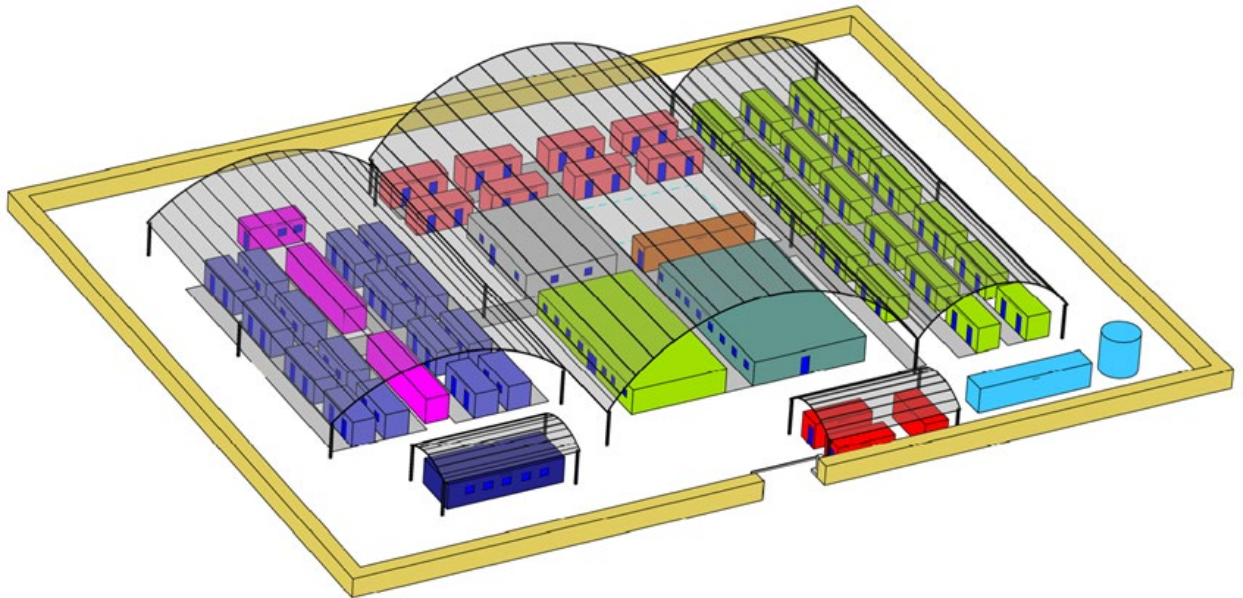


Figure 12-2: General view of accommodation camp

### 12.4 Communication Systems

Aura will install a fully managed VSAT solution, coupled with Wireless and Wi-fi extensions. Satellite telecommunications systems are well proven, given that numerous other remote mining companies in Africa are using similar systems.

A guaranteed pool of 10 Mbps dedicated bandwidth will be provided. It will be dynamically allocated as required between the VSATs, with input by Aura. Wi-fi connectivity then extends coverage within the Aura transportable front-end and mine buildings, process plant and camp.

### 12.5 Electrical Power Supply

The electrical power supply for the Tiris plant comprises supply of power to four separate locations as follows:

- The transportable front-end plant comprising beneficiation, screening, and slurry pumping.
- The permanently located process plant comprising leaching, ion exchange, precipitation, and carbonation, SDU purification, UO<sub>4</sub> precipitation and packing, workshops and administration facilities.
- The permanently located construction/operations camp 3.3 km NE of the process plant, supporting 200 bed accommodation with kitchen/dining room, recreation hall, prayer room and camp management offices.

- The remote water borefields and water pumping station some 31 km southwest of the process plant.

The following table summarizes the total power peak demand per area and the related power generation required (Table 12-1)

Area	Peak Demand (kW)	DG installed power (kW)	Solar installed power (kW)
Front-end	1,829	5 x 400	-
Permanent Plant	3,564	4 x 1,200	2,160
Camp	650	From plant	From plant
Remote water supply	225	3 x 48 4 x 48	-
Total	6,268	7,136	2,160

**Table 12-1: Electrical load requirements for the Tiris Project in full operation.**

The camp is powered through a 3km long overhead 11 kV powerline from the Process power plant, with 415V/11Kv transformers at either end.

The Transportable Front-end plant is powered by diesel generators, which is a more economical solution rather than a MV/HV powerline from the permanent process plant. Relocating the front-end four times in the first ten years of operation will be easier with transportable generators.

The permanent plant site and camp have an estimated peak demand of 3,370 kW, requiring four off 1,500 kVA diesel-powered generators. Two will operate most of the time, with one on standby and one for redundancy.

A 2,160-kW solar power plant will provide most of the permanent plant electricity during daylight, with solar supplying 30% of the total energy consumed per year.

## 12.6 Airstrip

Charter flights to site for medical evacuations and essential executive travel will initially use the existing Shield Mining airfield, located 152 km from the site. Re-licencing is required for this 1,100m long by 39m wide airstrip.

After a few years of operation, a daylight hours airstrip is expected to be built on the project site, some 2km from the Tiris process plant.



**Figure 12-3: Existing Shield Mining airfield**

### **12.7 Zouérat Offices, Administration and Guest House**

Aura Energy will need to set up an administration office based in the key location of Zouérat. Zouérat will be the key source of much site labour, and initial inductions and training required would be carried out there. During Construction and Operations, workers would be bussed the 680 km to site from Zouérat by Aura's bus fleet.

A local guest house with dining facilities will also be required for the frequent stopover periods of expatriate specialists or management flying into Zouérat from Nouakchott and travelling on to site.

## **13 Environmental and Permitting**

A comprehensive Environmental and Social Impact Assessment (ESIA) was completed in 2017 by Earth Systems, an internationally recognised consulting group with extensive experience in mining and uranium extraction.

The ESIA pays close attention to issues of radiation exposure and security of the uranium 'yellowcake' product. Throughout the ESIA and the associated project design and management measures, best practice guidelines from the International Atomic Energy Agency (IAEA) and the International Commission on Radiological Protection (ICRP) have been used, complementing the applicable Mauritanian regulations and guidelines.

ESIA was fully approved by the Mauritanian Government on 5th October 2017

### **13.1 Physical Setting**

### **13.2 Climate and Meteorology**

The project is in the hyper-arid zone of northern Mauritania receiving only very rare rainfall. Annual average rainfall rarely exceeds 20 mm around the Eastern resources and 50 mm around the Western resource.

The region is subject to Harmattan winds, a north-easterly trade wind that occurs during dry conditions and can result in extensive and dense clouds of dust that can form dust or sandstorms.



### **13.3 Naturally Occurring Radioactive Material (NORM)**

Uranium in the environment is a form of Naturally Occurring Radioactive Material (NORM). The uranium mineralisation targeted by the Tiris Uranium Project is a near-surface accumulation of carnotite (potassium uranium vanadate) that has formed by cyclical near-surface weathering, dissolution, evaporation and reprecipitation.

The annual NORM radiation dose in the resource areas is predominantly in the range 0.02–1.7 mSv/y, with fewer than 1% of readings above this value (up to 23 mSv/y). The worldwide average annual radiation dose from natural sources is 2.4 mSv/y but due to elevated NORM sources, some areas can be as high as 6–12 mSv/y.

### **13.4 Air Quality**

Dust is the main determinant of air quality in the project region. Natural wind-blown dust levels are typically high and likely to exceed international inhalable particulate health criteria on a regular basis.

### **13.5 Social Setting**

The project is in a very sparsely populated region of the Sahara Desert, in a designated military Prohibited Zone. This Zone is enforced due to smuggling activity across adjoining borders.

The nearest permanent settlements are Bir Moghreïn (pop c. 3000), 460 km west of the Eastern Tiris Resource Area), and provincial capital Zouérat (pop c. 45,000), 620 km west southwest. Other populations in the region include a small military base at Cheggat, 105 km from the Eastern Tiris resources, a small military outpost at Ain Ben Tili, 15 km north of the Western Tiris Resource Area, and a small settlement located across the border in Western Sahara within 20 km of the Western Tiris Resource Area.

No nomadic groups were identified in the broader region surrounding the Eastern Tiris Resource Area, and the area is not in the normal range of nomadic families.

Artisanal gold miners make temporary settlements in the region, and there is currently such a settlement 55 km southeast of the project at Gleib Ndour.

### **13.6 Land and Water Use**

There is no permanent land use in the vicinity of the project areas.

### **13.7 Archaeology and Cultural Heritage**

A survey of the project areas and surrounds in January 2017 identified 29 archaeological sites (principally burial sites) in the vicinity of the project areas (12 at the Eastern Tiris Resource Area and 17 at the Western Tiris Resource Area). Five additional sites of cultural heritage significance are in the broader area surrounding the project.

## **13.8 Risk Assessment**

### **13.8.1 Radiation Impacts and Measurement**

Careful management will be applied when extracting and processing the uranium mineralisation to prevent or minimise potential radiation exposure for workers, the public and the surrounding environment. The project will produce on site a uranium ore concentrates (UOC) or 'yellowcake', in a benign oxide form. UOC is not toxic, has low radioactivity and is safe to transport. UOC is not fissile, it does not undergo any nuclear reaction and has no use or value without technological enrichment. Enrichment is only conducted at a small number of highly regulated enrichment facilities around the world. The activities at the Tiris Uranium Project deal only with naturally occurring materials, and do not create any 'new' sources of radiation.

### **13.8.2 Terrestrial Fauna**

The estimated exposure of terrestrial fauna to radiation associated with project activities is 0.045 mSv/d (15.88 mSv/y), which is significantly below the US Department of Energy guideline (DOE-STD-1153-2002) levels (20 times lower). The risk of radiation impacts on fauna is therefore expected to be negligible.

### **13.8.3 Terrestrial Flora**

The Eastern Tiris Resource Area is devoid of vegetation and the Western Tiris Resource Area is only sparsely vegetated with grasses in limited areas. The estimated exposure of terrestrial flora to radiation associated with project activities is 0.044 mSv/day (15.70 mSv/y). The total estimated radiation dose is significantly below the guideline levels (200 times lower) indicating that the risk of radiation impacts on flora is expected to be negligible.

### **13.8.4 Aquatic Ecology**

Fugitive radioactive dust could accumulate in surface waters following rare rainfall which could result in the risk of radiation exposure to aquatic biota. However, the residual impact is expected to be negligible.

### **13.8.5 Land Use**

With no permanent settlements or land use in the vicinity of the project, impacts on existing land use are expected to be negligible throughout construction, operations, de-commissioning, and post-closure.

### **13.8.6 Terrestrial Biodiversity**

There are no international, national, or regional protected areas or reserves in proximity to the project areas.

The small amount of habitat loss associated with the siting of project infrastructure is not likely to be significant for species conservation in the region. No species are expected to be lost due to the development of the project or have a significant proportion of their range affected.

### **13.8.7 Hydrology**

Due to the rarity of rainfall and absence of surface water, the overall expected impact of the project on hydrology is expected to be negligible. However, the risk of flooding during rare rainfall needs to be considered in the siting and design of project components, to protect project personnel and infrastructure.

In the production bore area, the expected impact of the project on local hydrogeology is expected to be low due to local temporary groundwater drawdown, and the absence of beneficial users.

During the Operations Phase, the expected impact of the project on water quality is expected to be low and localised. The principal residual risks are:

- the potential for water contamination during flood inundation should such inundation exceed design flood controls
- and the low potential for downstream accumulation of wind-blown dust that escapes project dust management measures.

Post-closure, the site will be returned to the pre-development landform and soil/overburden cover, including the removal of any identified surface contamination. The post-closure impact of the project on water quality is expected to be negligible.

The naturally high ambient dust levels of the region will be one of the principal concerns for workers' health. Ambient air quality in the region has the potential to exceed IFC/WHO air quality guidelines during dust storms and Harmattan dust haze events.

The primary potential air quality impact associated with project activities is the potential for fugitive dust emissions from mining and processing. Dust modelling indicates that dust emissions are expected to be localised within the vicinity of operations. There are no permanent settlements in the vicinity of the project areas or on the route, and no significant wildlife or vegetation. Therefore, dust generation from mining, processing and transport activities is not expected to result in any significant impact beyond the worker community.

### 13.8.8 Archaeology and Cultural Heritage

No World Heritage Sites or otherwise internationally recognised archaeological or cultural heritage sites are located close to the project.

No archaeological sites were identified in the current resource zones, however, eight sites were identified within 250 m of a resource zone and will require management to avoid potential indirect impacts. Allowance has been made for fencing or relocation of any affected archaeological sites.

No cultural heritage sites were identified in proximity to the project areas and no cultural heritage impacts are expected.

### 13.8.9 Cumulative Impacts

The project lies in a remote, underdeveloped, and unpopulated area of the Sahara Desert and cumulative impacts associated with the project are therefore expected to be minimal.

The project is expected to help progress the socio-economic development of the region through procurement of goods and services and continue the development of Tiris Zemmour as an important economic area for Mauritania.

### 13.8.10 Other Impacts

Other potential impacts likely to be associated with the development of the Tiris Project are:

- **Traffic and transport:** The principal transportation route from Zouérat to Tiris is unpopulated, lightly trafficked by other road users, has few nearby settlements, and is subject to controlled

access under military authority. Some roadworks will be required on the 665km desert track to ensure 2WD construction traffic can make this trip in 2 days in daylight. Implementation of the management and mitigation measures outlined will ensure that potential impacts are minimised.

- **Community health and safety:** The project is expected to improve local health facilities and services directly and indirectly in the Tiris Zemmour region through the implementation of a community development program, and the economic development and employment opportunities created. Potential community health risks and potential health impacts are expected to be very low or non-existent for the Tiris Project due to the remoteness of the project site.

## 14 Project Implementation

The approach proposed for the engineering, procurement, logistics, construction and commissioning of the Tiris Uranium plant and infrastructure is summarised below. The project will be run by the following parties, coordinating with each other:

Owner's team: dedicated team from Aura.

Main engineering contractor: Australian engineering company with African and modular knowledge and experience, providing the Engineering Procurement or EP components.

Technology suppliers: engineering companies for the two main parts of the process plant, where specific knowledge and experience about uranium processing is required. These two suppliers are virtually turnkey designers, but with site commissioning only.

Vendors: companies from around the world that will supply the different equipment and material.

Site contractors: companies mainly from Mauritania or with experience in the country, that will perform the installation works, providing services required in country and on site.

Logistics contractor: responsible for all construction equipment pick up, delivery to port, shipping, customs clearance and transport to Aura's site warehouse at Tiris.

The strategy is to contract the main engineering contractor to engineer and procure. This involves managing procurement of supply packages, and setting up the site installation contracts for and on behalf of Aura. The owner's team is then responsible for construction management, including the site contract administration with site installation contractors.

As some of the detailed process technology will be provided by others, the main engineering contractor will act as an "Integrator" for various aspects of the project. Where equipment is supplied by others, this involves integrating the equipment interfaces with the balance of the plant, including foundations, steelwork, piping and electrics. The main engineering contractor also ensures that all services required by the equipment are provided, e.g. power, water, compressed air.

At practical completion the main engineering contractor supplies all drawings, documentation and Operating and Maintenance manuals required to run the plant.

## 15 Project Schedule

The Tiris Project schedule is expected to have the following time scale to undertake site works and commission the first modular process train:-

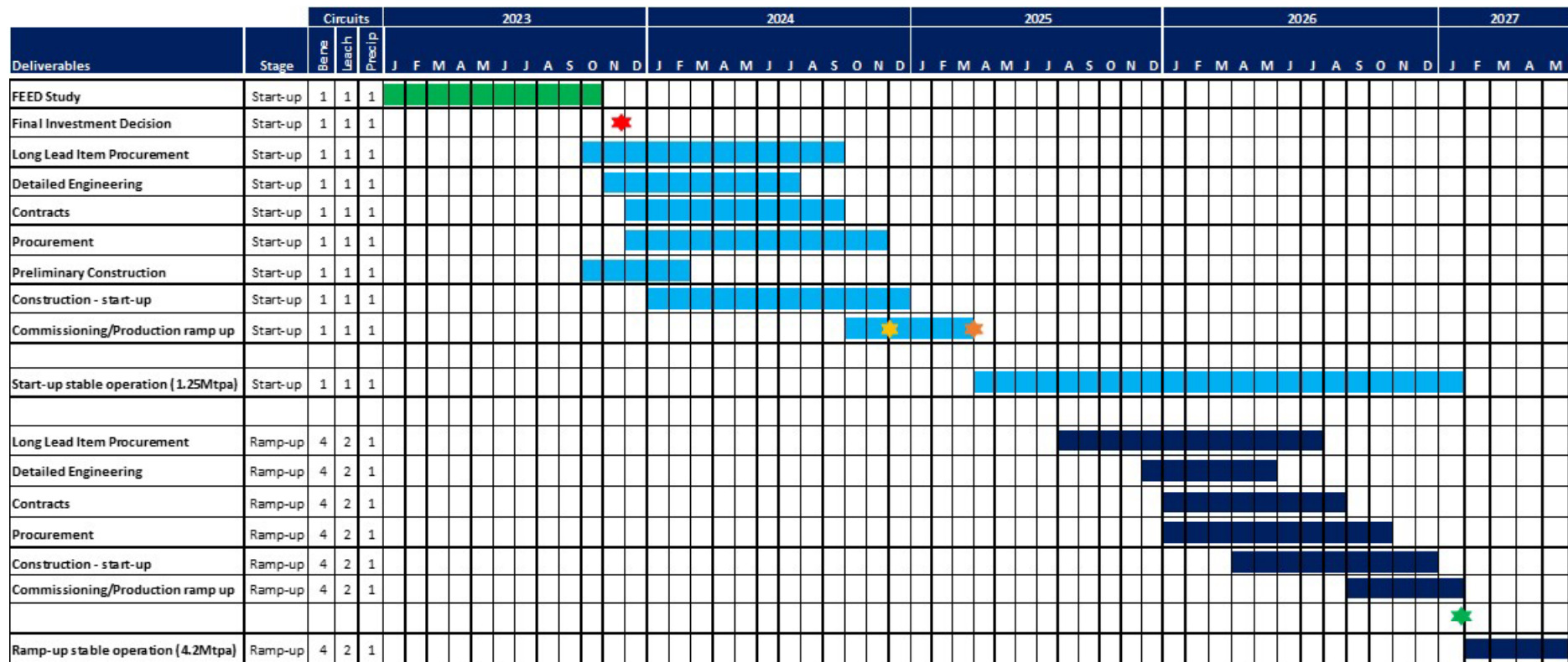
- Commence FEED Study for initial modular circuits in January 2023 (commenced).
- Final Investment Decision in Q4 CY 2023,
- Long lead item orders placed in October 2023.
- Detailed engineering design commencing immediately taking 9.5 months and being largely complete by mid-month August 2024.
- Site and camp establishment to commence in Q4 CY 2023
- Allowing the main construction contracting to commence in January 2024 and be completed in 12.5 months in mid-month 22.
- Commissioning to commence in Q4 CY 2024, with the first UOC production in December CY 2024.
- Operations start-up after completion of commissioning, in Q2 CY 2025, with first UOC sales.

This gives an overall start-up project duration of 27 months from kick-off to commercial sales as illustrated in Figure 15.1 below.

Ramp-up of operations will begin in H2 CY 2025 with long lead item procurement and detailed engineering for an additional 3 modular beneficiation circuits and 1 leach circuit:-

- Long lead item procurement from July 2024.
- Detailed engineering, contracts and procurements commencing December 2024, to be completed in 11 months, by Q4 CY 2026.
- Construction for expansion modular circuit to commence Q2 CY 2026, taking 9 months for completion by the end of December 2026.
- Commissioning to commence September 2026 for completion by February 2027.

This gives an overall ramp-up project duration estimate of 18 months from placement of long lead item orders to full stable operation. The efficiency is gained through the replication of design components within modular circuits and minimal requirements for additional infrastructure.







-  Final Investment Decision
-  First UOC production - 0.8Mtpa
-  First UOC Sale
-  Full UOC Production - 2.0Mtpa

Figure 15-1 - Tiris Project Schedule

## 16 Operating Strategy

The operational strategy for Tiris will focus on developing a stable and robust project, followed by operational ramp up. Aura recognises that new development of uranium projects has not occurred for a significant period and consideration needs to be given to sourcing and training of a workforce with suitable skills. In addition, the remote nature of the Project will require strong logistical processes, which may take some time to achieve optimal efficiency.

To mitigate risk Aura plans to initially develop the Project with a single modular processing train, consisting of one modular beneficiation circuit and one modular leach circuit. Sizing constraints for the modular UOC precipitation and packaging circuit mean that a full-sized circuit will be included from the start of operations.

Beginning at reduced capacity will allow Aura to reduce operational risk and minimise initial capital expenditure.

Once stable operation has been achieved Aura plans to increase capacity through additional modular process circuits.

## 17 Capital Cost Estimate

Development capital for the Tiris Project will be incurred in two stages:

- Stage 1 – Startup capital.
- Stage 2 – Ramp up capital

The Capital Estimate for the Enhanced Feasibility Study has been developed using the 2021 Definitive Feasibility Study Estimate as the basis for Stage 1 startup capital. This estimate, at an accuracy of -15% +20% to AusIMM Class 3 standards includes site development and infrastructure and single modular trains for beneficiation, leaching and precipitation and packaging.

Capacity expansion in stage 2 is to be achieved by the addition of modular processing trains as outlined in Table 17-1. The incremental increase in capital has been estimated by Aura on this basis.

Modular Circuit	Additional circuits	Design Capacity
Beneficiation	3	5.0 Mt pa
Leaching, IX, Precipitation	1	0.46 Mt pa
Product precipitation and packaging	0	3.5 Mlbs pa UOC

**Table 17-1: Additional circuit requirements to move from start up to operations phases.**

Aura's Engineering company Mincore have provided a capital cost (CapEx) estimate for the Tiris Project stage 1. This includes the scope of facilities and services required to design, purchase, and construct the entire project, up to practical completion and handover to operations.

The Capital estimate originally published in July 2019 was reanalysed to update material and equipment costs to a 2021 basis. Aura undertook this re-evaluation to fully understand the impact of the global COVID-19 pandemic on the Tiris U Project CAPEX. Where possible updated quotes were



obtained from original or technically compliant vendors and currency exchange rates were updated to the 2021 basis.

It is recognised that since the Capital Estimate as completed in August 2021 there has been appreciable global inflation. Aura has escalated the Capital Estimate by 15% to account for inflation. The Estimate will be confirmed at conclusion of the FEED study.

As well as additional modular process circuits the following items have been included in the EFS Capital Estimate, which were not included in the 2021 DFS update.

- Up-front payments for mining equipment lease, estimated at 30% of equipment capital.
- Extension of water pipeline to 100km.

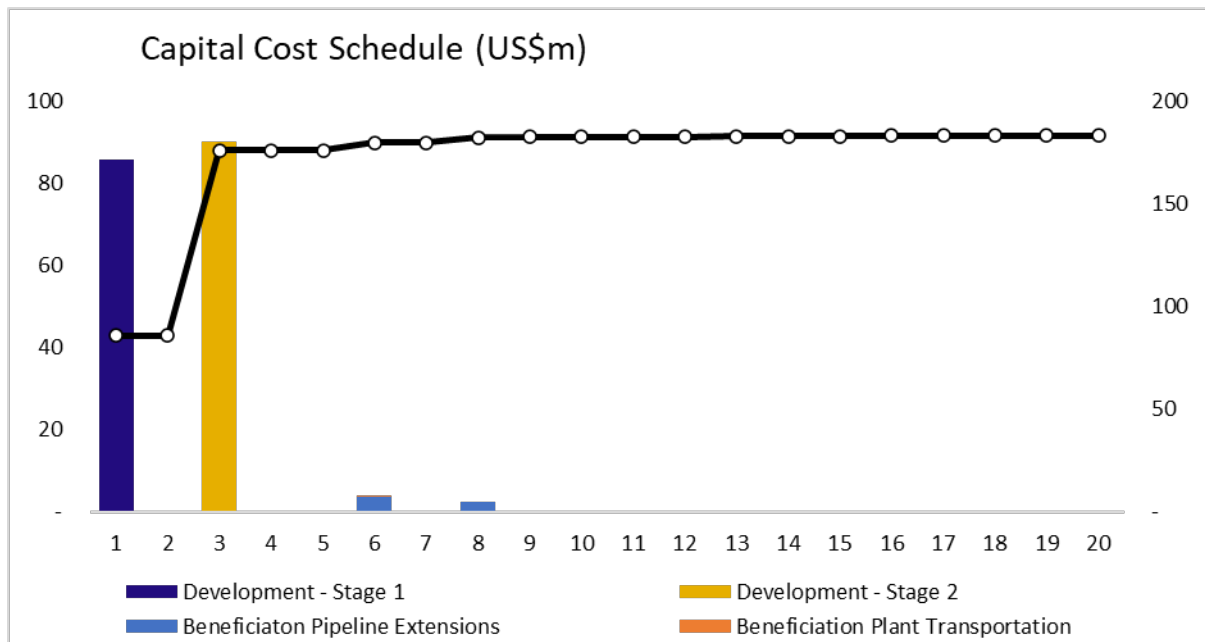
Table 17-2 show the estimated capital cost summary for a single modular process train (Start-up) and additional process circuits (Ramp-up) by main area.

	<b>Start-up</b>	<b>Ramp-up</b>	<b>Total</b>
<b>Description</b>	<b>Cost (U\$M)</b>	<b>Cost (U\$M)</b>	<b>Cost (U\$M)</b>
<b>Mining</b>	1.6	2.7	<b>4.3</b>
<b>Process Plant</b>	39.3	42.8	<b>82.1</b>
<b>Infrastructure</b>	17.7	14.6	<b>32.3</b>
<b>EPCM</b>	4.9	2.4	<b>7.3</b>
<b>Owner's cost</b>	9.6	8.9	<b>18.5</b>
<b>Contingency</b>	3.3	7.19	<b>10.5</b>
<b>Inflation</b>	11.5	11.8	<b>23.2</b>
<b>Total Capital Cost</b>	<b>87.9</b>	<b>90.3</b>	<b>178.2</b>

**Table 17-2: Capital Estimate by area.**

Start-up includes single process train, precipitation and packaging plant, and development infrastructure. Ramp up includes additional process circuits as defined in Table 17.1.

The estimate in Table 17-2 demonstrates incremental ramp up capital required to increase production capacity to average 2.0Mlb U<sub>3</sub>O<sub>8</sub> pa in year 3 to be US\$90.3M. This includes addition of 2 modular beneficiation circuits and 1 modular leaching circuit. Adequate capacity remained in the product precipitation and packaging circuit to accommodate expanded production.



**Figure 17-1: Capital cost expenditure schedule.**

Mining Capital costs have been estimated as 30% of equipment cost, with plans to lease mining fleet.

The Power generation capital costs have been allocated to Operating expenses, with the delayed costs paid over three years once production commences. Aura obtained conceptual agreement to this financing arrangement, with one of the Power generation suppliers. The Capex total cost is therefore reported as \$175.9M USD.

The scope for the facilities also includes two specialised plant areas that were separately engineered for both quantities and prices. The specialised plant areas include:

- Leach and uranium recovery plant developed by Simulus Engineers, (2020-2050).
- Fluid bed precipitation, calcining and drum packing plant developed by Adelaide Control Engineering, (2060).

The costing for these two specialised packages includes full engineering, procurement of all equipment and packing ready for transportation (site erection and commissioning by others).

In total, 85% of pricing was sourced externally by budget pricing enquiries.

### 17.1 Currency Exchange Rates

This estimate is provided in Australian dollars (A\$) and American dollars (US\$), accurate as of the date of 1 July 2021.

The capital cost estimate has exposure to various currencies, with the principal currencies and rates shown in Table 17-3. Aura has taken a long-term view that the Australian dollar will weaken against the US dollar, based on market predictions. Any variations in these exchange rates will require adjustment to the final AUD estimate total.

Currency	A\$ AUD	US \$ USD	Euro € EUR	Ouguiya MRU	Rand ZAR
1 A\$	1.000	0.70	0.63	32.03	10.78

Table 17-3: Currency Estimates

## 17.2 Contingency

The contingency provided on this project was established based on a cost risk analysis with Mincore. To establish the desired estimate accuracy of -15% + 20% to AusIMM Class 3 standards, requires a set amount of engineering and project deliverables to be developed. Based on the integrity of these deliverables, the desired schedule and consideration of other risks, the contingency level was set.

Based on the above an engineering contingency of US\$3.8M was calculated for the start up capital, equating to 5% of the estimate. Contingency for the stage 2 ramp up capital was increased to 10%. Overall contingency of US\$12.1M has been included in the estimate of US\$178.2M for total development capital.

### 17.3 Comparison to 2021 Feasibility Study Capital Estimate

A comparison between the capital estimate presented in the 2021 DFS and the Enhanced Feasibility Study can be seen in Table 17-4. This shows the primary change to be the addition of process circuits after ramp-up.

	DFS 2021	EFS 2023		
		Initial	Expansion	Total
Description	Cost (U\$M)	Cost (U\$M)	Cost (U\$M)	Cost (U\$M)
Mining	0.0	1.6	2.7	4.3
Process Plant	39.3	39.3	42.8	82.1
Infrastructure	17.7	17.7	14.6	32.3
EPCM	4.9	4.9	2.4	7.3
Owner's cost	9.6	9.6	8.9	18.5
Contingency	3.3	3.31	7.19	10.5
Inflation		11.5	11.8	23.2
Total Capital Cost	74.8	87.9	90.3	178.2

Table 17-4: Comparison of Capital Estimate between 2021 DFS and 2023 EFS. 15% inflation escalation included for the 2023 EFS estimate.

## 18 Operating Cost Estimate

The operating cost estimate for the Tiris Project was developed by Aura Energy with assistance of MinCore Engineers, Stimulus Engineers and MiningPlus. An estimate review was undertaken by METS Engineering. The estimate is based on the LOM ore schedule, process design criteria, steady state mass and energy balance and metallurgical test work undertaken as part of the Feasibility Study.

The estimate includes all costs associated with production of an average 2.0Mlbs  $U_3O_8$  per annum after ramp-up, including:

- Owner mining;
- Labour;
- Fuel;
- Power;
- Reagents and consumables;
- Maintenance;
- General and administration;
- Product transport;
- Sustaining capital;
- World Bank Community contributions; and
- Royalties.

The operating cost estimate is presented in US dollars and considered to have an estimate accuracy of +15% -10%. A 12-year LOM from year 3 of operation has been used in development of the operating cost estimate.

Cash costs were broken down into their fixed and variable components to accommodate cash flow scheduling. Variable costs were linked to uranium production.

Mining and key reagent costs, including diesel, sodium carbonate and sodium bicarbonate were updated for the 2023 EFS. The mining costs were also validated against four mining contractor submissions allowing for the inclusion of a suitable profit margin.

The operating cost estimate has been summarised in Table 18-1 and Figure 18-1. The total C1 cash cost will be US\$25.10/lb  $U_3O_8$  and All In Sustaining Cost (AISC), inclusive of Royalties, LOM Sustaining Capital, Insurances and product transport will be US\$28.8/lb  $U_3O_8$ . These costs have been estimated as an average of annualised expenditure.

Category	Average Annual expenditure US\$M	US\$/lb U <sub>3</sub> O <sub>8</sub>
Mining	13.7	7.56
Labour	3.5	1.94
Power	8.4	4.65
Reagents	11.5	6.37
Maintenance	3.0	1.67
G&A	5.3	2.90
<b>Total cash cost (C1)</b>	<b>45.4</b>	<b>25.10</b>
Product transport and marketing	0.9	0.5
Communities	1.0	0.6
Sustaining capital	0.70	0.4
Royalties	4.1	2.2
<b>All In Sustaining Cost (AISC)</b>	<b>52.1</b>	<b>28.77</b>

Table 18-1: Operating cost estimate by area for Tiris Project

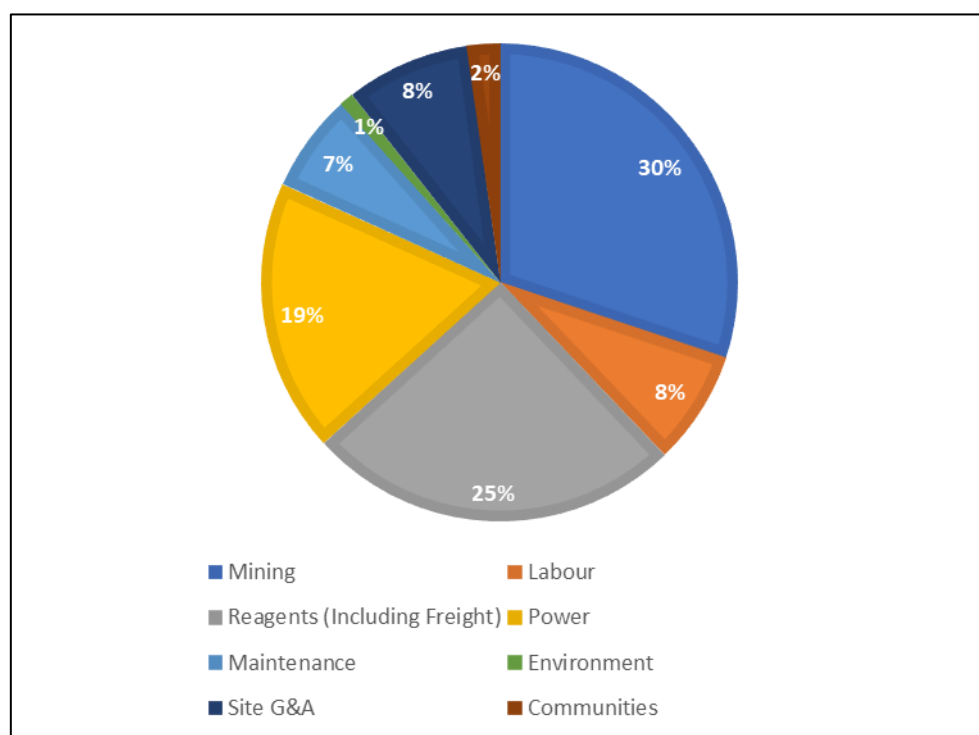


Figure 18-1: Distribution of operating costs by area.

## 18.1 Comparison to 2021 Feasibility Study Operating Cost Estimate

A comparison of operating costs estimated in the 2021 DFS and updated in the current study can be seen in Table 18-2. This showed an overall reduction in costs from US\$25.43/ lb U<sub>3</sub>O<sub>8</sub> to US\$25.10/ lb U<sub>3</sub>O<sub>8</sub>.

These reductions were attributed to efficiency of scale for fixed costs, predominantly in labour and G&A.

Increases in several areas were observed since the 2019 DFS estimate. These largely offset cost reductions achieved by increased scale.

- mining costs was observed due to reduced Ore Reserve cut-off grade and overall mined U<sub>3</sub>O<sub>8</sub> grade.
- Sodium carbonate price rose from US\$250/t to US\$420/t.
- Sodium bicarbonate price rose from US\$250/t to US\$570/t.
- Diesel price remained consistent at US\$0.86/L delivered to site.

Category	2021 DFS	2023 EFS
	US\$/lb U <sub>3</sub> O <sub>8</sub>	US\$/lb U <sub>3</sub> O <sub>8</sub>
<b>Mining</b>	\$7.16	\$7.56
<b>Labour</b>	\$3.68	\$1.94
<b>Power</b>	\$4.57	\$4.65
<b>Reagents</b>	\$3.95	\$6.37
<b>Maintenance</b>	\$2.28	\$1.67
<b>G&amp;A</b>	\$3.80	\$2.90
<b>Total cash cost (C1)</b>	<b>\$25.43</b>	<b>\$25.10</b>
<b>Product transport and marketing</b>	\$0.45	\$0.50
<b>Insurances</b>	\$0.46	\$0.60
<b>Sustaining capital</b>	\$0.83	\$0.40
<b>Royalties</b>	\$2.39	\$2.20
<b>All In Sustaining Cost (AISC)</b>	<b>\$29.81</b>	<b>\$28.77</b>

Table 18-2: Operating cost estimate comparison between 2021 DFS and 2023 EFS.

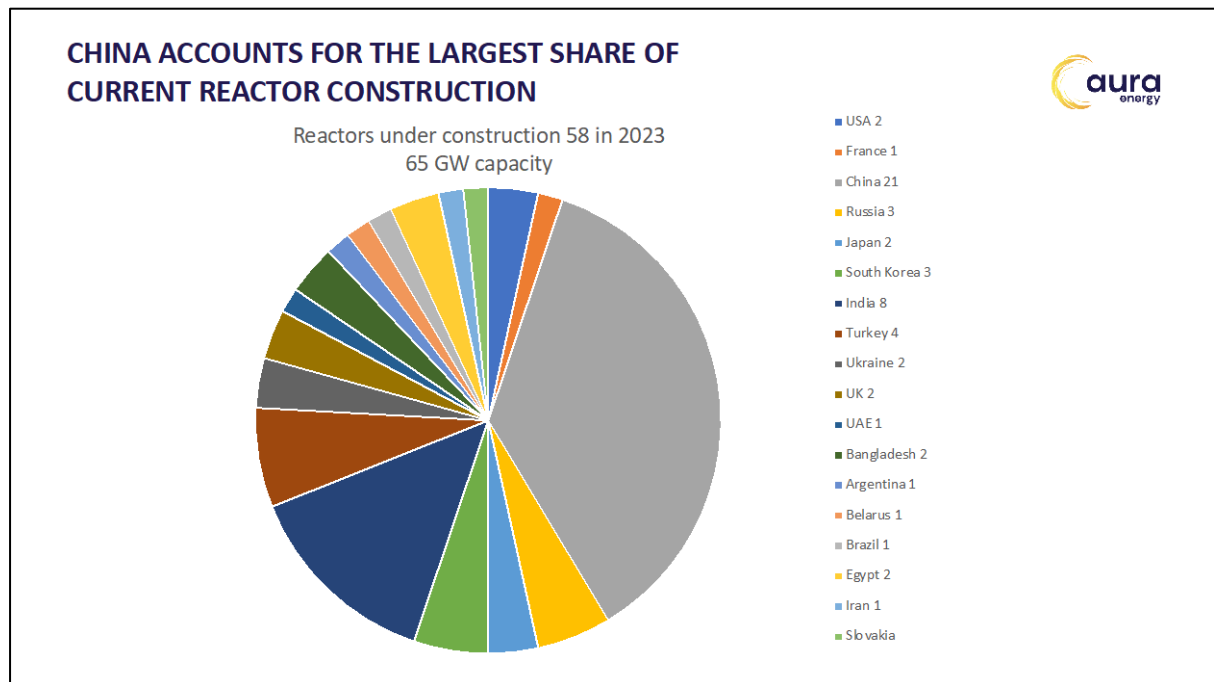
## 19 Market Analysis

### 19.1 The uranium supply and demand outlook

The outlook for the nuclear power industry and the demand for uranium is more positive than it has been for many years. The crisis faced by the industry following the Fukushima incident in 2011, which led to reactor shutdowns in Japan and Europe on grounds of safety, has passed, and global concerns now focus on climate change and given the war in Ukraine, increasingly on energy security and rising fossil fuel power costs. Several life extensions have been announced in the ageing reactor fleets of Europe and the USA, and a restart programme is under way in Japan to bring their total back to approximately 30 operating reactors by 2027.

According to the WNA, there are 438 operating reactors worldwide with a total capacity of 394 Gigawatts. 58 reactors are under construction, 104 are planned and 341 are proposed. These do not account for a breakthrough in small modular reactors, which have the potential to provide additional upside in nuclear capacity.

China accounts for the largest share of future growth with 203 reactors in the planned and proposed categories (45% of the total). The impetus for nuclear power in China is increasingly due to air pollution from coal-fired plants, which in 2019 accounted for 69% of electricity production.



**Figure 19-1: Global growth from reactors currently under construction**

Source: World Nuclear Association



## CHINA ALSO ACCOUNTS FOR THE LARGEST SHARE OF PLANNED AND PROPOSED REACTORS



445 planned and proposed reactors in 2023  
484 GW capacity

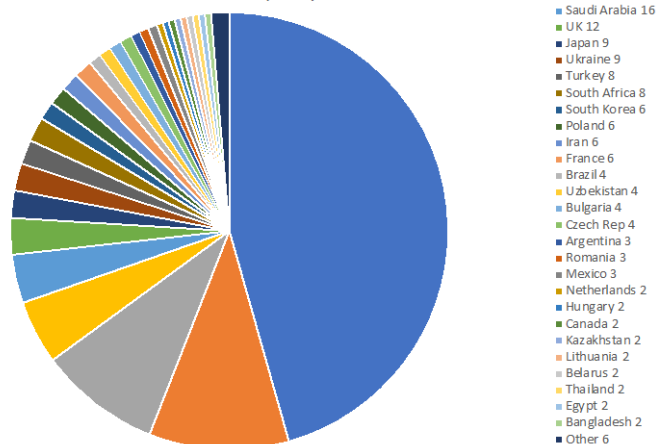


Figure 19-2: Further global growth from planned and proposed nuclear reactors

Source: World Nuclear Association

Annual demand for uranium in 2022 was 62,496 tU / 73,698 t / 162M lbs  $U_3O_8$ . This is forecast to grow to 112,300 tU / 132,441 t / 292M lbs  $U_3O_8$  in 2040 under the World Nuclear Association's central reference case. (Figure 19-3).

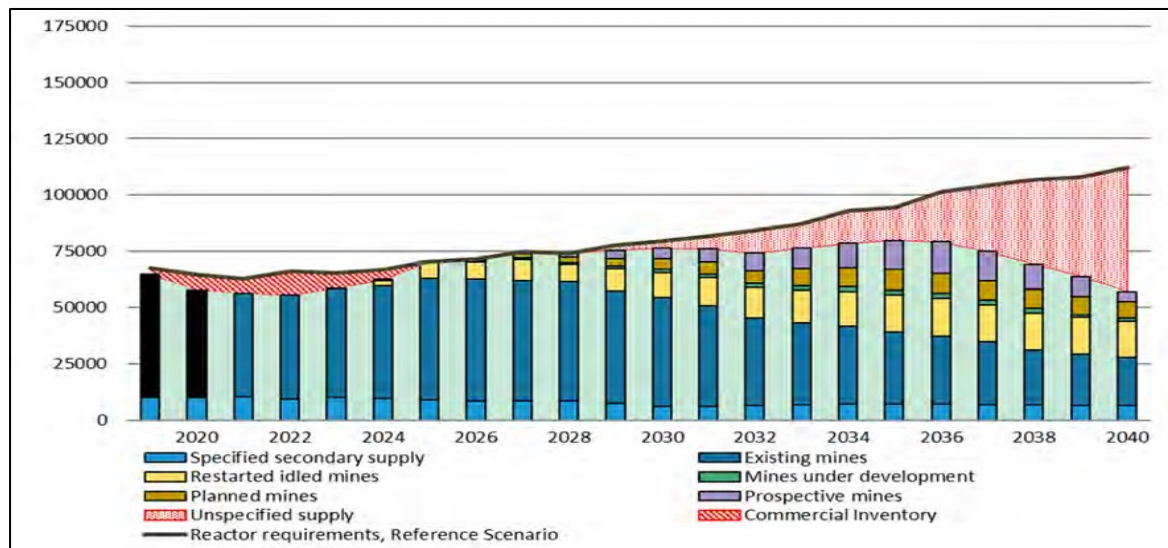


Figure 19-3: World Nuclear Association Reference Scenario 2021(tU)

### 19.2 Reference Scenario for uranium supply and demand, tU

In the reference case, notwithstanding the growth in capacity, nuclear power will only account for between 7% and 9% of global electricity supply, down from a peak of 17% in the 1990s. Maintaining a market share of 10-13% of future electricity supply implies a significant growth in uranium requirements as shown in Figure 19-4.

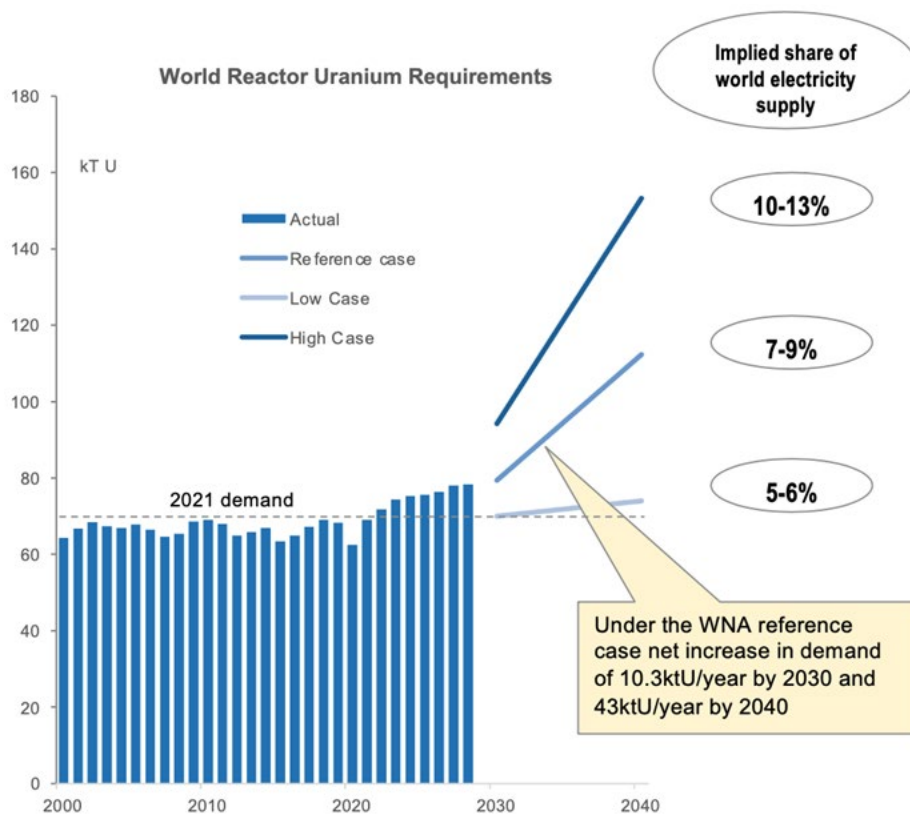


Figure 19-4: World Nuclear Association Demand Scenarios 2021(tU)

On the supply side, mined uranium peaked in 2015 and then fell as prices came under pressure through 2016 - 2018. However, this overall negative picture masks a significant shift in production source, with competitive Kazakh ISL output taking market share at the expense of traditional production centres in Canada, USA, Australia, and Niger (Namibia bucked this trend due to heavy Chinese investment). In 2021 Kazakhstan production accounted for 45% of the world total of 48,332 tU / 56,995 t / 125 M lbs  $U_3O_8$ , with the next largest being Namibia at 11%, Canada at 10%, and Australia at 9%.

Looking ahead, as seen in Figure 19-3, existing mined supply is insufficient to meet forecast demand, which means idled mines will need to restart, new mines will need to be developed, and prospective new sources will need to be opened up. In the WNA reference scenario, this annual new volume requirement equals 70,000 tU / 82,555 t / 182M lbs  $U_3O_8$  by 2040.

The uranium price will need to be sufficiently high to incentivise new production. The industry's current marginal cost of production on an AISC basis is estimated to be \$35 per lb<sup>\*11</sup>, but this is not close to the level required. Approximately 30,000 tU / 35,380 t / 78M lbs  $U_3O_8$  will be required on an annual basis for the next decade, before the mine deficit rises sharply into 2040. To achieve this level of production, an incentive price of the order of \$65 per lb may be required. Two large Canadian projects (Rook at 9,500 tU / 11,200 t / 25M lbs, and McArthur Lake at 5,800 tU / 6840 t / 15M lbs) account for a large share of this expected additional volume, adding to the concentration of supply risk.

<sup>11</sup> Source: Elemental Economics

Aura has completed a comprehensive market assessment to develop a pricing forecast for Tiris. This has resulted in 3 pricing scenarios to assess the economic viability of the Tiris Project.

- i. **Low case:** TradeTech FAM1 term forecast. Mean forecast price to 2040 of US\$61/lb U<sub>3</sub>O<sub>8</sub>.
- ii. **Base case:** Conservative incentive price of US\$65/lb U<sub>3</sub>O<sub>8</sub>
- iii. **High case:** TradeTech FAM2 term forecast. Mean forecast price to 2040 of US\$77/lb U<sub>3</sub>O<sub>8</sub>.

The FAM 1 based on a 'risk off' approach where published production target volumes are readily achieved, and FAM 2 based on a 'risk on' approach where there is a reduction in production volumes of 129,000 tU / 15,240 t / 336M lbs between 2020 and 2040.

### 19.3 Product Offtake

In January 2019 Aura signed an offtake agreement with Curzon Resources for the sale of 800,000 lb U<sub>3</sub>O<sub>8</sub> at fixed prices and a further 1.8Mlb U<sub>3</sub>O<sub>8</sub> available to Curzon as option volumes at fixed and market pricing, over a 7-year period. Under the Tiris base case pricing scenario the average offtake price is approximately \$53/lb U<sub>3</sub>O<sub>8</sub>.

## 20 Financial Analysis

Financial analysis of the Tiris Project is inclusive of Mauritanian government royalties and commitments relating to the offtake agreement with Curzon Resources. This is outlined in the ASX announcement "Aura concludes offtake agreement", dated 29th January 2019. Results are on an after-tax basis in \$USD, unless otherwise stated. Financial modelling is inclusive of all capital items, including mining mobilisation, process plant, project infrastructure and LOM sustaining capital.

The project financial analysis has been completed with a valuation date of 8<sup>th</sup> March 2023.

Table 20-1 shows the variance in NPV<sub>8</sub>, IRR, payback period and net cashflows for a range of uranium contract prices, including commitments to Curzon Resources offtake agreement. At a base case uranium price of US\$64/lb U<sub>3</sub>O<sub>8</sub>, the post-tax NPV<sub>8</sub> of the Tiris Project is US\$226M. This is with a post-tax IRR of 28%, and a project payback of 4.5 years from commencement of production. At this price the project generates annual net cashflows (EBITDA) of US\$72M.

Financial Assumption	Unit	Base Case
Average U <sub>3</sub> O <sub>8</sub> price over LOM <sup>12</sup>	US\$	64/lb U <sub>3</sub> O <sub>8</sub>
Foreign Exchange Rate	A\$:US\$	0.70
Discount Rate	%	8%
Tax Rate <sup>13</sup>	%	25%
Government Royalty	%	3.5%
Life of Mine (LOM)	Years	16

Table 20-1: Key financial assumptions

<sup>12</sup> Includes Curzon offtake contract, with option taken, as announced 29<sup>th</sup> January 2019.

<sup>13</sup> Includes 3 year tax holiday from production start date.

Table 20-2 shows the financial outcomes of the base case assumptions.

Measure	Unit	Base Case
Uranium Produced (LOM)	Mlbs	25.53
EBITDA (LOM)	\$USM	906
Free cash flow	\$USM	554
IRR	%	28%
NPV <sub>8</sub>	\$USM	226
Total Development Cost <sub>discounted</sub>	\$USM	155
C1 Cost	\$/lb U <sub>3</sub> O <sub>8</sub>	25.1
AISC	\$/lb U <sub>3</sub> O <sub>8</sub>	28.8
AIC	\$/lb U <sub>3</sub> O <sub>8</sub>	36.5
Total Project Payback	Years	4.5

Table 20-2: Enhanced Feasibility Study Financial outcomes

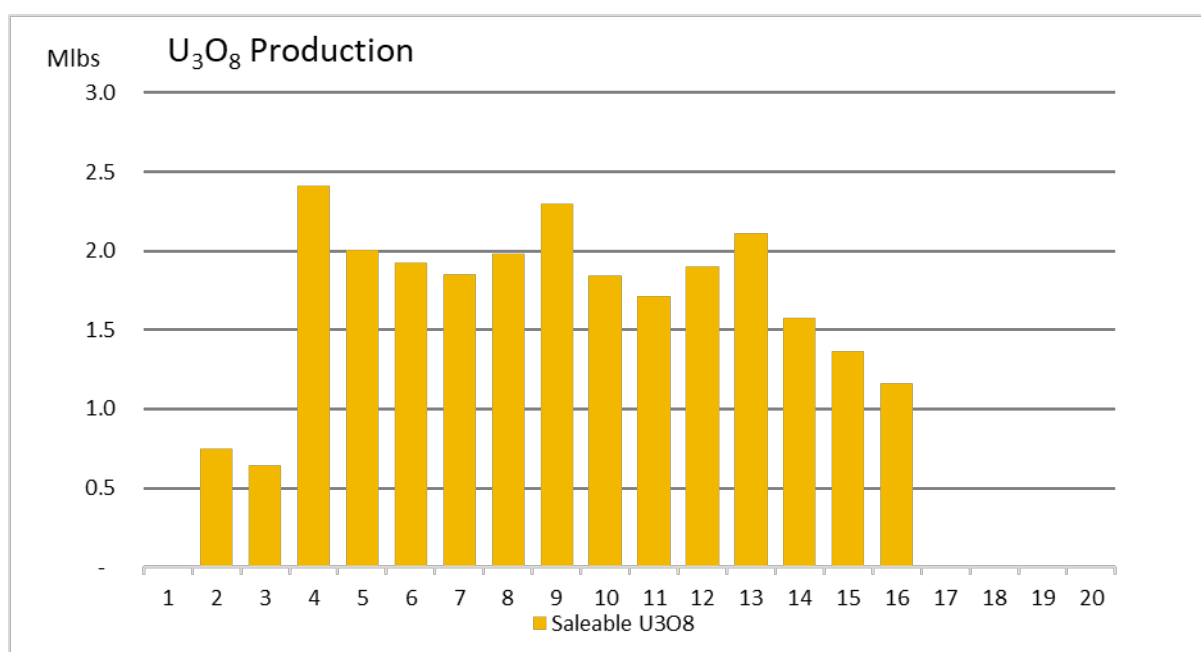


Figure 20-1: EFS production profile

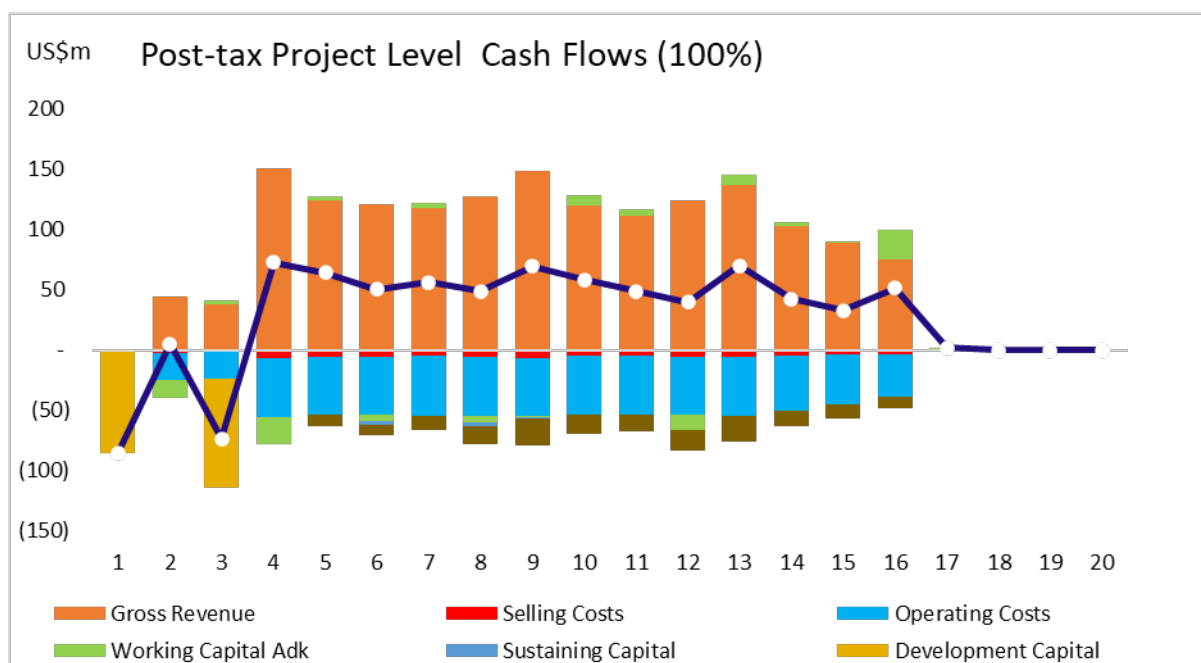


Figure 20-2: Post tax Project level cash flows

## 20.1 Upside Scenario

To assess the value of extending the mine life based on available resources in Tiris East an upside scenario was assessed. Key assumptions included:

- Base Case mining schedule with inclusion of an additional 0.6Mt Inferred Resource Estimate at 100ppm cut off for average 183ppm U<sub>3</sub>O<sub>8</sub>. Based on conversion of Inferred Resource material to Measured and Indicated classifications and then Ore Reserves of 65% in this study.
- Use of 'risk-on' pricing forecast scenario (TradeTech FAM2 term) with average price to 2040 of US\$77/lb U<sub>3</sub>O<sub>8</sub>.

The results of financial assessment of the upside scenario can be seen in Table 20-3.

Measure	Unit	Upside Case
Uranium Produced (LOM)	Mlbs	25.8
EBITDA (LOM)	\$USM	1,231
Free cash flow	\$USM	806
IRR	%	35%
NPV <sub>8</sub>	\$USM	347
Total Development Cost <sub>discounted</sub>	\$USM	155
C1 Cost <sup>1</sup>	\$/lb U <sub>3</sub> O <sub>8</sub>	25.1
AISC <sup>2</sup>	\$/lb U <sub>3</sub> O <sub>8</sub>	28.8
AIC <sup>3</sup>	\$/lb U <sub>3</sub> O <sub>8</sub>	36.3
Total Project Payback	Years	3.75

Table 20-3 – EFS Upside case financial outcomes

<sup>1</sup> C1 Cost for average of 10 years from completion of ramp-up development

<sup>2</sup> AISC for average of 10 years from completion of ramp-up development

<sup>3</sup> All In Cost (AIC) for Life of Mine



## 20.2 Sensitivity Analysis

Sensitivity analysis was completed on various aspects of the project with potential financial variance. The base case  $U_3O_8$  price assumption used for analysis was \$65/lb. Table 20-4 shows the impact of price between the TradeTech FAM1 forecast and TradeTech FAM2 forecast. These price forecasts are based on supply demand scenarios ranging from the best-case scenario for new supply to become available to the market by 2040 (TradeTech FAM1) and a scenario where marginal projects are not developed (TradeTech FAM2).

Measure	Unit	TradeTech FAM1 <sup>14</sup>	US\$65/lb	TradeTech FAM2 <sup>15</sup>
EBITDA (LOM)	\$USM	788	906	1,220
Free cash flow	\$USM	462	554	798
IRR	%	22%	28%	35%
NPV <sub>8</sub>	\$USM	165	226	344
Total Project Payback	Years	5.5	4.5	3.75

Table 20-4: Sensitivity of base case to uranium price.

The impact of discount rate has been assessed in Table 20-5. The base case discount rate of 8% represents the industry average. It can be seen that the project remains significantly positive with increased discount rate.

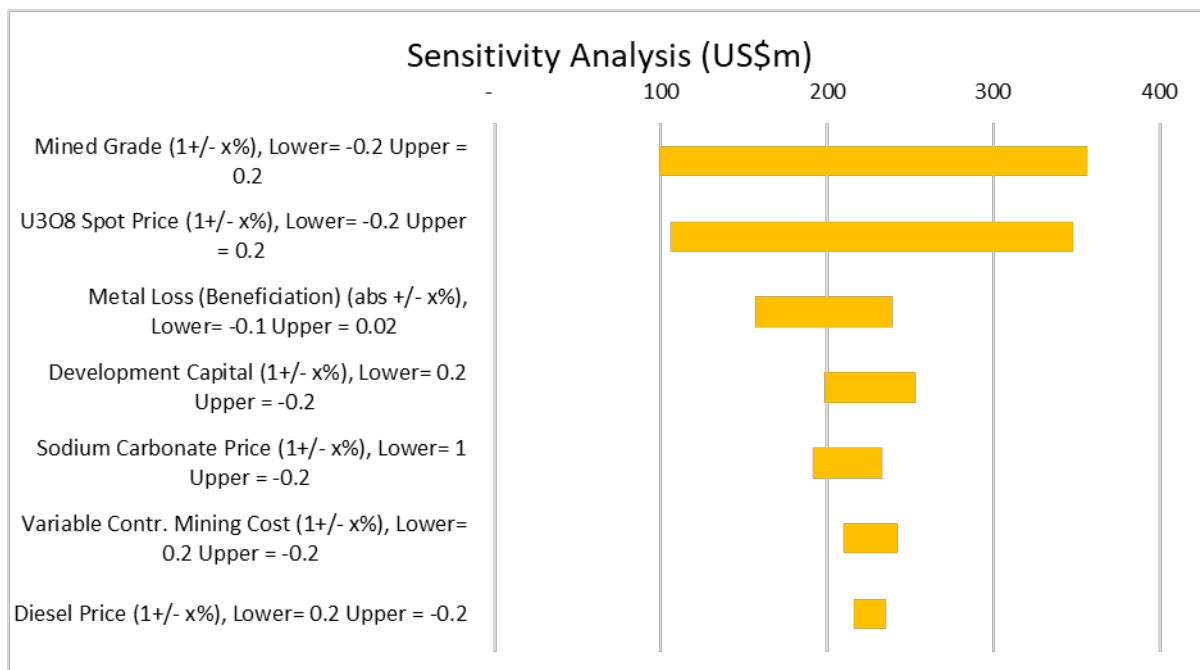
Measure	Unit	6%	8%	10%
NPV <sub>8</sub>	\$USM	283	226	179
Total Development Cost <sub>discounted</sub>	\$USM	160	155	151

Table 20-5: Sensitivity of base case to discount rate

The sensitivity analysis presented in Figure 20-3 demonstrates that the project is most sensitive to mined grade and  $U_3O_8$  spot price. The base case is fully supported by Proven and Probable Ore Reserve Estimates, reducing the risk of significant grade variation. While the project is sensitive to spot price, it remains strongly viable with a 20% reduction.

<sup>14</sup> TradeTech FAM1 forecast price, based on best case scenario for new primary uranium supply to become available. Average price to 2040 of US\$58/lb  $U_3O_8$ .

<sup>15</sup> TradeTech FAM2 forecast price, based on scenario where marginal primary uranium production projects are not developed by 2040. Average price to 2040 of US\$78/lb  $U_3O_8$ .



**Figure 20-3: Sensitivity analysis for key variables**

A key risk for greenfield uranium projects is cash flow through ramp up and early years of production. Figure 20-4 demonstrates that the base case project retains a minimum closing cash balance of over US\$43M. The minimum is reached during the ramp up phase and equates to approximately 1 year of gross revenue in this stage.

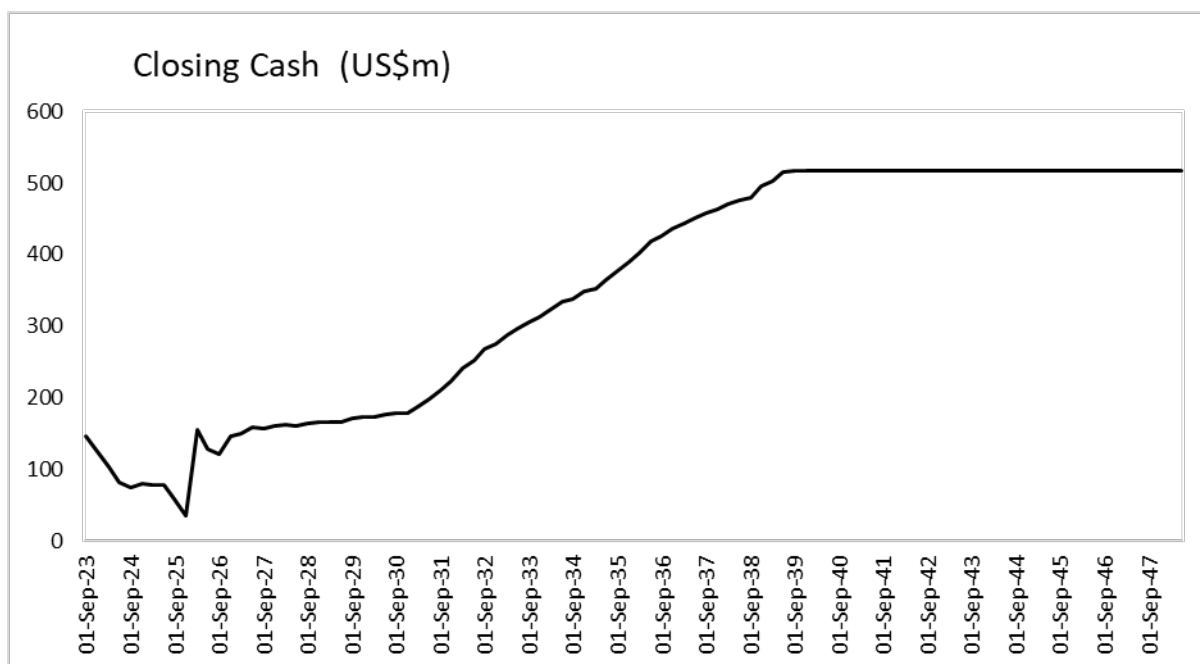


Figure 20-4: Closing cash by year for base case.

### 20.3 Comparison to 2021 DFS

A comparison of results between the 2021 Definitive Feasibility Study and current study can be seen in Table 20-6. The 2021 results were originally presented using a base price of US\$60/lb U<sub>3</sub>O<sub>8</sub>, for comparative purposes this has been adjusted to US\$60/lb U<sub>3</sub>O<sub>8</sub>.

Measure	Unit	2023 EFS	2021 DFS
Uranium Produced (LOM)	Mlbs	25.53	12.44
EBITDA (LOM)	\$USM	906	420
Free cash flow	\$USM	554	259
IRR	%	28%	25%
NPV <sub>8</sub>	\$USM	226	102
Total Development Cost	\$USM	178	75
C1 Cost	\$/lb U <sub>3</sub> O <sub>8</sub>	\$25.10	\$25.43
AISC	\$/lb U <sub>3</sub> O <sub>8</sub>	\$28.8	\$29.81
AIC	\$/lb U <sub>3</sub> O <sub>8</sub>	\$36.5	
Total Project Payback	Years	4.5	3.75

Table 20-6: Comparison of financial results between 2021 DFS and 2023 EFS

## 21 Project Finance

The Tiris Uranium Project funding structure will be one of project financing to minimise risk to the project, maintaining flexibility and preserving shareholder value. Thin capitalisation rules for Mauritania stipulate that debt cannot exceed 75% of project capital. Aura will consider funding total pre-production capital and working capital by some or all of:

- Senior project debt;
- Mezzanine debt;
- Offtake prepayment;
- Equity issue, and/or;
- Royalty or stream funding.

The structure will be dependent on general industry and market conditions, specific counterparty appetite and terms and Aura's views on optimal funding mix and balance sheet configuration.

Aura has secured an offtake contract with Curzon Resources Ltd with a facility for up to US\$20M for working capital.

Senior debt may be sourced from a number of alternate providers including commercial banks, export credit agencies, development financial institutions / multilaterals, credit funds and the project bond market.

The Company's Board and Management have a successful track record of developing and financing mineral resource projects globally. This is supported by a proven ability of the Company to attract new capital, as evidenced from a series of share placements completed over the past 2 years.

The Company believes that there is reasonable basis to assume that future funding will be available as and when required. Investors should note that there is no certainty that the Company will be able to raise the amount of funding required to develop the Project when needed. It is also possible that such funding may only be available on terms that are dilutive or otherwise affect the value of the Company's shares, or that the Company may pursue other value realisation strategies such as a sale, partial sale or joint venture of the Project (which may reduce the Company's overall ownership of the Project).

## 22 Risk

The key risks with their mitigations, are identified as follows:-

1. The project's success is fundamentally linked to the contract price for uranium exceeding the operating cost for the project. Aura is in the process of seeking additional Offtake agreements with suitable long term pricing, but this risk is largely outside Aura's control. There are some previous suppliers with their plants in care and maintenance who could come back on-line, but as time extends this likelihood is expected to lessen.
2. The estimated capital costs for the project could prove optimistic, requiring additional funding. The Capex estimate was composed of 85% external pricing, so has a strong basis for its pricing. The project will rely on competent Project cost control by the EPC company overseeing the project.
3. There is an OHS risk of radioactive dust in the mining and front end areas causing OHS issues in front end operators. Aura will ensure operators are in dust sealed cabins, use personnel badges and will rotate personnel if necessary.
4. Sourcing of crushed rock aggregate for roads, pads, and concrete from a source close to Tiris is a concern. A mobile rock crushing and screening plant is planned, using local granite or calcrete rock outcrops.
5. There are potential risks in obtaining Mauritanian statutory permit approvals, in the time required. Aura would seek a high-level connection between Government authorities and its senior management, to supplement the usual project interfaces between Aura's local permitting supervisor and Government authorities. It is expected given Aura's focus on maximising local employment, that the Mauritanian Government will be quite supportive.
6. There are risks from terror groups in the Sahel region in taking Western hostages. Aura has provisionally arranged for a platoon of 20 soldiers to be permanently based close to the site, responsible for external security. Aura will continue with its very close coordination with police/gendarmes/military guarding the area and will minimise the number of Western expatriates at site.
7. There is a potential loss of knowledge from resignation or illness of Aura's key technical personnel. Aura has taken action to reduce this likelihood, and with its engineering house having produced a detailed Feasibility Study, has further back up.
8. A risk remains of insufficient water being available for the project. However, drilling and modelling successfully defined a basin capable of sustainable supply of 0.3-0.4 Gl water per year. Geophysical evaluation bodes well for the location of additional water sources in the same geology and indicates a strong likelihood that the current drilling program will locate additional water supply in the same geology for the relatively low water requirement of the Tiris Project. A program designed to mitigate the risk that includes the drilling and test work of the Taoudeni and C22 Basins, planned to be completed in 2023 .
9. With no network power back up, Aura's hybrid diesel and solar generation plant may suffer "crash stops" from power system fluctuations. Aura shall undertake rigorous engineering selection of the power generation supply and hire experienced and competent electrical support personnel for the initial 2-3 years to maintain the power plant.

## **23 Future Programs**

### **23.1 Front End Engineering Design Study**

Aura is currently undertaking Front End Engineering Design (FEED) study with METS Engineering and Wallbridge Gilbert Aztec (WGA). The study will increase the level of engineering definition for the modular process circuits, supporting Final Investment Decision (FID) for the Company to proceed with development of Stage 1 – start-up for Tiris. The FEED study will comprise two components, including confirmation of infrastructure requirements for start-up of the operation and design of modular circuits.

The FEED study is expected to be completed by Q4 CY 2023.

### **23.2 Capital optimisation for modular process trains**

A key outcome of this study has been that modular expansion of the processing circuit can be optimised through better matching of circuit throughput to mining and leach feed rates. The proposed circuit configuration for the EFS was defined by maximising throughput in the leaching circuit, which resulted in excess beneficiation capacity.

A debottlenecking program will be undertaken as part of the FEED study to assess opportunities to balance modular circuit capacity based on the full operational capacity.

### **23.3 Operating cost optimisation**

Test work is ongoing for recovery of a vanadium by-product. Vanadium is hosted along with uranium in carnotite and work continues on whether it is economically viable to produce vanadium pentoxide flake product. The focus for this work would be to include vanadium by-product recovery in the ramp up stage, where product volumes are more attractive for potential offtake partners.

Other continuous improvement and operating cost optimisation programs remain ongoing.



## APPENDIX 1 JORC Code 2012

### Table 1 Appendix 5A ASX Listing Rules 2023 Tiris Vanadium Resource Estimate

#### Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>The data on which this Mineral Resource Estimate is based is from 6 field sampling programs:</li> <li>1. An air-core (AC) drilling program in 2010/11 with grade estimation by chemical analysis of drill samples</li> <li>2. An AC drilling program at Lazare in 2012 with grade estimation by chemical analysis of drill samples</li> <li>3. An AC drilling program at Sadi in 2015 with grade estimation by chemical analysis of drill samples</li> <li>4. An AC drilling program in 2017 with grade estimation by downhole gamma logging</li> <li>5. An AC drilling program in 2022 with grade estimation by downhole gamma logging</li> <li>6. Diamond drilling (DD) programs in 2017 and 2022 with grade estimation by both chemical analysis of core and by downhole gamma logging, for validation purposes.</li> <li>The 2011/12 drilling was the basis of 2 previous Resource Estimation exercises (ASX release: announcement 14 July 2011 "First Uranium Resource in Mauritania – 50 million pounds", &amp; ASX release: 16 July 2014 "Reguibat Uranium Project Scoping Study Complete). The 2018 resource estimation exercise has been aimed at upgrading a substantial portion of Inferred Resource to a higher resource category.</li> <li>The 2011/12 drillhole spacing was predominantly 100m x 200m. A portion of the 2012 drilling was at a spacing of 50m x 100m drilled to define Indicated Resources. The 2017 drilling was predominantly at a spacing of 50m x 50m to define Measured Resources.</li> <li>AC drill cuttings were riffle split on site to extract approx. 2 kg samples for assay for the downhole intervals 0 to 0.5m, 0.5 to 1.0m, 1 to 2m, &amp; thereafter in 1m intervals to end of hole.</li> <li>Down hole gamma logging in 2017 and 2022 was by 2 down-hole Auslog gamma sondes operated by Poseidon Geophysics (Pty) Ltd based in Gaborone Botswana using 3 geophysicists employed by Poseidon geophysics</li> <li>The 2 sondes (serial numbers T093 and T272) were sent to the Department of Environment, Water &amp; Natural Resources, Adelaide South Australia for calibration prior to the surveys in both 2017 and 2022.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Geological outcrop mapping was undertaken in the field by Aura Geologists for a portion of the work, and where field data was not available the outcrop was digitised from Worldview 3-HD Satellite Imagery to 15 cm resolution provided by Geoimage Pty Ltd. The digitised shapes will be field checked in future field programs. The inferred resource in Hippolyte Zones c, e, f, g still need to be digitised.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>AC drilling in all programs prior to 2022 was conducted by Wallis Drilling of Perth WA using a Mantis drillrig with NQ size bit (outer diameter 75.7 mm) except for the 2015 program which used HQ size bit (OD 96mm). Diamond drilling (DD) was carried out by Capital Drilling Mauritanie SARL utilising triple tube PQ coring (122.6 mm outer diameter bit, 85 mm diameter core). In 2017, 1484 vertical drillholes were gamma logged of which 1428 were AC drillholes and 56 were cored diamond drillholes.</li> <li>In 2022, AC drilling was conducted by Sahara Natural Resources (Guinea) using a 650 model DTH cum-rotary rig. PQ triple-tube diamond drilling was conducted by Tayssir Drilling 1742 vertical drillholes were gamma logged of which 1676 were AC holes and 66 were cored diamond holes.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>For the 2010, 2011, 2012 Aircore programs, no sample recovery information is available.</li> <li>2015 AC drilling the total drill return for each sample interval was bagged and weighed to an accuracy of approximately 0.25 kg to estimate sample recovery. The assay results for the 2015 drilling are considered inaccurate due to loss of fine uranium-bearing carnotite during the drilling process, on the basis of 63 holes which were later gamma logged which indicated that eU3O8 grades were approx. 3 times greater than assay grades Since 2015, 35% (205) of the 2015 collars had another hole drilled within 15 metres and a downhole gamma survey undertaken.</li> <li>Efforts were made to minimise dust loss, eg in most holes the first metre was drilled without applying compressed air, and thereafter minimum air necessary to lift the sample was applied. In view of the ultrafine grain size of the uranium mineral carnotite, even where high recoveries were recorded, it is possible that some carnotite was lost in dust emitted from the drill rig cyclone. resulting in underestimation of uranium grade</li> <li>2017 and 2022 AC drillholes were not physically sampled, and downhole gamma surveys were completed for grade measurement.</li> <li>All drillcore was transported in covered core trays to Nouakchott for geological logging, density determination, and core cutting.</li> <li>Drillcore lengths were measured to an accuracy of c. 1 cm immediately on removal from the core barrel to determine &amp; record core recovery.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>After transportation to the core yard in Noakchott, the depths were marked on the core at 1 metre intervals and recovery data was checked again. 81% of core samples have a recovery of 95% or greater, and 85% of core samples have a recovery of 90% or greater.</p> <ul style="list-style-type: none"> <li>Given the ultra-fine-grained nature of the carnotite mineralisation, loss of uranium is likely in any core runs recording less than 100% recovery, and even where 100% recovery is recorded it is possible some loss of carnotite may have occurred.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>In 2011/12/15 AC drilling each sample interval was geologically logged by an onsite geologist and drill logs were uploaded to Aura's database managed by Reflex Hub in Perth. A sample of sieved &amp; washed chips for each sample interval was retained in chip trays for reference. In 2017 and 2022 AC drilling, only the bottom hole sample was geologically logged, and a sample retained in chip trays.</li> <li>Drillcore was photographed, geologically logged and logs were recorded on Aura's logging template and uploaded to Aura's database.</li> <li>In 2011/12/17 drilling, 385 density measurements (which included 25 duplicate determinations) were taken on drillcore by ALS Laboratories in Nouakchott under the supervision of Aura's geologist. In 2022, 174 density measurements were taken on drill core by MMM Laboratories SARL in Noakchott, under the supervision of an Aura Geologist.</li> <li>Database management was undertaken by Reflex Hub in Perth prior to July 2019, and by Earth SQL in Melbourne after that date.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>2011/12/15 AC drill samples were riffle split on site to provide a minimum 2 kg sample for assay and a duplicate split for reference and possible umpire analysis.</li> <li>Duplicates, blanks, and standards were inserted in the assay sample stream at regular intervals as detailed in the next section.</li> <li>Drillcore from 2017 was cut in half longitudinally by diamond saw by ALS Laboratories after marking up by, and under the supervision of, an Aura geologist. This task was completed in 2022 by MMM Laboratories in Noakchott, under the supervision of an Aura Geologist.</li> <li>For each half-metre of core, half-core was bagged for assay.</li> <li>Given the fine-grained nature of the uranium minerals these sample sizes are appropriate.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the</li> </ul>	<ul style="list-style-type: none"> <li>2011/12 AC drill samples were submitted to Stewart Laboratories sample preparation facility near Zouérat in Mauritania (In 2012 Stewart Laboratories became part of ALS Laboratories). Samples were crushed by jaw crusher to -12mm and 1kg was riffle split for pulverising to +85%</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <ul style="list-style-type: none"> <li><i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<p>passing 75 microns. An c. 100g split was bagged and sent to Stewart Laboratories in Ireland for analysis by pressed pellet XRF. Previous analysis comparing different analytical methods (XRF, ICP, DNC) had indicated that XRF is an accurate method on this material, if an x-ray band is selected for measurement that is not affected by the presence of strontium, and this was done. This method will measure total uranium. 2015 AC drill samples were submitted to ALS Laboratories sample preparation facility in Nouakchott Mauritania. Samples were crushed by jaw crusher to -12mm and 1kg was riffle split for pulverising to +85% passing 75 microns. An c. 100g split was bagged and sent to ALS Global in Ireland for analysis by ALS method MC-ICP61 after 4-acid digestion. This method will measure near total uranium.</p> <ul style="list-style-type: none"> <li>For diamond core drilled in 2017, bagged ½ core was prepared by ALS Laboratories Nouakchott by Method Prep 22 (Crush to 70% less than 6mm, pulverize entire sample to better than 85% passing 75 microns). An c. 100g sample of pulp was split off using mini-riffle splitter, placed in sample envelope and forwarded by air to ALS in Ireland for uranium analysis by ALS Method U-MS62 (U by ICP-MS after 4 acid digestion). 4 acid digestion provides near total extraction.</li> <li>For diamond core drilled in 2022, sample preparation was completed by MMM Laboratories in Noakchott. Samples were crushed to 70% less than 6mm, pulverize entire sample to better than 85% passing 75 microns. An c. 100g sample of pulp was split off using rotary splitter, placed in sample envelope and forwarded by air to ALS in Ireland for uranium analysis by ALS Method U-MS62 (U by ICP-MS after 4 acid digestion). ROL-21 agitation was carried out on the pulps before selecting assay aliquot. 4 acid digestion provides near total extraction.</li> <li>Downhole gamma logging was performed by 2 down-hole Auslog gamma sondes comprising: <ul style="list-style-type: none"> <li>DLS5 Winch Controller</li> <li>W600-1 12V Portable Winch</li> <li>A075 Natural Gamma Tool</li> </ul> </li> <li>Logging procedures involved: <ul style="list-style-type: none"> <li>Drill holes were gamma logged as soon as possible after drilling to avoid radon build-up.</li> <li>Each borehole logged in both directions to verify consistency.</li> <li>Logging speed: 2 metres per minute</li> <li>Sampling interval: 1 cm</li> <li>At least one hole was re-logged after each 20 holes as a repeatability check.</li> <li>A reference hole was established and relogged every 2 days as a check on consistency.</li> <li>Gamma logging procedures &amp; interpretation were supervised by</li> </ul> </li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>consultant David Wilson who qualifies as a Competent Person in these matters.</p> <ul style="list-style-type: none"> <li>• QAQC procedures for the 2011/12 AC drilling comprised, on average: <ul style="list-style-type: none"> <li>▪ Field duplicates assays: 1 in every 12 samples</li> <li>▪ Blanks: 1 in every 31 samples</li> <li>▪ Umpire assays: 1 in every 11 samples</li> </ul> <p>Umpire analysis was carried on 427 sample intervals. For each of these the original pressed pellet XRF sample assayed by Stewart Labs was re-assayed by ICP by Stewart Labs. Each of these samples was also assayed by XRF and by ICP by ALS Labs.</p> <ul style="list-style-type: none"> <li>▪ Certified Reference material: 1 in every 129 samples</li> <li>▪ Total QAQC samples: 1 in every 5 samples</li> </ul> <p>Accuracy &amp; precision were within acceptable limits.</p> </li> <li>• QAQC procedures for the 2017 and 2022 diamond drilling comprise, submission of one standard, blank and field duplicate every 25 samples. In each set of 25 samples, a blank was inserted at every tenth position, standard at every twentieth position and field duplicate every 25<sup>th</sup> position.</li> <li>• 190 sample pulps sent to ANSTO Minerals at Lucas Heights for U determination by Delayed Neutron Count, serving as the Umpire analysis.</li> <li>• Certified reference standards at 128, 264, and 550 ppm were purchased from African Mineral Standards, South Africa. Blanks were prepared from sand collected near the University of Noakhott, that had been scanned with a hand-held spectrometer.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Approximately 5519 drillholes were used in this Resource Estimate. In 3113 (56%) of these, U grade was determined by downhole gamma logging, and in the remainder (44%), U grade was determined by chemical assay. Diamond drillholes were both gamma logged and chemically assayed for validation purposes. The holes drilled in 2015 were excluded from the resource estimate.</li> <li>• To test for radioactive disequilibrium 343 samples were sent to Australian Nuclear Science and Technology Organisation (ANSTO) in Australia for equilibrium determinations. Results were compiled and interpreted by D Wilson of 3D Exploration. Disequilibrium factors were produced in two different ways. The first was based on laboratory measurements made at ANSTO, which suggested a disequilibrium factor of 1.29. The second was comparison of drill core assay results against downhole gamma logging which suggested a conversion factor of 1.16. When the apparent under estimation of grade by ICP analysis (in comparison to the more accurate DNA analysis) by 7% is taken into</li> </ul>

Criteria	JORC Code explanation	Commentary
		consideration the drill hole assay data imply a conversion factor of 1.24. Aura personnel decided a disequilibrium factor of 1.25 was appropriate and applied this to convert eU3O8 grades to U3O8 grades. A factor of 1.25 needs to be applied to all raw gamma grades to provide the correct U grade. All drillhole data recorded was uploaded to Aura's online database managed by Reflex Hub during the programs prior to July 2019 and managed by Earth SQL after that date. Analyses were forwarded directly from the laboratories to the database manager for incorporation in the database.
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>2011/12 drillhole collars were surveyed by handheld GPS with reported accuracy of +/- 3 metres.</li> <li>All 2017 and 2022 drillhole collars were surveyed by differential surveying conducted by IRC-Magma (ISO 9001-2015) to an accuracy of +/- 20 cm in all dimensions.</li> <li>The grid projection used is UTM WGS84 Zone 29N.</li> <li>An independent check comparing data gathered prior to 2022 to topography was undertaken by PhotoSat of Vancouver, using satellite data provided to an accuracy of +/- 20 cm, confirming the quality and adequacy of topographic control.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drillholes were spaced in different programs at 50m x 50m, 50m x 100m, 100m x 100m or 100m x 200m.</li> <li>In most cases Measured Resources are based on 50m x 50m spaced drillholes, Indicated Resources are based on 100m x 100m spaced holes, and Inferred Resources on 100m x 200m spaced holes.</li> <li>Downhole gamma data was composited into 0.5m intervals.</li> <li>Three 100m x 100m areas were drilled at 12.5m spacing in both N-S &amp; E-W directions for geostatistical purposes and to examine variability. Variography constructed by the resource consultants confirmed that the drill spacings are appropriate for the Resource classifications. Resource classification was done by the independent resource consultants with no input from Aura.</li> <li>For the 2022 drilling, the drill spacing for Measured Resources was undertaken at 50m x 50m or 70 by 70 metre spacing.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul style="list-style-type: none"> <li>In 2017, three 100m x 100m squares were drilled at 12.5m hole spacing in both N-S and E-W directions to investigate grade anisotropy. This indicated a weak NW-SE trend to the mineralisation. The drilling pattern employed is considered appropriate for the mineralisation orientation. In 2022, a further two such detailed patterns were drilled.</li> <li>The calcrete mineralisation is flat lying to sub-horizontal so vertical holes were drilled,</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>intersecting the mineralisation at a high angle.</p> <ul style="list-style-type: none"> <li>The collars are spaced in a grid pattern so provide adequate coverage of the mineralisation, demonstrating a broad NW_SE linearity to the mineralisation.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Sample collection was supervised by geologists. Samples were transported as soon as practicable to independent sample preparation facilities.</li> <li>The core samples were transported to the processing facility in Noakhott where they were logged, and sample selection was undertaken by geologists. The core trays were then transported to MMM laboratories in Noakhott for cutting, sampling and sample preparation. The pulped samples were sent to ALS Ireland for analysis.</li> <li>Approx.67% of drillholes were assayed by downhole gamma logging and for these, sample security is not relevant.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Resource estimation in 2012 was conducted by Oliver Mapeto of Coffey Mining. This was independently reviewed and confirmed by Wardell Armstrong International in 2016. The 2021 Resource Estimate at Sadi was done by Oliver Mapeto acting then as an independent consultant. The 2018 resource estimate, and the 2023 Resource Estimate have been carried out by independent consulting group H&amp;S Consultants Pty Ltd. All of these consulting groups have reviewed and endorsed the sampling, grade estimation and QAQC procedures.</li> </ul>

**Section 2 Reporting of Exploration Results**  
**(Criteria listed in the preceding section also apply to this section)**

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The Resource Estimates are based on drilling conducted on 2 mineral exploration permits held 100% by Aura Energy: 562B4 Oum Ferkik, 2365B4 Oued EL Foule Sud, and on 2 Exploitation permits: 2492C4 Oued EL Foule, 2491C4 Ain Sder held by Tiris Ressources SA. Oued EL Foule Sud is currently under application for renewal. Tiris Ressources SA is owned 85% by Aura Energy subsidiary, Aura Energy Mauritania and 15% by ANARPAM, a Mauritanian Government entity.</li> <li>Aura has completed an Environmental and Social Impact Assessment which concluded there are no known issues arising from native title, historical sites, environmental or third-party matters which are likely to materially affect exploitation.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Aura is unaware of any prior exploration on these areas, other than governmental data gathering projects such as the PRISM-II Mauritania Minerals Project (USGS)</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation is of the calcrete uranium style. It occurs within Proterozoic rocks of the Reguibat Craton. The mineralisation is developed within near surface altered and weathered granites, and within shallow colluvium lying on granite or adjacent metasediments.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>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: <ol style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ol> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Specific drillhole data is not relevant to the reporting of this resource estimation because the topography is not significantly variable, and all holes are vertical, drilled almost perpendicular to sub-horizontal mineralisation at depth of less than 10 metres.</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the</li> </ul>	<ul style="list-style-type: none"> <li>Data aggregation methods are summarised in the Resource Estimate report by H&amp;S Consultants presented in ASX Release entitled “Major Resource Upgrade at Aura Energy’s Tiris Project”, 14<sup>th</sup> Feb 2023</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</p> <ul style="list-style-type: none"> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>All drillholes on which the resource estimate is based were vertical and approximately perpendicular to the thickness of the sub horizontal mineralisation.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to ASX Release entitled "Major Resource Upgrade at Aura Energy's Tiris Project", 14th Feb 2023.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical testwork is ongoing. Information on processing has been reported in ASX announcement: 29 July 2019 "Tiris Uranium Definitive Feasibility Study Completed".</li> <li>ASX Release 23<sup>rd</sup> June 2022 "Pilot Test Confirms Average 550% Upgrading of Uranium at Tiris" confirms average 550% upgrading of uranium with simple screening in test-work.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>In the Oued El Foule and Oued El Foule Sud tenements drilling is planned to test smaller radiometric anomalies that have not been drilled, and several larger anomalies that have only been assessed by wide-spaced drill lines that show promising results.</li> </ul>

### Section 3. Estimation and Reporting of Mineral Resources – PART 1

**Note this Section 3 has been prepared by H&S Consultants and relates to the Hippolyte North, Hippolyte South, Lazare North, Lazare South, and Sadi Resources**

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<p>Aura's resource database was managed by Reflex Hub during the programs prior to July 2019 and managed by Earth SQL after that date. Analyses were forwarded directly from the laboratories to the database manager for incorporation in the database.</p> <p>H&amp;SC conducted some basic checks for internal inconsistencies such as overlapping intervals, records beyond end of hole depth, unassayed intervals and unrealistic drill hole data.</p>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>The Competent Person for the recent Mineral Resource Estimate (MRE) has not visited the Tiris deposits due to time and budget constraints.</p> <p>H&amp;SC bases its view of the geological setting and mineralisation on drill hole data, discussions with Aura geologists and on information in technical reports. Representatives of Coffey Mining and Wardell Armstrong International conducted site visits in April 2012 and May 2016 respectively.</p>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology..</li> </ul>	<p>The uranium mineralisation generally forms thin shallow horizontal tabular bodies ranging in thickness from 1 to 12 m hosted in weathered granite and granitic sediments. Differentiation of the weathered granite from granitic sediments is unreliable from AC sample returns. A purely geological model of the Tiris deposits has not been produced.</p> <p>H&amp;SC created a surface representing the base of the estimates in order to limit the extrapolation of grades into volumes that had no data. This is important at Tiris as there is a general decrease in uranium grades with depth. This surface nominally represents the top of the less-weathered granite, where AC drilling could penetrate no further. The base surface was produced using the locations of the end of the deepest assay from each drill hole. Where drill holes were very close, within around 15 m, the shallower point was generally removed.</p> <p>Areas of obvious outcrop were excised from the MRE assuming a dip of 45 degrees between weathered granite/granitic sediments and the less-weathered granite.</p> <p>The vast majority of the recent drill collar locations were surveyed using a Differential Global Positioning System (DGPS). H&amp;SC used the locations of all drill hole collars that had been located with the DGPS to create a wireframe</p>

	<p>representing the topographic surface. The elevations of all drill holes that had been located using a handheld GPS were then derived from this topographic surface. At the time that the estimates were completed, no topographic survey data were available.</p> <p>The proportion of each block between the topographic and base surfaces, as well as the proportion of outcrop, were assigned to the block model and used to weight the reported estimates.</p> <p>The interpretation of the mineralisation as flat lying tabular bodies is undisputed. The lateral extents of the mineralisation are poorly defined and additional drilling around the edges of the deposits may indicate that mineralisation is more limited than currently interpreted.</p> <p>The extent of outcrop/subcrop and its relationship to free-digging mineralisation is somewhat uncertain but a conservative approach has been taken to minimise this risk.</p> <p>Alternative interpretations of the geology are unlikely to significantly impact estimated resources.</p> <p>The continuity of both grade and geology are affected by the extent of weathering of the granitic host. The continuity does not appear to be affected by faulting.</p>
<p><i>Dimensions</i></p> <ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>The Mineral Resources reported here occur in five separate areas (Hippolyte North, Hippolyte South, Lazare North, Lazare South and Sadi) within a rectangle around 32 km north-south and 42 km east-west. All mineralisation forms flat lying tabular bodies ranging in thickness from 1 to 12 m.</p> <p>The Mineral Resources at Hippolyte North at a cut-off of 100 ppm U3O8 occur in an area 6 km east-west and 5.5 km north-south. This region is comprised of several separate areas that range in plan dimensions from 500 m to 1.1 km wide and 500 m to 2.2 km long. The upper limit of the mineralisation occurs at surface and the reported resources reach a maximum depth of 11 m below surface.</p> <p>The Mineral Resources at Hippolyte South at a cut-off of 100 ppm U3O8 occur in an area 5.6 km east-west and 5.4 km north-south. This region is comprised of three isolated areas each with a north-south length of around 1.3 km and an east-west length that ranges 400 m to 1.1 km. The upper limit of the mineralisation occurs at surface and the reported resources reach a maximum depth of six metres below surface.</p> <p>The Mineral Resources at Lazare North at a cut-off of 100 ppm U3O8 occur in an area 4.5 km east-west and 2.4 km north-south. This region is comprised of three isolated areas. The smallest of these areas has an east-west length of 900 m and a</p>

	<p>north-south length of 550 m. The largest area has an east-west length of 2.2 km and a north-south length of 1.8 km. The upper limit of the mineralisation occurs at surface and the reported resources reach a maximum depth of 12 m below surface.</p> <p>The Mineral Resources at Lazare South at a cut-off of 100 ppm U<sub>3</sub>O<sub>8</sub> occur in an irregular shape with an east-west length of 5.5 km and a north-south length of 2.7 km. The largest area has an east-west length of 2.2 km and a north-south length of 1.8 km. The upper limit of the mineralisation occurs at surface and the reported resources reach a maximum depth of 10 m below surface.</p> <p>The Mineral Resources at Sadi at a cut-off of 100 ppm U<sub>3</sub>O<sub>8</sub> occur in an irregular NNW trending area with an east-west length of 5 km and a north-south length of 9 km. The upper limit of the mineralisation occurs at surface and the reported resources reach a maximum depth of 14 m below surface.</p>
<p><i>Estimation and modelling techniques</i></p> <ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, maximum distance of extrapolation from data points.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>New estimates were generated for Hippolyte North – Zone 3, Lazare South and Sadi deposits. Existing estimates for the remainder of Hippolyte North, Hippolyte South and Lazare North were updated using recent outcrop mapping to excise areas that may not be amenable to free digging.</p> <p>The uranium concentrations were estimated by recoverable Multiple Indicator Kriging (MIK) using the GS3 geostatistical software. The uranium grades at the Tiris deposits exhibit a positively skewed distribution and therefore show reasonable sensitivity to a small number of high grades. MIK is considered an appropriate estimation method for the uranium grade distribution at the Tiris deposits because it specifically accounts for the changing spatial continuity at different grades through a set of indicators variograms at a range of grade thresholds. It also reduces the need to use the practice of top cutting.</p> <p>All drill hole intervals were composited to 0.5 m for estimation.</p> <p>No top-cuts were applied but the average of the mean and median grades was applied to the top indicator class to address any potential extreme values.</p> <p>The five deposits were subdivided into a number of Subzones for estimation, with conditional statistics generated for each of the Subzones. All class grades used for estimation of the mineralised domains were derived from the class mean grades, except the top indicator class.</p> <p>Only U<sub>3</sub>O<sub>8</sub> was estimated. No assumptions were made regarding the correlation of uranium with any other variable. No deleterious elements or</p>

other non-grade variables of economic significance were estimated.

The base surface created to represent the top of the less-weathered granite was used to limit the extrapolation of grades into volumes that had no data.

The proportion of outcrop was estimated for each block based on digitising provided by Aura and used to deplete the MRE on the assumption that this material cannot be dug freely.

No assumptions were made regarding the recovery of by-products. Uranium was assumed to be the only element present in economically significant concentrations, although vanadium is known to occur with the uranium in the main ore mineral carnotite and could potentially be recovered.

The Recoverable MIK technique employed by H&SC in this case requires a set of 14 variogram models, one for each of the fourteen grade bins used. A set of variogram models were created for Subzones of the Hippolyte North, Lazare South and Sadi deposits. These variogram models were applied to Subzones that did not have sufficient data to generate reliable models.

Most deposits have areas that have been drilled on 50x50 m or 70x70 m grids whereas the Hippolyte South areas have only been drilled on a 100x100 m grid. Separate block models were created for Hippolyte North, Lazar North, Lazar South, Hippolyte South and Sadi deposits. Nominal downhole sampling interval is 0.5 m. Drill hole grade data were composited to 0.5 m intervals. The block dimensions were 50 x 50 m in plan view and 1 m vertically. The plan dimensions were chosen as it is the nominal drill hole spacing (preferable for MIK estimation). The vertical dimension was chosen to reflect the anisotropy of the mineralisation and the downhole data spacing.

The minimum selective mining unit size is assumed to be 10x10x0.5 m.

A three-pass search strategy was used to estimate the U3O8 grades at each of the deposits. Each pass required a minimum number of samples with data from a minimum number of octants of the search ellipse to be populated. Discretisation was set to 5x5x2 points in X, Y and Z respectively. The search criteria are shown below. The last short axis of the search ellipse is vertical.

1. 80x80x2.0m search, 16-48 samples, minimum 4 octants
2. 160x160x2.0m search, 16-48 samples, minimum 4 octants
3. 240x240x3.0m search, 8-48 samples, minimum 2 octants

The maximum distance of extrapolation of the reported estimates from drill hole data points is limited to around 220 m.



		<p>The Hippolyte North and Lazar North deposits were estimated by Mr. Mapeto of Coffey Mining in 2011. Lazar South was estimated by Mr. Mapeto in 2012. H&amp;SC has access to these block models and considers that the current Mineral Resource Estimate takes appropriate account of these models. Significant additional drilling has occurred since these estimates were produced so the volume and confidence category have increased. Reasonably large differences exist between the current and previous estimates due to differences in estimation methodologies.</p> <p>No check estimates were produced.</p> <p>No mining has occurred on the Tiris deposits so mine production data were unavailable for comparison.</p> <p>The final H&amp;SC block model was reviewed visually by H&amp;SC, and it was concluded that the block model reasonably represents the grades observed in the drill holes. H&amp;SC also validated the block model statistically using histograms, boxplots, scatter plots and summary statistics.</p>
<i>Moisture</i>	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	Tonnages are estimated on a dry weight basis. The moisture constant was not determined.
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	A cut-off of 100 ppm U3O8 cut off is used to report the resources as it is assumed that ore can be economically mined at this grade in an open pit scenario. This cut-off is considered to be relatively low compared to operating uranium mines, but metallurgical test work indicates that a significant upgrade in uranium and decrease in sulphates can be achieved by a simple screening process.
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It may not always be possible to make assumptions regarding mining methods and parameters when estimating Mineral Resources. Where no assumptions have been made, this should be reported.</i></li> </ul>	<p>All of the resources reported here have been estimated on the assumption that the deposits will be mined by open-pit.</p> <p>Recoverable MIK allows for block support correction to account for the change from sample size support to the size of a mining block. This process requires an assumed grade control drill spacing and the assumed size of the Selective Mining Unit (SMU). The variance adjustment factors were estimated from the U3O8 metal variogram models assuming a minimum SMU of 10x10x0.5 metres (east, north, vertical) with high quality grade control sampling on a 10x10x0.5 metre pattern (east, north, vertical).</p> <p>The application of the variance adjustments to the resource estimates is expected to provide estimates of recoverable resources without the need to apply additional mining dilution or mining recovery factors. Internal dilution, that is, within the SMU unit is accounted for. If a larger SMU size or a broader grade control drill pattern is implemented the selectivity assumed in the reported resources may not be realised.</p>

Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It may not always be possible to make assumptions regarding metallurgical treatment processes and parameters when reporting Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	<p>The metallurgical test work information supplied to H&amp;SC indicates that the Tiris deposits are amenable to a process of crushing, screening and an alkaline carbonate leach in order to recover uranium. Bench scale test work indicates that a significant upgrade in uranium and decrease in sulphate concentrations can be achieved through screening.</p> <p>No penalty elements identified in work so far.</p> <p>No other assumptions have been made.</p>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>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 greenfields 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.</li> </ul>	<p>Aura has informed H&amp;SC that an Environmental and Social Impact Assessment has been completed which concluded there are no known issues arising from native title, historical sites, environmental or third-party matters which are likely to materially affect exploitation. H&amp;SC therefore assume that there are no known unusual aspects of the Tiris deposits that may lead to adverse environmental impacts beyond what is expected from a mining operation.</p> <p>Waste rock and process residue is expected to be disposed of in the areas surrounding the deposits and processing facility in a responsible manner and in accordance with all mining lease conditions.</p>
Bulk density	<ul style="list-style-type: none"> <li>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.</li> </ul>	<p>Dry bulk density of diamond drill core was measured at the ALS facility in Nouakchott using an immersion method (Archimedes principle) on selected PQ diamond drill core intervals ranging in size from 10 to 30 cm. Competent pieces of drill core were selected on a nominal interval of 50 cm. The samples chosen are believed to be representative of the surrounding rock type. All density samples are wrapped in cling film to avoid water absorption. A total of 412 density measurements have been taken from drill core at the Tiris deposits with values ranging from 1.50 to 2.66 t/m<sup>3</sup> and averaging 2.13 t/m<sup>3</sup>.</p> <p>Measured density values show that there is a reasonable correlation between density and the depth of the sample. A regression was used to assign densities to each block in the block model based on the depth below surface.</p>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> </ul>	<p>The classification is based on the search pass used to estimate the block.</p> <p>In some cases, the blocks at surface were populated in a later search pass than blocks immediately below, as these blocks did not meet the minimum search criteria due to the fact that there are no samples above the topography. In order to alleviate this, the minimum search pass from a column of blocks was propagated upwards.</p>

	<ul style="list-style-type: none"> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<p>Pass one nominally equates to Measured Resources, pass two translates to Indicated Resources and Pass three equates to Inferred Resources.</p> <p>This scheme is considered by H&amp;SC to take appropriate account of all relevant factors, including the relative confidence in tonnage and grade estimates, confidence in the continuity of geology and metal values, and the quality, quantity and distribution of the data.</p> <p>The classification appropriately reflects the Competent Person's view of the deposit.</p>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<p>This Mineral Resource estimate has been reviewed by Aura personnel. The estimation procedure has also been internally reviewed by H&amp;SC. No material issues were identified as a result of these reviews.</p> <p>No independent external audits have been completed on the Mineral Resource estimates.</p>
<i>Discussion of relative accuracy/confidence</i>	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<p>The relative accuracy and confidence level in the Mineral Resource estimates are considered to be in line with the generally accepted accuracy and confidence of the nominated JORC Mineral Resource categories. This has been determined on a qualitative, rather than quantitative, basis, and is based on the estimator's experience with a number of deposits at NPM and similar deposits elsewhere. The main factors that affect the relative accuracy and confidence of the estimate are the drill hole spacing and the style of mineralisation.</p> <p>The estimates are local, in the sense that they are localised to model blocks of a size considered appropriate for local grade estimation. The tonnages relevant to technical and economic analysis are those classified as Measured and Indicated Mineral Resources.</p> <p>This deposit remains unmined so there are no production records for comparison.</p>

### Section 3. Estimation and Reporting of Mineral Resources – PART 2

**Note: This Section 3 has been prepared by Oliver Mapeto and relates to the Hippolyte zones C, E, F, G (Marie, Hippolyte West), Ferkik East & Ferkik West Resources**

Criteria	Explanation	Deposit Specific Information
Database integrity	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<p>Aura's database was managed by the independent organisation Reflex Hub, based in Perth.</p> <p>The consultant conducted data validation checks including comparing assay certificates to database records and a variety of checks for internal inconsistencies such as overlapping intervals, records beyond end of hole depth, unassayed intervals, and unrealistic drill hole data. Additional checks included collar details checks. Unrealistic RL on historical data based on new survey data were adjusted using nearest neighbour.</p>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<p>Site visit to the project area was conducted by the Consultant in April 2012 (Coffey Mining). No site visit was conducted during the recent 2015 Sadi South extension drilling campaign. However, based on previous site visit the consultant is familiar with geological setting and mineralisation style.</p>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<p>The uranium mineralisation generally forms shallow horizontal tabular bodies ranging in thickness from 1 to 12m hosted in weathered granite, granitic sediments, and calcrete. Differentiation of the weathered granite from granitic sediments is unreliable from AC sample returns. A purely geological model of the Tiris deposits has not been produced.</p> <p>The material above the top of ore is waste largely made of loose sandy material. The base of ore defines the top of consolidated material, harder going into unmineralized granite basement. Ore surfaces representing the top and base of the mineralisation using a grade cut-off of 100 ppm U308 were generated across all project areas and mineralised zones. The top and base of ore surfaces were used as hard boundaries to control grade estimation.</p> <p>A lower cut-off grade of 75 ppm U308 was used to model the Sadi South. Due to the nature of the mineralisation, the change in lower cut-off grade had marginal changes on the mineralised volumes.</p> <p>The grade varied significantly within the drill hole intersections.</p> <p>At the time that the estimates were completed, the natural topographical surface was not available. The 2012 drill data had no topographic survey data available. Most of the 2015 and 2017 drill collar locations were surveyed using a Differential Global Positioning System (DGPS). The consultant used drill hole collars that had been</p>

		<p>located with the DGPS to create a wireframe representing the topographic surface. The elevations of all drill holes with no survey were then interpolated using the nearest neighbour.</p> <p>The interpretation of the mineralisation as flat lying tabular bodies was defined with high confidence by the top and base of ore surfaces.</p> <p>In some zones, pods of low-grade mineralisation occur showing moderate continuity of both grade and geology. The mineralisation is recent and unaffected by faulting.</p>
<p><i>Dimensions</i></p>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>The Mineral Resource as reported in the 2011 Resource estimate lie in the following areas, Sadi South, Sadi North, Marie, Hippolyte W, Hippolyte E, Oum Ferkik West and Oum Ferkik East. Sadi South resource has since been updated following infill and extension drilling campaign in 2015.</p> <p>The Mineral Resources estimates applied a lower a cut-off grade of 100 ppm U3O8 was applied across all project's areas.</p> <p>Marie occurs in an area 1.2 km east-west and 6 km north-south. This region is comprised of six separate zones that range in plan dimensions from 200m to 1.2 km wide and 500 m to 1.4km long.</p> <p>Hippolyte W occurs in an area 0.8 km east-west and 2.0 km north-south. This region is comprised of three separate zones that range in plan dimensions from 150m to 400m wide and 400 m to 1.0km long</p> <p>Hippolyte E occurs in an area 3.0 km east-west and 4.0 km north-south. This region is comprised of three separate zones that range in plan dimensions from 150m to 600m wide and 400 m to 600m long.</p> <p>Oum Ferkik West occurs as a single zone with dimensions of 1.6 km east-west and 2.5 km north-south.</p> <p>Oum Ferkik East occurs in an area 2.0 km east-west and 2.0 km north-south. This region is comprised of six separate zones that range in plan dimensions from 150m to 400m wide and 400 m to 1.2km long</p> <p>Mineralisation forms flat lying tabular bodies ranging in thickness from 1 to 12m with some internal waste patches occurring within the mineralisation envelope. In places, there the top of mineralisation is covered by sand or waste overburden.</p>
<p><i>Estimation and modelling techniques</i></p>	<ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, maximum distance of extrapolation from data points.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and</i></li> </ul>	<p>The uranium concentrations were estimated using the Ordinary Kriging estimation method.</p> <p>Sample database has assays samples at a nominal 1m sample interval. Some samples were sampled at 0.5m interval using overburden-ore contact depending on thickness of topsoil (sand).</p>

*whether the Mineral Resource estimate takes appropriate account of such data.*

- *The assumptions 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 characterisation).*
- *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*
- *Any assumptions behind modelling of selective mining units.*
- *Any assumptions about correlation between variables.*
- *Description of how the geological interpretation was used to control the resource estimates.*
- *Discussion of basis for using or not using grade cutting or capping.*
- *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*

2m sample composite were created for grade estimation.

Area specific high-grade assays top cuts were applied to minimise grade spearing. The top-cut values were chosen by assessing the high-end distribution of the grade population within each zone and selecting the value at which the distribution became erratic

Each zone was divided into subzones for grade estimation. The subzones were based on defined solid using a 100ppm lower U<sub>3</sub>O<sub>8</sub> grade cut-off. Each zone was coded and only samples within the same matching zone code were used in estimation. Additional estimation parameters were applied as follows:

A three-pass estimation strategy was adopted to estimate the U<sub>3</sub>O<sub>8</sub> grades. The estimation search parameters are shown below for estimation run pass 1, 2 and 3. The short first axis of the search ellipse is vertical.

Pass 1. 300x200x6m search, 8-24 samples

Pass 2. 360x250x6m search, 6-24 samples

Pass 3. 600x400x6m search, 4-24 samples

In addition, upper cut-off grade specific to the ore zones were applied.

Vanadium is a potential by-product and vanadium oxide (V<sub>2</sub>O<sub>5</sub>) has been estimated for the mineral resources using the stoichiometric V<sub>2</sub>O<sub>5</sub>/U<sub>3</sub>O<sub>8</sub> ratio for carnotite group minerals. These V<sub>2</sub>O<sub>5</sub> values represent potentially recoverable vanadium in carnotite and not total vanadium occurring in mineralisation, which is significantly higher in almost all cases. These potentially recoverable V<sub>2</sub>O<sub>5</sub> values are based on the analysis of a substantial database of available sample data and represent average values that may be conservative. This procedure relies on the correlation between uranium and vanadium in carnotite group minerals, which are the only uranium minerals identified to date at Tiris.

No deleterious elements or other non-grade variables of economic significance have been identified or estimated.

Vanadium resource was estimated using the stoichiometric V<sub>2</sub>O<sub>5</sub>/U<sub>3</sub>O<sub>8</sub> ratio for carnotite group minerals as discussed above

Drill hole drill spacing is generally regular grid approximately 100x 200m over 2.5 x 1.4km

Parent block model size was 50 x 50x 2m

Sub-block size 5 x 5 x 0.5m

The vertical dimension was chosen to reflect the anisotropy of the mineralisation and the downhole data spacing.

A three-pass search strategy was used to estimate the U<sub>3</sub>O<sub>8</sub> grades in Sadi South 2021 Mineral



		<p>Resource update. Each pass required a minimum number of samples with data from a minimum number of samples in the search ellipse to be populated with discretisation 5x5x2.</p> <p>The search criteria are shown below. The short first axis of the search ellipse is vertical.</p> <p>Pass 1. 250x250x12m search, 12-24 samples</p> <p>Pass 2. 350x350x12m search, 8-24 samples</p> <p>Pass 3. 500x500x12m search, 6-24 samples</p> <p>Block model grade estimates were validated using the following methods:</p> <p>Statistical comparison of block model grades against drill composite grades by zone</p> <p>Visual check of cross sections, transverse, and long sections</p> <p>Plan views of grade distribution</p> <p>Comparison of block model and drill data grade distribution using histograms</p>
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	Tonnages are estimated on a dry weight basis. The moisture constant was not determined.
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<p>A cut-off of 100 ppm U<sub>3</sub>O<sub>8</sub> cut off is used to report the resources as it is assumed that ore can be economically mined at this grade in an open pit scenario. This cut-off is considered to be relatively low compared to operating uranium mines, but metallurgical test work indicates that a significant upgrade in uranium and decrease in sulphates can be achieved by a simple screening process.</p> <p>Mineralisation occurs as a Uranium vanadate mineral and there is potential of recovery of vanadium as by product which justifies a lower U3O8 grade cut-off based on information supplied to the Consultant following recent leaching test work on the Tiris Uranium Project on uranium and Vanadium.</p>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It may not always be possible to make assumptions regarding mining methods and parameters when estimating Mineral Resources. Where no assumptions have been made, this should be reported.</li> </ul>	<p>The resources reported here have been estimated on the assumption that the deposits will be mined by open pit mining method.</p> <p>Analysis was done for grade continuity and variography. However, in some cases, no reliable variogram structure could be defined on a zone by zone basis. The global variogram was assumed as this could have been affected by lack of data due to limited extent of the individual mineralised zones.</p> <p>Parent block model size was 50 x 50x 2m</p> <p>Sub-block size 5 x 5 x 0.5m</p> <p>The selected sub-blocks were appropriate for minimum selective mining unit.</p>



<p><i>Metallurgical factors or assumptions</i></p>	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It may not always be possible to make assumptions regarding metallurgical treatment processes and parameters when reporting Mineral Resources. Where no assumptions have been made, this should be reported.</i></li> </ul>	<p>The metallurgical test work information supplied to the consultant is based on reports by H&amp;SC which indicates that the Tiris deposits are amenable to a process of crushing, screening and an alkaline carbonate leach in order to recover uranium. Bench scale test work indicates that a significant upgrade in uranium and decrease in sulphate concentrations can be achieved through screening.</p> <p>No penalty elements identified in work done to date.</p> <p>No other assumptions have been made.</p> <p>Metallurgical test work on Tiris ore has shown that about 55% to 58% of vanadium was also extracted during the alkaline leach. The <math>V_2O_5/U_3O_8</math> ratios for the final leach liquor are close to the carnotite <math>V_2O_5/U_3O_8</math> ratio, indicating that effectively only vanadium from carnotite is being leached under these conditions. To date, no vanadium extraction test work has been carried out for the recovery of vanadium from the pregnant leach solution, so further work is required to demonstrate that a marketable vanadium product can be produced on a commercial basis.</p> <p>No further assumptions have been made.</p>
<p><i>Environmental factors or assumptions</i></p>	<ul style="list-style-type: none"> <li><i>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 greenfields 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.</i></li> </ul>	<p>Aura completed an Environmental and Social Impact Assessment which concluded there are no known issues arising from native title, historical sites, environmental or third-party matters which are likely to materially affect exploitation. The consultant therefore assumes that there are no known unusual aspects of the Tiris Uranium deposits that may lead to adverse environmental impacts beyond what is expected from a mining operation.</p> <p>Waste rock and process residue is expected to be disposed of in the areas surrounding the deposits and processing facility.</p>
<p><i>Bulk density</i></p>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<p>The Mineral Resource estimates for Marie, Hippolyte W, Oum Ferkik West and Oum Ferkik East used an average density of 2.0/g/cc dry bulk density based on test done by Aura Energy. This was considered realistic for material and ore similar ore deposits.</p> <p>In the August 2021 Sadi South resource update, an average density value of 2.1g/cc dry bulk density was applied based on previous work as reported by H &amp; S Consultants</p>
<p><i>Classification</i></p>	<ul style="list-style-type: none"> <li><i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li><i>Whether appropriate account has been taken of all relevant factors (i.e., relative confidence in tonnage/grade estimations, confidence in</i></li> </ul>	<p>The Mineral Resource estimates for Marie, Hippolyte W, Oum Ferkik West and Oum Ferkik East were based on:</p> <p>Drill hole drill grid spacing</p>

	<p><i>continuity of geology and metal values, quality, quantity, and distribution of the data).</i></p> <ul style="list-style-type: none"> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<p>Mineralisation and grade continuity</p> <p>The grade estimation search pass used to estimate the block.</p> <p>All mineral Resource estimates estimated in 2011 were classified as Inferred.</p> <p>Regions where grade was assigned an average grade due to insufficient drill data or isolated drill holes were not classified.</p>
Audits or reviews	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<p>This Mineral Resource estimates for Marie, Hippolyte W, Oum Ferkik West and Oum Ferkik east are based on 2011 models and these were reviewed internally by Coffey Mining Consultants. No material issues were identified as a result of these reviews.</p>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>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.</i></li> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<p>The relative accuracy and confidence level in the Mineral Resource estimates are in line with the generally accepted accuracy and confidence of the nominated JORC CODE (2012) Mineral Resource categories. This has been determined on both qualitative and quantitative basis. The main factor that affects the relative accuracy and confidence of the Mineral Resource estimate is sample data density and high variability in uranium grades. Confidence in mineralisation continuity is moderate. Most blocks were estimated in estimation run pass 1 and 2.</p> <p>In regions where the geology and mineralisation are continuous and grade was estimated in estimation run pass 1, the confidence in the grade estimates is high and the resource was classified as indicated. The rest of the resource estimated was classified as inferred.</p> <p>Some blocks were not estimated due to insufficient drill data particularly at the margins of the mineralised pods. Block not estimated in were assigned an average grade and these blocks were not classified.</p> <p>Closer spaced drilling is necessary prior to detailed mine planning studies to increase confidence in the mineralisation variability.</p> <p>There is no record available of historical production data.</p>

## 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	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	<ul style="list-style-type: none"> <li>The Lazare and Hippolyte Mineral Resource was provided to the ASX 14<sup>th</sup> February 2023 for the Tiris Project and forms the basis of this Ore Reserve. The Mineral Resource update was reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, (JORC Code 2012) and validated by H&amp;S Consultants Pty Ltd.</li> <li>The Mineral Resources are inclusive of the Ore Reserves.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>Andrew Hutson of Resolve Mining Services Plus (Competent Person) visited the site between 26th November and 1st December 2023.</li> <li>Andrew Hutson as worked for a number of uranium mining operations including one of similar mineralogy, mining and processing methodologies.</li> </ul>
Study status	<ul style="list-style-type: none"> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	<ul style="list-style-type: none"> <li>The Ore Reserve estimate was based on the Feasibility Study (FS) for the Tiris Project on data built from the PFS and updated from the 2019 Definitive Feasibility Study (DFS).</li> <li>Financial modelling completed to support this Ore Reserve estimate is based on the FS and this modelling shows that the Ore Reserve is economically viable at U<sub>3</sub>O<sub>8</sub> metal prices supported by consensus longterm contract uranium price scenarios in the range of US\$60-65/lb U<sub>3</sub>O<sub>8</sub>.</li> <li>It should be noted the economic analysis does not include revenue from the Inferred resource.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>The cut off grade used to determine ore tonnes is 110 ppm U<sub>3</sub>O<sub>8</sub></li> <li>The definition of the Reserve Estimate cut-off grade can be seen in "costs" section of JORC Table 1 Section 4. Aura completed numerous metallurgical and geometallurgical studies on composite samples of mineralisation at Tiris, which were summarised in ASX and AIM announcement, "Tiris Uranium Project DFS complete" 29 July 2019. These results together with updated mining and processing costs, and other cost inputs support the application of a marginal cut-off grade of 110ppm U<sub>3</sub>O<sub>8</sub>. This cut-off is comparable to peer projects with similar mineralisation types and processing assumptions.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral</li> </ul>	<ul style="list-style-type: none"> <li>Aura Energy proposes to use conventional mining methods employing backhoe excavators and dump trucks to expose and recover the ore. The mining method proposed is utilised world wide and is low risk. No drilling and blasting of the ore over overlying materials is planned due to the unconsolidated nature of the materials.</li> <li>Due to the shallow nature (&lt;5m) and the short time which the mining voids are open before backfilling no pit slope geotechnical work was required.</li> <li>Only Proved and Probable Ore Reserves are used as ore within the mine production schedule and financial modelling. Inferred Mineral Resource for the purpose of the Ore Reserve estimate is treated as waste which has</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p>Resource model used for pit and stope optimisation (if appropriate).</p> <ul style="list-style-type: none"> <li>The mining dilution factors used.</li> <li>The mining recovery factors used.</li> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	<p>been economically carried by the Ore.</p> <ul style="list-style-type: none"> <li>The mine production schedule assumes effective operation of the mining fleet and is based on realistic utilisation estimates</li> <li>The geological block models used as basis for Ore Reserve are MIK recoverable resource models and as such no additional mining dilution or recovery factors have been added</li> <li>Pit optimisations were carried out using Daussalt Whittle software.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<ul style="list-style-type: none"> <li>The metallurgical process proposed is conventional beneficiation with heated alkaline uranium leach and ion exchange.</li> <li>All metallurgical processes proposed are well tested technology and appropriate for the styles of mineralisation.</li> <li>Extensive metallurgical test work has been undertaken and included: <ol style="list-style-type: none"> <li>Material characterisation mineralogy (ANSTO Minerals)</li> <li>Geometallurgical testing</li> <li>Scrubbing tests (AMML)</li> <li>Screening and beneficiation tests (AMML)</li> <li>Diagnostic leaching (ANSTO Minerals)</li> <li>Rheological characterisation of leach feed and post-leach slurries. (Rheological Consulting Services)</li> <li>Ion exchange test work and modelling (ANSTO Minerals)</li> <li>Sodium Diuranate (SDU) precipitation and dissolution. (ANSTO Minerals)</li> <li>UOC precipitation and product characterisation (ANSTO Minerals)</li> <li>Rotary scrubbing and Derrick screening pilot study. (Mintek, South Africa)</li> <li>Steady state simulation (ANSTO Minerals, Aura Energy, Stimulus)</li> </ol> </li> <li>Metallurgical domaining was defined based on two geometallurgical studies on spatially representative trench samples from the Hippolyte, Lazare North and Lazare South Resources. Geometallurgical domains were defined based on uranium upgrade factor at target screen cut size of 150um and Sulphate mineral rejection factor.</li> <li>Uranium recovery between 84.6% and 86.6% was achieved, dependent on geometallurgical domain.</li> <li>Deleterious minerals were identified as gypsum (<math>\text{CaSO}_4 \cdot 2\text{H}_2\text{O}</math>) and Celestine (<math>\text{SrSO}_4</math>). These minerals were monitored in geometallurgical domaining and included in domain definition parameters to manage impact on process. Clay minerals were also identified as potentially deleterious and monitored through inclusion of particle size distribution definitions in geometallurgical domaining. Results of metallurgical test work were undertaken in a staged approach with a focus on assessment of process variability. Bulk bench scale assessment of beneficiation and leaching was undertaken on 120-150kg composite samples representative of geometallurgical domains scheduled for the first 6 years of operation. The beneficiation circuit (rotary scrubbing plus screening)</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>was assessed at pilot scale on 500kg composite samples representative of geometallurgical domains scheduled for the first 6 years of operation. All metallurgical testwork completed on process circuit components was supported by Steady State Simulation modelling. The geometallurgical domain composite samples on which these metallurgical results is based is from Aura's trench sampling program completed in 2018 across the Lazare North and Lazare South Resources. (ASX release: Quarterly report June 2018 and Appendix 5B, 31<sup>st</sup> July 2018). Trench locations were selected to correspond to diamond drill (DD) locations from 2017 drilling program (ASX Release: Tiris Resource upgrade success, 30 April 2018) as reported in ASX release: Quarterly report June 2018 and Appendix 5B, 31<sup>st</sup> July 2018. A total of 11 trenches were excavated (8 Lazare South and 3 Lazare North) to a depth of 4m. Trenches were oriented west to east and sampling was undertaken by channel sampling of north and south walls at 0.5m depth intervals. Interval samples were not split on site. Trench interval samples were split at Aura Energy's Nouakchott laboratory by rotary splitter divider (RSD). A minimum 2kg sub sample was collected for assay, a 1kg sub sample was collected for geometallurgical test work, a 2kg sample was collected for reference and the remainder was stored as inputs for bulk metallurgical composite preparation. Given the fine grained nature of the uranium minerals these sample sizes are appropriate. Sub samples for assay were sent to ALS Minerals, Nouakchott where they were crushed by jaw crusher to -12mm and 1kg was riffle split for pulverising to +85% passing 75 microns. An c. 100g split was bagged and sent for analysis by pressed pellet XRF. Previous analysis comparing different analytical methods (XRF, ICP, DNC) had indicated that XRF is an accurate method on this material, if an x-ray band is selected for measurement that is not affected by the presence of strontium, and this was done. This method will measure total uranium. A sub-split of assay samples was prepared by ALS Laboratories Nouakchott by Method Prep 22 (Crush to 70% less than 6mm, pulverize entire sample to better than 85% passing 75 microns). An c. 100g sample of pulp was split off using mini-riffle splitter, placed in sample envelope and forwarded by air to ALS in Ireland for uranium analysis by ALS Method U-MS62 (U by ICP-MS after 4 acid digestion). 4 acid digestion provides near total extraction. Geometallurgical samples for each interval were screened at 1mm, 300µm, 150µm and 75µm and fractions weighed and assayed by portable XRF. A split of the -75µm fraction for each interval was collected by RSD and sent to ALS Minerals for uranium analysis by ALS Method U-MS62 (U by ICP-MS after 4 acid digestion). 4 acid digestion provides near total extraction. The results of assay and geometallurgical analysis were analysed to define process behaviour based geometallurgical domains. Three domains were identified (2 x Lazare South and 1 x Lazare North). These formed the basis for</p>

Criteria	JORC Code explanation	Commentary
		<p>generation of bulk composite samples for metallurgical test work. Interval samples were sent to Australian MinMet Metallurgical Laboratories (AMML), Gosford, Australia where they were combined based on composite definitions and mixed by rolling barrel. Compositing samples were assayed by Direct Neutron Activation and pressed pellet XRF by Australian Nuclear Science and Technology Organisation (ANSTO Minerals), Lucas Heights, Australia. Composite sample head assays were well reconciled with weighted average grade calculated from input interval samples.</p> <ul style="list-style-type: none"> <li>Aura's UOC product complies with ASTM standards for commercial sale to uranium converters. Analysis of the UOC falls within sales specifications provided by the major uranium conversion facilities. Therefore, no allowance is made for deleterious elements.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li><i>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</i></li> </ul>	<ul style="list-style-type: none"> <li>The major studies incorporated by the Environmental Impact Study (EIA) and Environmental Impact Report (RIMA) included the following: <ol style="list-style-type: none"> <li>1. Archaeology and Cultural Heritage</li> <li>2. Ecology and Biodiversity</li> <li>3. Meteorology, Air Quality, Noise and Vibration</li> <li>4. Radiation Impact Assessment</li> <li>5. Socio-economic, Health, Transport and Security</li> <li>6. Hydrology, Hydrogeology and Water</li> </ol> </li> <li>Waste rock, beneficiation reject, and process plant tailings are inert and will be disposed of in mined out pits. The final location for all waste products is backfilled into the mining voids, however some stockpiling will be required until pit voids become available. It is planned that the process plant tailings will be preferentially placed into the mining voids followed by the coarser screening plant rejects and finally the mine waste and overburden. The processing plant tailings are a filtered product at a 63% solids density and will be transported from the plant to the mine by truck at an average rate of 20 dry tonnes per hour.</li> <li>The ESIA has been approved by the Mauritanian government and exploitation licence has been granted (ASX release: 5<sup>th</sup> October 2017)</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li><i>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Tiris site is a remote site located 700km from the closest settlement of Zouerate and 1400km from the Mauritanian Capital, Nouakchott.</li> <li>Access to all land required has been granted as part of the Exploitation Licence (ASX release: TIRIS URANIUM PROJECT EXPLOITATION LICENCE GRANTED, 18/12/2018).</li> <li>Transportation will be by access road to Zouerate, maintained by the operation. A uranium transport plan has been developed for safe transport of uranium product based on IAEA guidelines.</li> <li>Power will be supplied by series of diesel generator power plants at key process sites. The power supply for the main processing plant and camp will be supplemented by 50% solar generation capacity.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>Water will be sourced and pumped from remote bores and pumping station within a 30km radius of the main processing facility.</li> <li>A camp for accommodation of up to 150 personnel will be provided at the operation.</li> </ul>
Costs	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made, regarding projected capital costs in the study.</i></li> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<ul style="list-style-type: none"> <li>The mine, process plant and infrastructure capital cost estimate for a 1.25Mtpa operation at start-up was prepared by MinCore Engineers from information developed in-house by Aura Energy. The basic key information package provided by Aura included block Process Flow Diagrams (PFDs) as well as key Design Criteria to allow an extension of the design by others. Based upon this package of information, external consultants were employed to further develop sufficient engineering to allow preparation of scope of work, lists, datasheets, specifications and bill of quantities relevant to the scope. Much of the engineering and the preparation of the capital cost estimate was performed by Mincore Pty Ltd. The scope for the facilities also consists of two specialised plant areas and these were separately engineered for both quantities and prices. The specialised plant areas include: <ol style="list-style-type: none"> <li>Fluid Bed Precipitation, Calcining and Drum Packing Plant developed by Adelaide Control Engineering.</li> <li>Leach and Uranium Recovery plant developed by Simulus Engineers.</li> </ol> </li> <li>Ramp-up Capital was based on construction of 3 x 1.25Mtpa beneficiation circuits and 1 x 230ktpa leaching circuit using the same modular packages as start-up. Additional allowance for extension of water pipeline from 30km length to 100km length was included.</li> <li>Cost estimate was prepared for the Feasibility Study and the cost estimate is compliant to Australasian Institute of Mining &amp; Metallurgy (AusIMM) Class 3 estimate with an accuracy -15% to +20%. Capital costs included the process facilities, site infrastructure, utilities and support facilities and a contingency and for the EFS totalled US\$178.2.</li> <li>The original cost estimate for 1 x beneficiation circuit, 1 x leaching circuit and 1 x precipitation and packaging circuit was prepared in Jul 2019, with CAPEX of US\$62.9M. The estimate was updated in August 2021 by MinCore Engineers to US\$74.8M, allowing for cost inflation of 19%. The single circuit CAPEX was escalated by Aura Energy by an additional 15% for the EFS Estimate.</li> <li>FS operating costs for processing and G&amp;A were derived from first principles by Consultants (mining), Simulus Engineers, Adelaide Control Engineering and Aura Energy (treatment and services) and Aura Energy (G&amp;A), with input in all areas from MinCore Engineers.</li> <li>For the FS the mining unit cost were estimated from submissions received from four mining contractors who were provided with the 2019 DFS. Mining</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>contractor unit rates included load and haul or ore and waste plus the return of plant rejects to the mining void, along with the appropriate fixed charges. An owner mining cost was developed for comparison by MiningPlus.</p> <ul style="list-style-type: none"> <li>As the revenue from uranium sales is effectively received in US\$ exchange rates for the Mauritanian Ouguiya and to a much lesser extent other currencies have been used at the prevailing public mid-rate when costs have been estimated.</li> <li>Transportation and local freight costs have been provided by international and local suppliers as part of the estimation of capital and operating costs and are well established for projects in Mauritania.</li> <li>The royalty paid to the Mauritanian government will be 3.5% of net</li> </ul>
Revenue factors	<ul style="list-style-type: none"> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul style="list-style-type: none"> <li>A financial model for the Tiris Uranium Project has been developed by Aura Energy for the EFS.</li> <li>The quantity of ore and head grade delivered to the mill each year is estimated using the optimised block model over the life-of-mine.</li> <li>Metallurgical recoveries are then applied to the mine schedule to calculate final yearly production volumes.</li> <li>Fixed and variable unit costs for mining on an US\$/t waste or ore and US\$/t ROM for processing have been applied to generate the annual operating cost for the Project.</li> <li>Uranium price is based on the long term consensus incentive price to stimulate development of new uranium projects sufficient to meet a range of market demand forecasts.</li> <li>Revenues for Ore Reserve calculations have been based on the US\$ uranium price (per pound U<sub>3</sub>O<sub>8</sub>) from offtake agreement signed with Curzon Resources. This provides an average price of US\$53/lb U<sub>3</sub>O<sub>8</sub> for 30% of annual production over 7 years. (ASX Release: 29 January 2019). This was combined with forward term price estimate of \$61/lb based on the mean of analyst forecasts to give a forecast price of \$60/lb.</li> </ul>
Market assessment	<ul style="list-style-type: none"> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul style="list-style-type: none"> <li>The uranium market is currently in a surplus position largely as a result of strong low cost production growth from Kazakhstan coupled with the significant global demand shock following the Fukushima reactor incident in March 2011.</li> <li>A significant future increase in nuclear generation capacity is expected to be driven by China with production targets for an increase from current operational capacity (22GW) to 58GW by 2020 with a further &gt;30GW under construction at that time. The increase in Chinese capacity is consistent with growing Chinese energy demand and a recently stated emissions target for 20% of energy to be generated from non-fossil fuel sources by 2030 from 9.8% in 2013.</li> <li>The increase in nuclear generation capacity will require a significant increase in uranium mine production. Under current uranium prices (spot US\$50/lb and term US\$55-60/lb) there is a lack of identifiable projects with the returns sufficient to justify new mine investment. As such, post the ramp up of Cigar Lake and Husab there is minimal new production growth expected in primary mine supply. Leading industry participants are highlighting around</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>US\$65/lb as a potential floor price for development of their higher quality projects in more stable jurisdictions.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	<ul style="list-style-type: none"> <li>Aura Energy performed an economic and financial review of the Tiris Uranium Project using a range of uranium price scenarios and spot base metal prices as described above. A discounted cash flow model has been developed with a valuation date of June 2019.</li> <li>NPV<sub>8</sub> range from US\$165M at sales price of US\$61/lb U<sub>3</sub>O<sub>8</sub> to US\$347M at sales price of US\$77/lb U<sub>3</sub>O<sub>8</sub></li> </ul>
Social	<ul style="list-style-type: none"> <li>The status of agreements with key stakeholders and matters leading to social licence to operate.</li> </ul>	<ul style="list-style-type: none"> <li>The Tiris Uranium Project Exploration and Exploitation licences are located on unallocated crown land.</li> <li>No native title claims cover the Tiris Uranium Project</li> <li>The nearest population centre is Zouerate, 700km to the West.</li> </ul>
Other	<ul style="list-style-type: none"> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<ul style="list-style-type: none"> <li>No material naturally occurring risks have been identified.</li> <li>Pre-qualification mining and power contract negotiations have commenced with competitive bids from three local contractors. There are reasonable prospects to anticipate that commercially competitive contract terms will be achieved.</li> <li>Water drilling within a 30km radius of the central process facility has been undertaken with stable flow modelled at 0.3-0.4GL/year capacity. Recent water drilling by the Mauritanian government was successful 57km from the Tiris Project, resulting in 2 operating bores with flow of 15m<sup>3</sup>/hr each. There are reasonable prospects for Aura to locate water on the same geological structure within the target 30km radius, supporting start up operation.</li> <li>There are reasonable prospects to locate water in the Touadeni Basin, ~100km from the central process facility. Capital allowance has been included in the ramp-up Capital to allow for 100km water pipeline.</li> <li>Project commissioning is targeted for 2020/21</li> <li>There are very reasonable grounds to expect that all necessary Government secondary project approvals will be received within the timeframes required for commencement of construction.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul style="list-style-type: none"> <li>Ore Reserves reported here are classified as both Proved and Probable as they are derived from Measured and Indicated Mineral Resources in accordance with the JORC Code (2012).</li> <li>The economically minable component of the Measured Mineral Resource has been classified as a Proved Ore Reserve.</li> <li>The economically minable component of the Indicated Mineral Resource has been classified as a Probable Ore Reserve.</li> <li>The results of the Ore Reserve estimate reflect the Competent Person's view of the deposit.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	<ul style="list-style-type: none"> <li>External audits of Ore Reserve Estimate has not been undertaken</li> <li>The Mineral Reserve estimate, mine design, scheduling, and mining cost model has been subject to internal peer review processes by Resolve Mining Solutions. No material flaws have been identified.</li> </ul>

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>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.</li> <li>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>Reporting of the project Ore Reserve considers;               <ol style="list-style-type: none"> <li>the Mineral Resources compliant with the JORC Code 2012 Edition,</li> <li>the conversion of these resources into an Ore Reserves, and</li> <li>the costed mining plan capable of delivering ore from a mine production schedule</li> </ol> </li> <li>Dilution of the Mineral Resource model and an allowance for ore loss was included in the Ore Reserve estimate. All the Mineral Resources intersected by the open pit mine designs classified as Measured and Indicated Resource has been converted to Proved and Probable Ore Reserves after consideration of all mining, metallurgical, social, environmental, statutory and financial aspects of the Project.</li> <li>The mine planning and scheduling assumptions are based on current industry practice, which are seen as globally correct at this level of study; which further work in the next level of study to understand any periodic cost fluctuations.</li> <li>The project team has estimated the cost estimates and financial evaluation with specialist consultants and team members, which are considered sufficient to support this level of study. The accuracy of the cost estimate is +/-15%.</li> <li>As part of the FS works, the project team have engaged with potential contractors in country to confirm construction, mining and logistics costs.</li> </ul>