



**AUGUST
2021**

TIRIS URANIUM PROJECT

DEFINITIVE FEASIBILITY STUDY

Executive Summary

Capital Estimate Update

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PROJECT HIGHLIGHTS

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 52Mlbs U₃O₈ in JORC Resources 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.



KEY METRICS

Resource	Life of Mine (LOM)	15 Years
	Beneficiation Plant ore throughput—Design	1.25Mtpa
	Process Plant ore through—Design	0.16Mtpa
	ROM uranium grade—LOM	364ppm U ₃ O ₈
Production	Uranium Metallurgical Recovery—LOM	86.1%
	Average annual uranium production	823,000lb U ₃ O ₈
	LOM uranium production	12.4Mlb U ₃ O ₈
Capital	Mining, plant, infrastructure and indirects	US\$68.2M
	Contingency	US\$6.6M
	Total Capital	US\$74.8M
Operations	Exchange Rate (AUD:USD)	0.70
	Uranium cash operating cost (C1) ¹	US\$25.43 /lb U ₃ O ₈
	Uranium AISC operating cost ²	US\$29.81 /lb U ₃ O ₈
Project Financials	Contract uranium price (baseline)	US\$60 /lb U ₃ O ₈
	Project NPV ₈ (incl Royalties and tax)	US\$79.7M
	Project IRR (incl Royalties and tax)	22%
	Cashflow—Total ³	US\$214M
	Cashflow—Annual ³	US\$19.2M
	Project payback from startup	4 years

¹ Cash operating costs include all mining, processing, maintenance, administration costs, but exclude royalties

² All In Sustaining Cost—Includes Sustaining Capital, Royalties, Insurances and Product Transport

³ After tax cashflow

TIRIS URANIUM PROJECT
MAURITANIA
DEFINITIVE FEASIBILITY STUDY
EXECUTIVE SUMMARY
JULY 2019

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INTRODUCTION

Flat lying near-surface mineralization

Low cost mining

Simple Beneficiation



PROJECT HISTORY

The project has several natural attributes which will allow low capital cost development and low operating cost extraction. These attributes are:

1/ FLAT-LYING NEAR SURFACE MINERALIZATION

Typically easy digging, first gravelly sand then moderately compacted gravel

2/ LOW COST MINING

No blasting and minimal overburden

3/ SIMPLE BENEFICIATION

Up to 700% uranium upgrade by simple screening.

4/ VERY SMALL LEACHING CAPACITY

20.2 tph leach throughput, due to beneficiation

5/ HIGH LEACH FEED GRADES

Typically, 1500—2500 ppm U_3O_8

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.

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. The 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.

The 1.25 Mtpa mine and process plant described in this feasibility study has been designed to take full advantage of these unusual characteristics, whilst providing a low capital cost and rapid project development and construction.

DEFINITIVE FEASIBILITY STUDY

Aura Energy as the client organisation, has authorised the preparation of this feasibility study with major assistance from:

- Mincore, an Australian consulting engineering and estimating company with broad African experience.
- Simulus, a specialist process consulting engineering company specialising in leaching and Ion Exchange.
- Adelaide Control Engineering, a specialist consulting engineering and fabrication company in uranium production and drumming.

This 2019 Feasibility Study incorporates the considerable geological, process and engineering development that has taken place since the 2017 Feasibility Study. This Feasibility Study includes a cost estimate complying with the American Association of Cost Engineers (AACE) Class 3 level, accurate to -15% to +20%.

85%

BUDGET PRICING

-15% +20%

AACE CLASS
3 LEVEL
ACCURACY

15 YEARS

LOM



PROJECT LOCATION

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

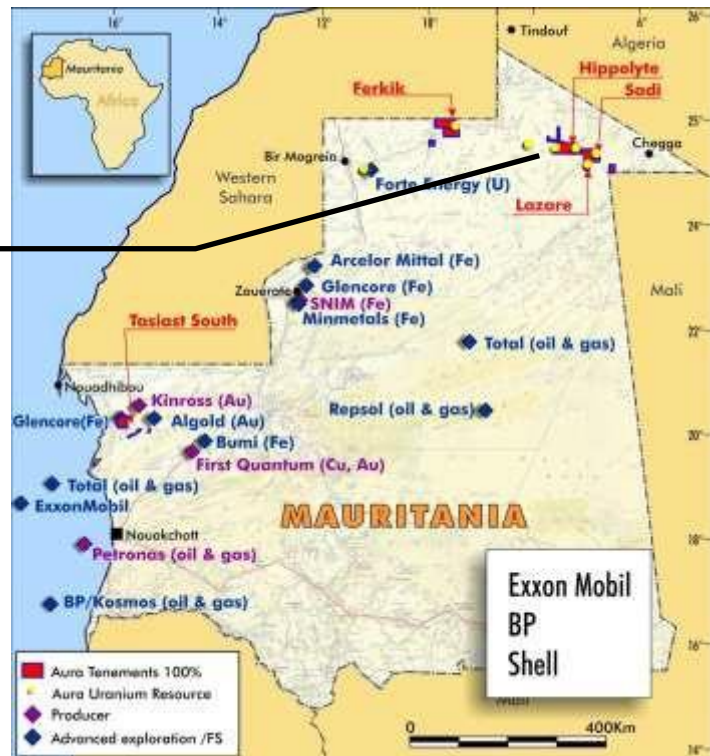


Figure 1.1 Project Location

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.

Feasibility Study Team

Consultant company name	Consultant function	Home location
Mincore Pty Ltd	Engineering Consultant	Melbourne, Australia
Simulus Group	Leaching/IX Engineering consultant	Perth, Australia
Adelaide Control Engineering Pty Ltd.	Uranium Processing Engineering consultant	Adelaide, Australia
Mining Plus	Mining design consultant	Melbourne, Australia
General Studies and Achievements in Africa Sarl (GERA SARL)	Geotechnical consultant	Dakar, Senegal.
PhotoSat	Satellite Surveying	Vancouver, Canada
H&S Consultants Pty Ltd	Resource Estimation	Sydney, Australia
3D Exploration Pty Ltd	Grade determination by gamma logging	Mt Pleasant, WA, Australia
Poseidon Geophysics (Pty) Ltd	Downhole gamma logging	Gabarones, Botswana
Australian Nuclear Science & Technology Organisation	Metallurgical test work, Steady state simulation, Uranium disequilibrium	Lucas Heights, NSW, Australia
Australian MinMet Metallurgical Laboratories (AMML)	Metallurgical test work	Gosford, NSW, Australia
Mintek Laboratories	Metallurgical test work	Johannesburg, South Africa
CSIRO Minerals	Mineralogy	Clayton, VIC, Australia
The University of SA	Mineralogy	Adelaide, SA, Australia
Pontifex and Associates	Mineralogy	Adelaide, SA, Australia
Activation Laboratories Ltd	Uranium determination	Ancaster, Ontario, Canada
Geoterra Pty Ltd	Hydrogeological consulting	Newtown, NSW, Australia
SES sarl	Water geophysics	Nouakchott, Mauritania
ALS Global	Chemical analysis	Nouakchott, Mauritania
Wallis Drilling	Air-core drilling	Midvale WA, Australia
Capital Drilling	Diamond Drilling	Mauritius
Earth Systems	Environmental & ESIA Consultants	Melbourne, Australia
METS Engineering	Operating Cost review	Perth, WA, Australia
Golders Associates	Groundwater supply review	Perth, WA, Australia

TENURE AND LAND ACCESS

Fully permitted for development with only minor operations permits required



The project is 85% owned by Tiris Ressources SA, a subsidiary of Aura Energy Limited (Aura), and 15% owned by the Mauritanian Government through its agency Societe Mauritanienne des Hydrocarbons et de Patrimoine Minier (SMH-PH). Aura is an Australian-based resources company listed on the Australian Stock Exchange (ASX) in 2006 and on the London Stock Exchange (AIM) in 2016. Aura’s registered office is located in Windsor, Victoria, Australia.

Table 1.2: Tenement summary

Permit Number	Tenement Name	Area km ²
561 B4	Oum Ferkik (application)	38
2492 C4	Oued El Foule	190
2491 C4	Ain Sder	207

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

- Mining Exploitation licences granted for the two Eastern Resource zones at Oued El Foule and Ain Sder on February 8th, 2019¹
- Environmental and Social Impact Assessment (ESIA), approved on 5th October, 2017².

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.

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.

GEOLOGY

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.

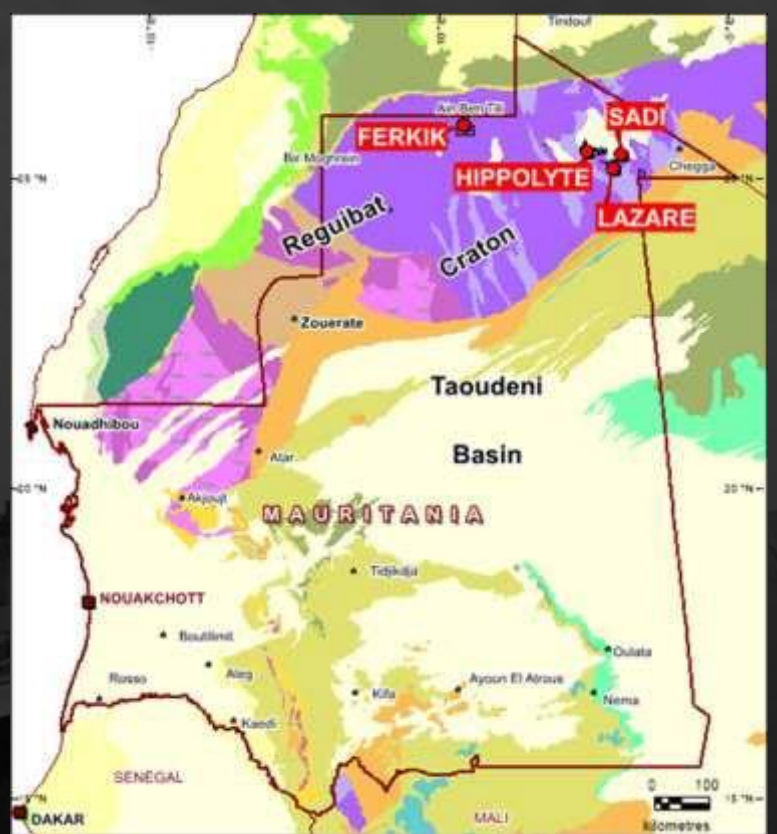


Figure 2.1: Regional geology of Mauritania; red dots are Aura uranium resources

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.

MINERALIZATION

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.

The mineralised gravels and weathered granite occur at surface, or under a very thin (<30cm) veneer of wind-blown sand. These 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.

The uranium mineralisation occurs principally as carnotite $K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$. The carnotite occurs 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.

This mineralised veneer of relatively unconsolidated material is typically less than 5 metres in thickness, although locally it can occur up to 12 m depth.



Figure 2.2: Carnotite mineralization in the Tiris Resources

The deposits appear to have formed by near-surface leaching of uranium from the uraniumiferous 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.

RESOURCES AND RESERVES

The Tiris Project has a total Mineral Resource of 51.8Mlb U₃O₈ being 92Mt at 255ppm U₃O₈.

The Maiden Ore Reserve for the Tiris Project is 8.1Mlb U₃O₈ being 10.9Mt at 336ppm U₃O₈.

RESOURCES

The global resource estimate for the Tiris Uranium Project, at 3 different lower cut-off grades is presented in Table 3.1.

Table 3.1: Global Tiris Resource summary ^{1, 2}

Cut-off U ₃ O ₈ ppm	Class	Tonnes (Mt)	U ₃ O ₈ ppm	U ₃ O ₈ (Mlb)
100	Measured	10.2	236	5.3
	Indicated	24.5	218	11.8
	Total M+I	34.7	224	17.1
	Inferred	57.4	274	34.7
	Total Resource	92.1	255	51.8
200	Measured	4.6	355	3.6
	Indicated	9.5	334	7.0
	Total M+I	14.1	341	10.6
	Inferred	36.8	344	27.9
	Total Resource	50.9	345	38.5
300	Measured	2.1	497	2.3
	Indicated	4.0	465	4.1
	Total M+I	6.1	476	6.4
	Inferred	18.0	446	17.7
	Total Resource	24.1	455	24.1

¹ The information in this announcement is extracted from ASX announcement entitled “Tiris Resource Upgrade Success” released on 30th April 2018 and available to download from asx.com.au 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.

² This Tiris Resource Inventory aggregates the 2018 Resource Estimates by H&S Consultants Pty Ltd on the Lazare North, Lazare South, Hippolyte, and Hippolyte South deposits and the 2011 Resource Estimates by Coffey Mining on the Sadi, Ferkik West, Ferkik East, Hippolyte West and Agouyame deposits. The 2011 Resource Estimate was the subject of Aura ASX announcement dated 19 July, 2011 “First Uranium Resource in Mauritania”. The 2011 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 estimates in the relevant market announcement continue to apply and have not materially changed.

RESOURCES

Table 3.2: Tiris Resource by Resource Zone (combined 2018 & 2011 Resource Estimates) ^{1, 2 (p16)}

Cut-off U ₃ O ₈ g/t	Resource Zone	Class	Tonnes (Mt)	U ₃ O ₈ (g/t)	U ₃ O ₈ (Mkg)	U ₃ O ₈ (Mlb)
100	Hippolyte	Measured	5.7	225	1.3	2.8
		Indicated	6.5	217	1.4	3.1
		Inferred	7.4	281	2.1	4.6
	Hippolyte South	Indicated	4.8	192	0.9	2.0
		Inferred	3.1	176	0.5	1.2
	Lazare North	Measured	1.1	284	0.3	0.7
		Indicated	10.6	229	2.4	5.4
		Inferred	3.9	210	0.8	1.8
	Lazare South	Measured	3.4	239	0.8	1.8
		Indicated	2.6	219	0.6	1.3
		Inferred	9.1	214	2.0	4.3
	Sadi	Inferred	8.6	330	2.8	6.2
	Ferkik West	Inferred	11.9	330	4.0	8.8
	Ferkik East	Inferred	4.5	240	1.1	2.4
Hippolyte West	Inferred	6.3	300	1.9	4.2	
Agouyame	Inferred	2.6	210	0.5	1.2	
	Total		92.1	255	23.5	51.8
200	Hippolyte	Measured	2.3	345	0.8	1.8
		Indicated	2.4	344	0.8	1.8
		Inferred	3.5	441	1.5	3.4
	Hippolyte South	Indicated	1.6	290	0.5	1.0
		Inferred	0.7	293	0.2	0.5
	Lazare North	Measured	0.7	372	0.3	0.6
		Indicated	4.5	348	1.5	3.4
		Inferred	1.3	354	0.5	1.0
	Lazare South	Measured	1.6	352	0.5	1.2
		Indicated	1.0	350	0.4	0.8
		Inferred	3.1	364	1.1	2.5
	Sadi	Inferred	7.3	350	2.6	5.7
	Ferkik West	Inferred	11.2	340	3.9	8.5
	Ferkik East	Inferred	2.8	280	0.8	1.7
Hippolyte West	Inferred	5.5	320	1.8	3.9	
Agouyame	Inferred	1.4	240	0.3	0.7	
	Total		50.9	343	17.5	38.5
300	Hippolyte	Measured	1.0	469	0.5	1.1
		Indicated	1.1	471	0.5	1.1
		Inferred	1.9	596	1.1	2.5
	Hippolyte South	Indicated	0.5	402	0.2	0.4
		Inferred	0.2	419	0.1	0.2
	Lazare North	Measured	0.4	481	0.2	0.4
		Indicated	2.0	475	1.0	2.1
		Inferred	0.6	495	0.3	0.6
	Lazare South	Measured	0.7	478	0.4	0.8
		Indicated	0.4	482	0.2	0.5
		Inferred	1.4	511	0.7	1.6
	Sadi	Inferred	4.1	430	1.8	3.9
	Ferkik West	Inferred	6.7	400	2.7	6.0
	Ferkik East	Inferred	0.9	370	0.4	0.8
Hippolyte West	Inferred	2.2	430	1.0	2.1	
	Total		24.1	454	10.9	24.1

RESOURCES

Total resources of 51.8Mlb U_3O_8 at 100ppm cut-off.

17.1Mlbs U_3O_8 of resource in Measured and Indicated categories

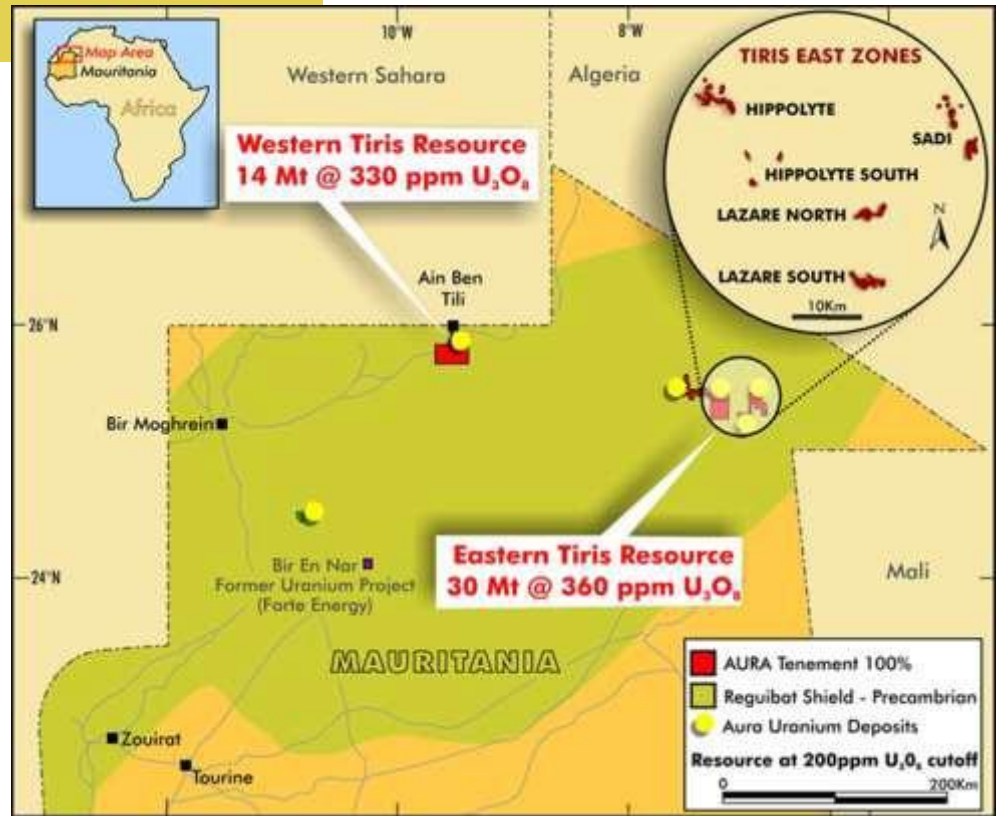


Figure 3.1: Tiris Global Resources at 200 ppm U_3O_8 cutoff

Three resource estimation exercises have been carried out on Aura's Tiris uranium resources.

The initial exercise was carried out in 2011/2012 by Coffey Mining, an Australian based consulting firm with extensive experience in resource estimation of calcrete uranium mineralisation. This study resulted in an Inferred Resource of 50.3 Mlbs U_3O_8 at an average grade of 332 ppm U_3O_8 , based on a lower cut-off grade of 100 ppm U_3O_8 . The exercise included a site visit by the Coffey resource consultant.

In 2014, a second resource estimate to upgrade a portion of the resource to Indicated Resource status, was carried out on the Lazare North zone.

Both of these resource exercises were based on vertical air-core drilling, conducted by Australian contractor Wallis Drilling. An NQ size bit was used, resulting in a hole diameter of approximately 80 mm. A 100m x 200m drill pattern was employed for Inferred Resources, and a 100m x 100m pattern for Indicated Resources. Uranium grades were determined from drill chip samples on 0.5m or 1.0m intervals, by chemical analysis at ALS Laboratories in Ireland. Industry standard Quality Assurance/Quality Control analyses were carried out on sample duplicates, blanks, certified reference material and by extensive referee analyses.

RESOURCES

In 2017, a major drilling program was undertaken to upgrade a substantial portion of the resources to Measured and Indicated status. Air-core drilling was again conducted by Wallis Drilling. Holes were drilled vertically on a 50m x 50m pattern in the Hippolyte, Lazare North and Lazare South resource zones. To test short range variability and provide geostatistical information, three 100m x 100m squares were drilled out at 12.5 m drillhole spacing. Uranium grade in this program was estimated by downhole gamma logging, carried out by consultants Poseidon Geophysics.

In total, 1,691 drill holes were logged with the total gamma logging system between June 2017 and November 2017. These total count gamma logs were converted to equivalent uranium grades (eU₃O₈) by applying calibration information, an air correction and minor smoothing. A check was also done on the disequilibrium between U-238 and its gamma emitting daughter products. A disequilibrium factor was determined in order to adjust all eU₃O₈ grades to their true U₃O₈ grades.

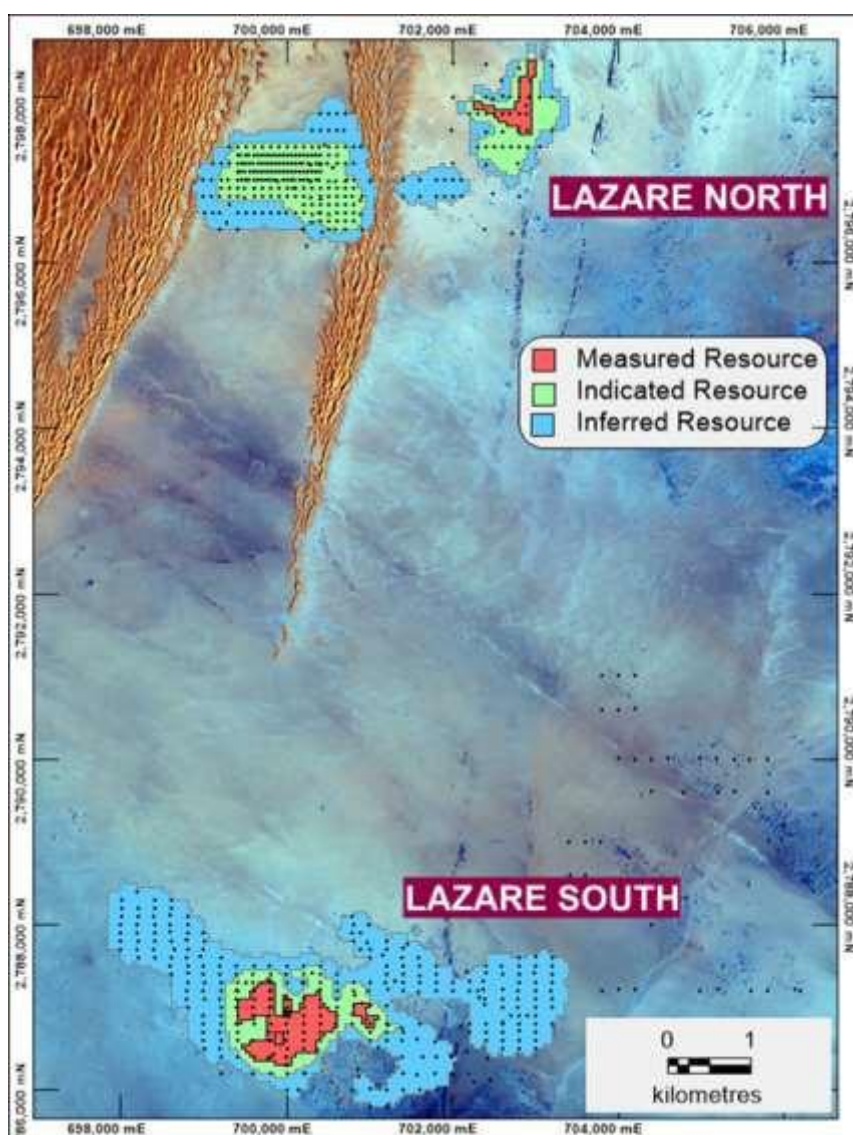


Figure 3.2: Lazare resources—2018 resource estimate

RESOURCES

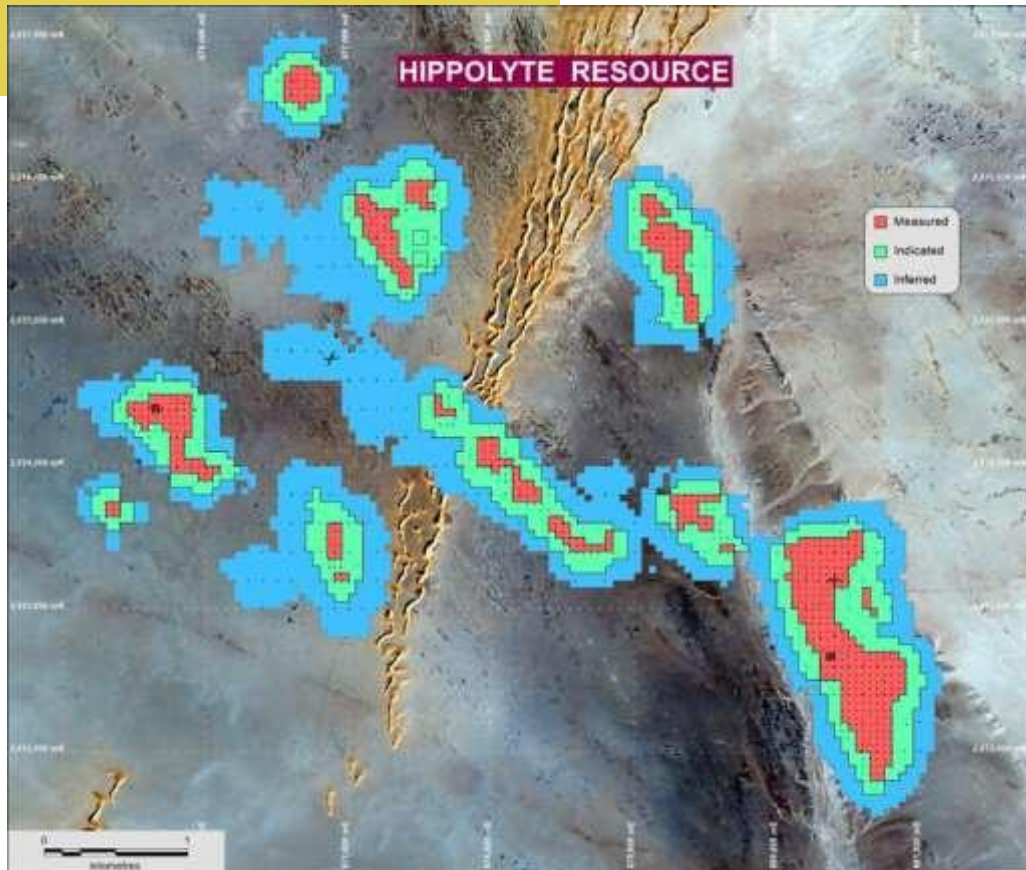


Figure 3.3: Hippolyte resources—2018 resource estimate

Large diameter (PQ) triple tube diamond drilling was carried in 56 holes, to validate grade estimation by gamma logging and to provide density information.

Extensive quality assurance procedures were employed involving:-

- regular logging of reference holes,
- repeat logging of 1 in 20 holes,
- comparison of assayed diamond drill core with grades determined by downhole gamma logging,
- and referee analysis of drillcore analyses.

Downhole gamma logging results were compiled and interpreted by Australian consultants 3D Exploration Pty Ltd, who have extensive experience in this field and in calcrete uranium deposits.

Resource estimation on the Lazare and Hippolyte Zones (see Figures 1.4 & 1.5) was carried out in 2018 by specialist resource consultants, H&S Consultants, based in Sydney.



ADDITIONAL RESOURCE POTENTIAL

Excellent potential exists to add to the resource base during the life of the operation.

Aura's exploration to date in the region has largely focussed on radiometric uranium channel anomalies defined by regional airborne radiometric survey data. The current resources correlate well with airborne anomalies. Strong uranium anomalies exist elsewhere in the district, similar in anomaly strength to those occurring over Aura's known resources. Most of these zones have had only limited evaluation by Aura and other companies. Potential clearly exists to locate additional mineralised and resource zones, within these untested and lightly tested anomalous areas.

Additionally airborne radiometric data does not extend further east than 7°W or further north than 26°N, and does not fully cover all parts of the Tiris Resource. Over 20,000 km² of similar geological setting lying to the east and north of the current Tiris Resources within Mauritania, is not covered by the airborne survey data. Parts of this area have had some ground radiometric surveying over broadly spaced lines (1 to 2 km), locating some uranium anomalous zones which have not been followed up as yet. Excellent potential therefore exists, to locate additional mineralised zones in this large area which has not had good quality radiometric coverage.

Potential also exists in the immediate vicinity of the currently known resources. In the Sadi zone, drilling has demonstrated that mineralisation extends at least 1.5 km south of the current resource boundary. This has not yet been closed off by drilling, or included in the resource. Additionally the surface radiometric response of mineralisation that has been used to guide exploration and drilling, can be shielded by a shallow cover (20 cm) of unmineralized material. As the southern extension of the Sadi mineralisation has in places no surface radiometric response, potential clearly exists to expand the resource in this area. There are also other current resource zones in the vicinity, where extensions to the mineralisation may not have a surface radiometric response.

The delineation of Measured and Indicated Resources has been limited for cost reasons only, to portions of the Lazare and Hippolyte deposits. Additional Measured/Indicated Resources will be able to be established within the currently defined Inferred Resources zones, and within further resource zones yet to be outlined.



ORE RESERVES

The overall project financial model was prepared by Aura using inputs from the mining schedule cost model. Detailed processing, tailings disposal, power, water, camp infrastructure and logistics, and other costs were also developed as part of the Feasibility Study. Mining Plus 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, at a 175 ppm U_3O_8 cut off is shown in Table 3.2.

Table 3.2: Ore Reserve estimate

Description	Mt	U_3O_8 (ppm)	U_3O_8 (Mlb)
Lazare North			
Proved	0.7	354	0.6
Probable	4.4	332	3.2
Lazare South			
Proved	1.5	342	1.1
Probable	0.7	340	0.5
Hippolyte			
Proved	1.9	331	1.4
Probable	1.7	334	1.3
Total			
Proved	4.1	339	3.1
Probable	6.8	333	5.0
Total	10.9	336	8.1

ORE RESERVES

The Ore Reserve 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 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, 1st May 2018.
- Pit optimisation and mine design, Mining Plus.
- Capital costs, Mining Plus, Mincore, Simulus Engineers, Adelaide Control Engineers (ACE) and Aura.
- Operating costs, Mining Plus, Mincore, Simulus Engineers, ACE and Aura.

86%

CONVERSION OF
MEASURED
RESOURCES

71%

CONVERSION OF
INDICATED
RESOURCES

76%

TOTAL RESOURCE
CONVERSION

92%

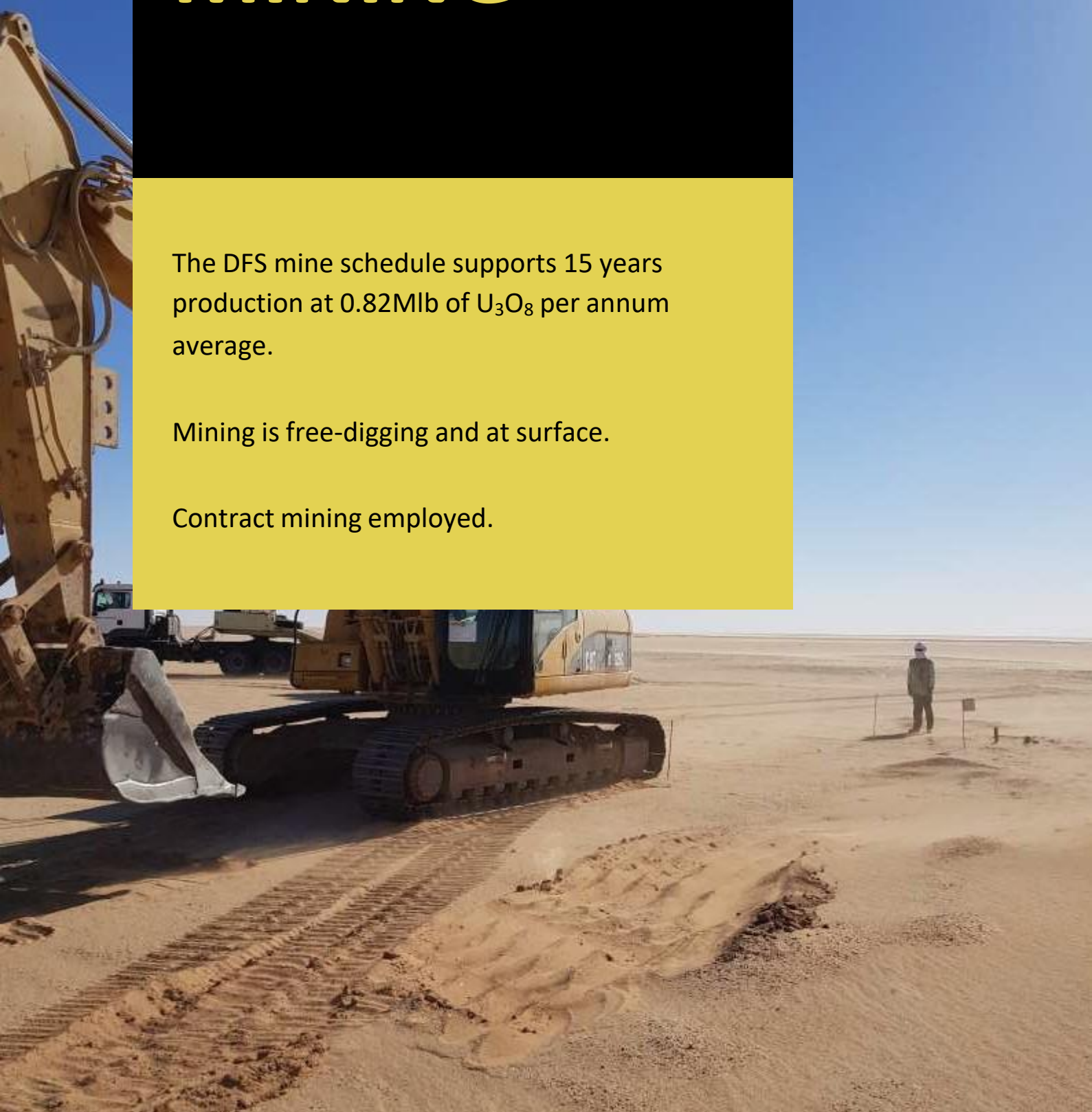
FIRST 10 YEARS
PRODUCTION IN
PROVEN AND
PROBABLE RESERVE

MINING

The DFS mine schedule supports 15 years production at 0.82Mlb of U₃O₈ per annum average.

Mining is free-digging and at surface.

Contract mining employed.





Mining Plus (MP) was commissioned by Aura Energy in November 2018, 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, Hippolyte South 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.
- Develop mining cost model.
- Estimate Ore Reserves and report in accordance with JORC (2012 Edition).

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 Feasibility Study has shown that the three mining areas can be developed in a practical sequence to produce 0.8-1.1 Mlb/yr UO_4 through the processing plant for over ten years. The first nine years are from currently defined Measured or Indicated Resources, which form the declared Ore Reserve. The total mining cost to develop and operate the mine for ten years, has been estimated at US\$66.6 million or US\$2.24/tonne of material mined. This includes both fixed and variable operating costs, but excludes any capital spent prior to mobilisation.

PIT OPTIMIZATION

MiningPlus completed resource optimisations for the Lazare North, Lazare South, Hippolyte, Hippolyte South and Sadi Resources using the 2018 Resource estimate, along with input parameters developed as part of the FS. Pit optimisations were completed for all mineralisation categories within the resource by Whittle optimisation. Measured and Indicated resources were included in optimisations for Ore Reserves, while Inferred resources were included as potential mineral inventory towards the later stages of mine life.

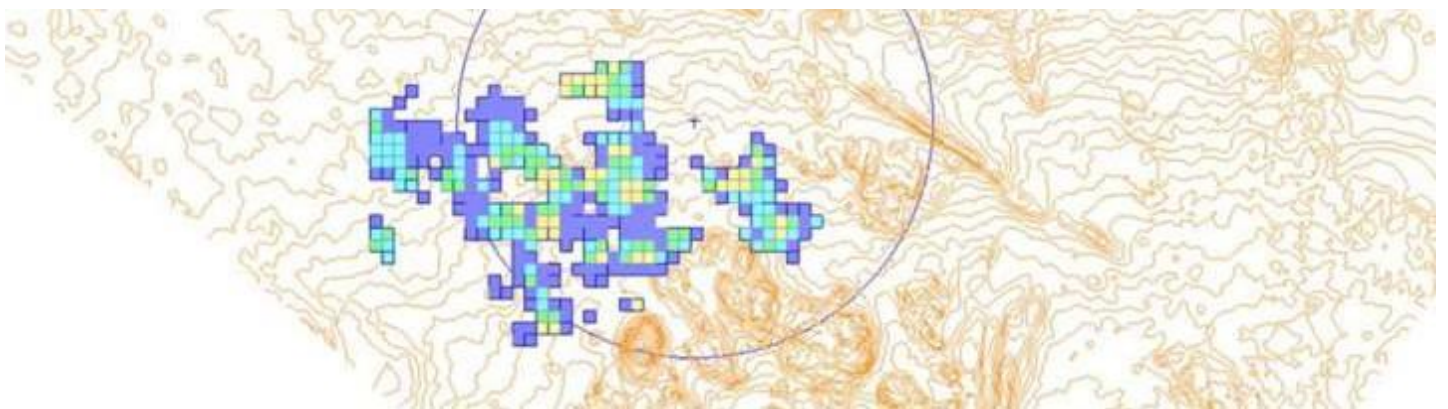
Optimisations included locations of the beneficiation circuit to minimise haulage distance. For the optimisations two beneficiation circuit locations were selected for Lazare North, a single location for Lazare South and three for Hippolyte.

The optimisation sales price was set at \$44/lb U_3O_8 as per the offtake agreement with Curzon Uranium Trading (refer to Marketing section 17). Utilising the updated costs and recoveries the cut-off grade was recalculated, resulting in a grade of 179 ppm U_3O_8 .

As the JORC mineral resource model provided for the Tiris Project utilised an MIK estimation method with discrete, pre-defined grade parcels, the cut-off grade selected for the Feasibility Study planning was 175 ppm U_3O_8 .

The optimisations were performed by resource over a range of Revenue Factors (RF). The revenue factor 1 pit was selected for the study. This is because the mine life is not long enough for the discounting effects on NPV to have a material impact at this level of the Feasibility Study. Therefore, the cash flow, rather than the discounted cash flow, is the governing factor in pit selection.

These results are shown at the same scale to allow a direct comparison, and show that Lazare North and Hippolyte are nearly double the size of Lazare South. However, when the optimisations include Inferred Resources, there is significant increase in the potential ore from Lazare South. This indicates the area that should be targeted with further drilling to increase the Ore Reserve. The Lazare South area is currently potentially economic, but not of high enough geological confidence as per the JORC Mineral Resource classification.



OPTIMIZATION RESULTS

The optimisation results for Lazare North, Lazare South and Hippolyte Measured and Indicated resources can be seen in Figure 4.1 to Figure 4.3.

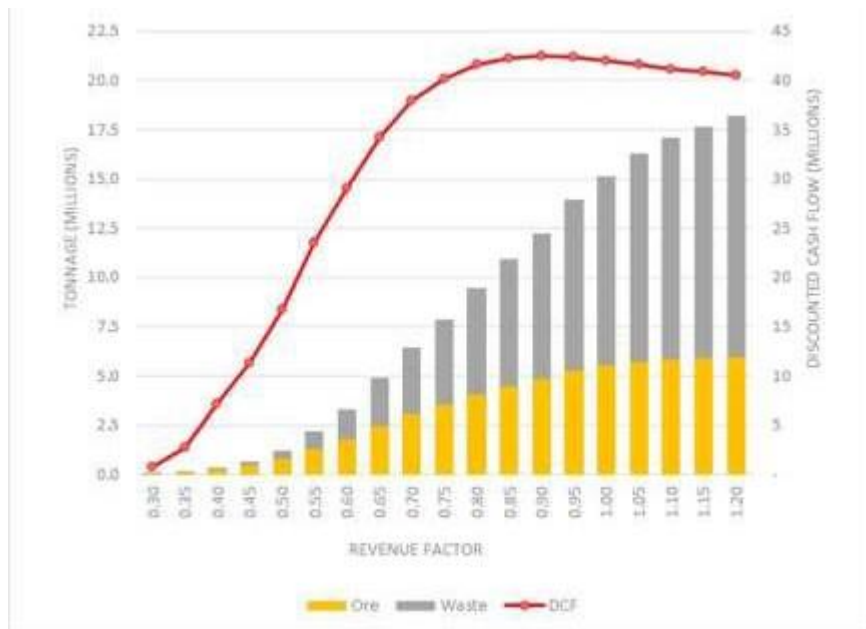


Figure 4.1: Lazare North optimisation results (Measured and Indicated)

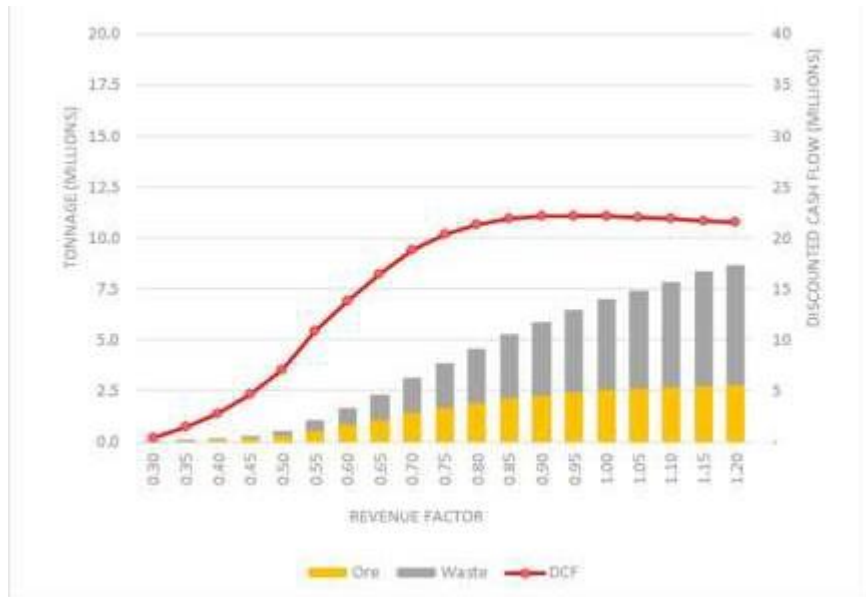


Figure 4.2: Lazare South optimisation results (Measured and Indicated)

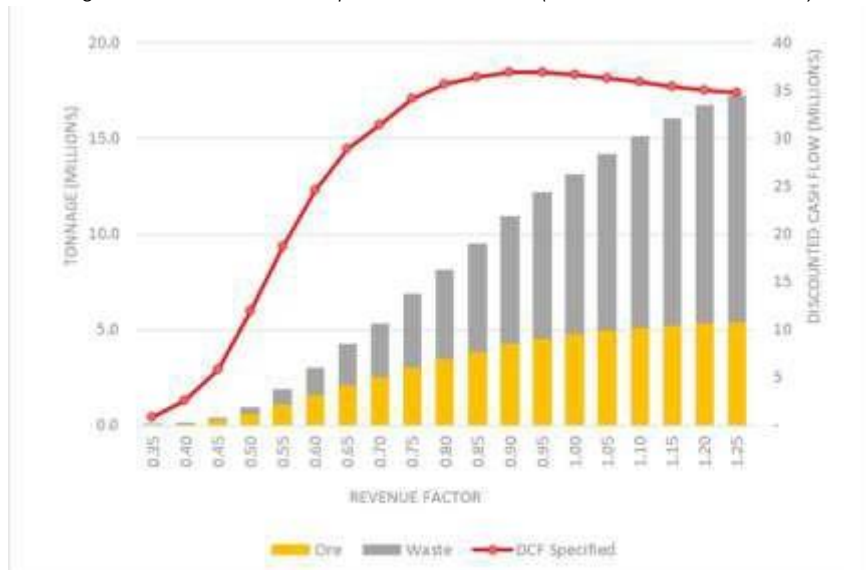


Figure 4.3: Hippolyte optimisation results (Measured and Indicated)

Pit optimisation sensitivities were completed for variations in mining cost, non-mining costs, recoveries and sales price.

The most sensitive parameter is the sales price which is not unexpected. Increasing sales price not only increases the value of the base case optimisations, but also increases the value to the remaining blocks causing the pit shells to increase.

Changes to processing recoveries have a similar effect. Recovery increases result in more product for sale, leading to more revenue which is similar to an increased sales price.

The mining and non-mining costs have a lesser impact on the project size with the non-mining costs returning a 2:1 impact, where a 10% change in non-mining costs can result in nearly a 20% change in DCF. The mining cost sensitivity is much less with a 10% change here only resulting in a 3% variation in DCF.

Figure 4.4 summarises the sensitivity runs by final product generated.

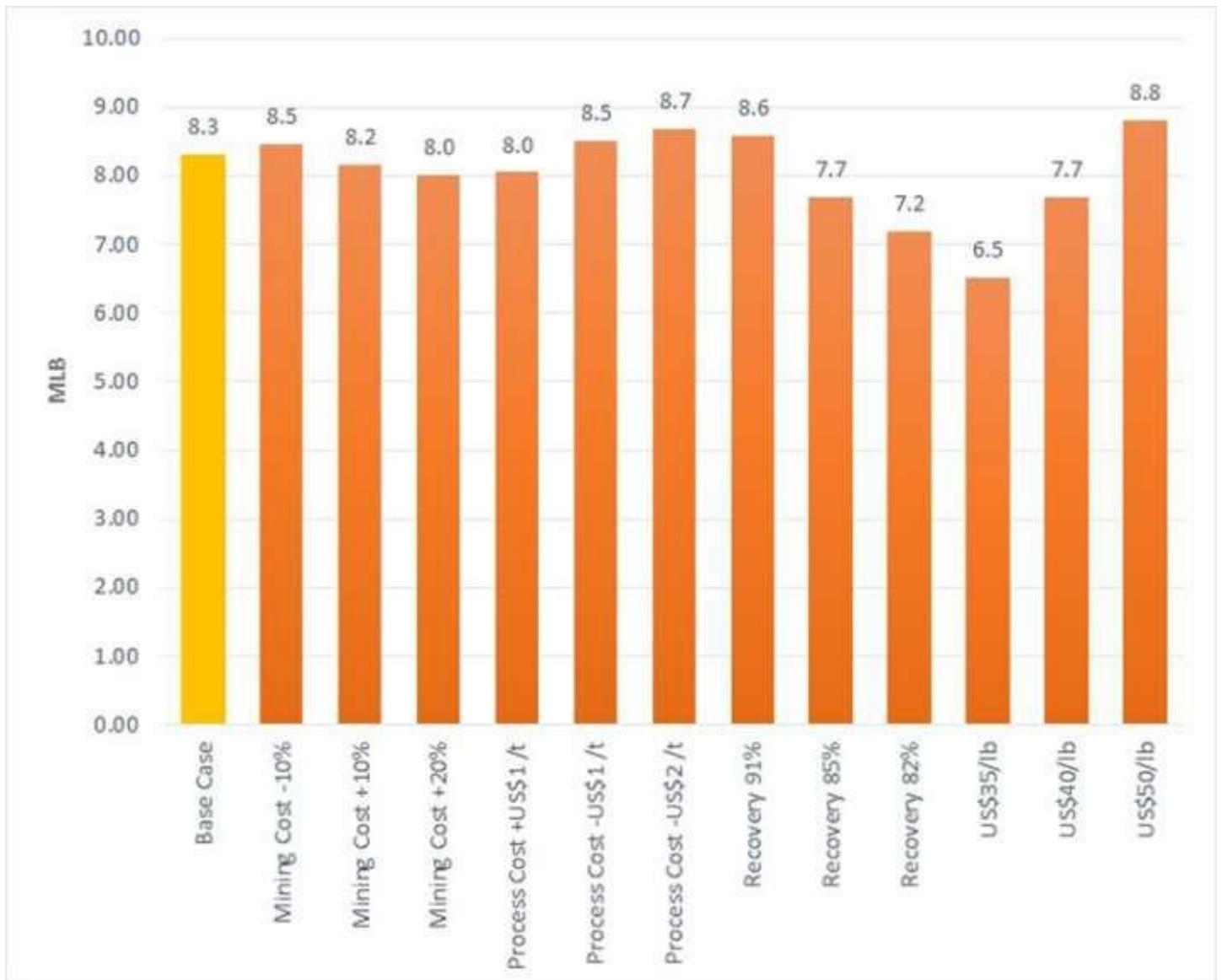


Figure 4.4: Optimisation sensitivity results by final product

MINE DESIGN

Detailed pit designs were not undertaken for the study. This is due to the shallow nature of the deposit and that the resource block sizes are 50m x 50m, which when agglomerated into 100m x 100m panels become a mineable pit in their own right. These 100m x 100m panels are large enough to be mined independently if required and each has sufficient length for an access ramp.

MINING METHOD AND CYCLE

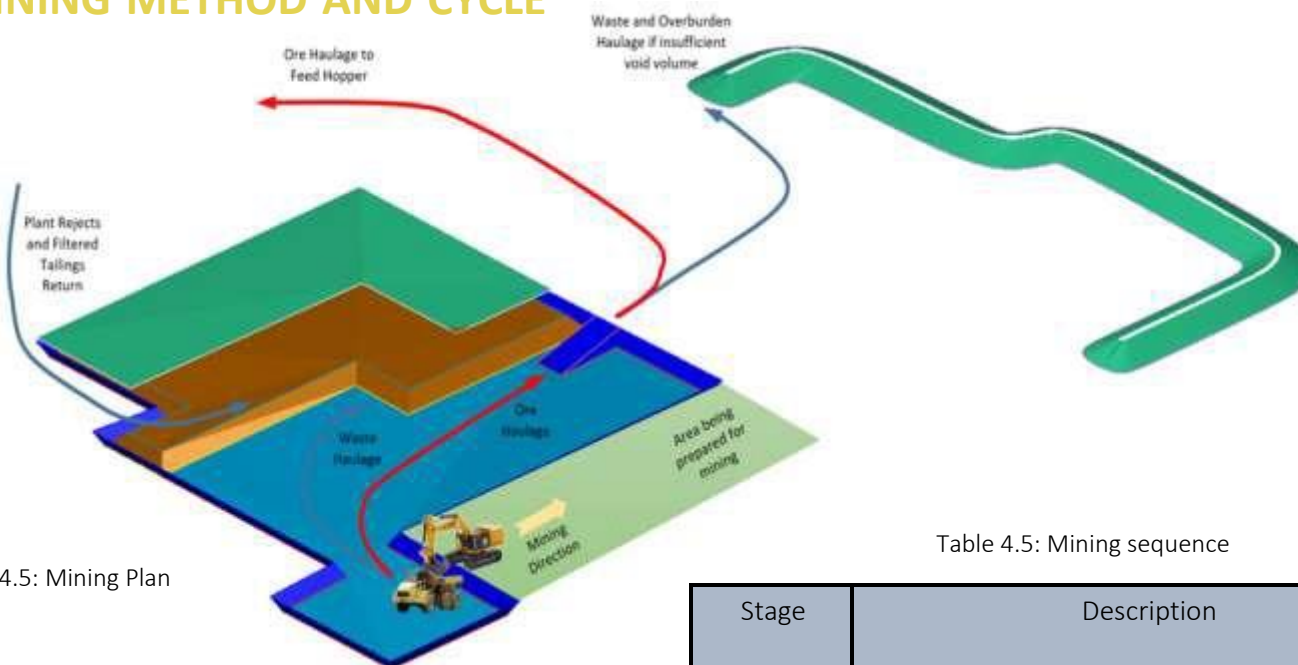


Figure 4.5: Mining Plan

Table 4.5: Mining sequence

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.

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.

MINE SCHEDULE

Mine scheduling was completed with the following constraints:

- Target processing feed rate of 1.25 Mtpa
- A 10 year project life
- Any Inferred mineralisation to be deferred until the end of the mine life
- No ore stockpiling

The schedule was completed on a monthly basis 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 Inferred panels were treated as a separate mining area requiring additional feed hopper relocations. The final sequence was:

- Lazare North East
- Lazare North West
- Lazare South
- Hippolyte Central
- Hippolyte South
- Hippolyte North
- Hippolyte North (Inferred)
- Hippolyte Central (Inferred)
- Lazare South (Inferred)



Figure 4.6 summarises the annual mining rate by deposit. The schedule has allowed for relocations of the feed hopper and beneficiation circuits between locations. A production shut down of 30 days was included each time a relocation was required.

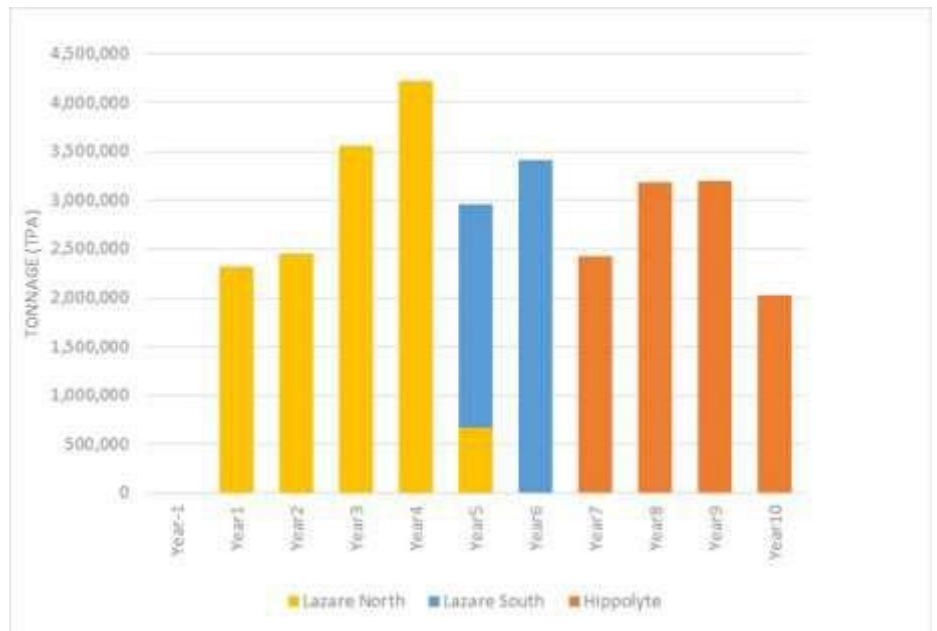


Figure 4.6: Mining by deposit

Figure 4.7 summarises the annual mining rate required to feed the processing plant. The average mining rate required for the ten years is 3.0 Million tonnes per year.

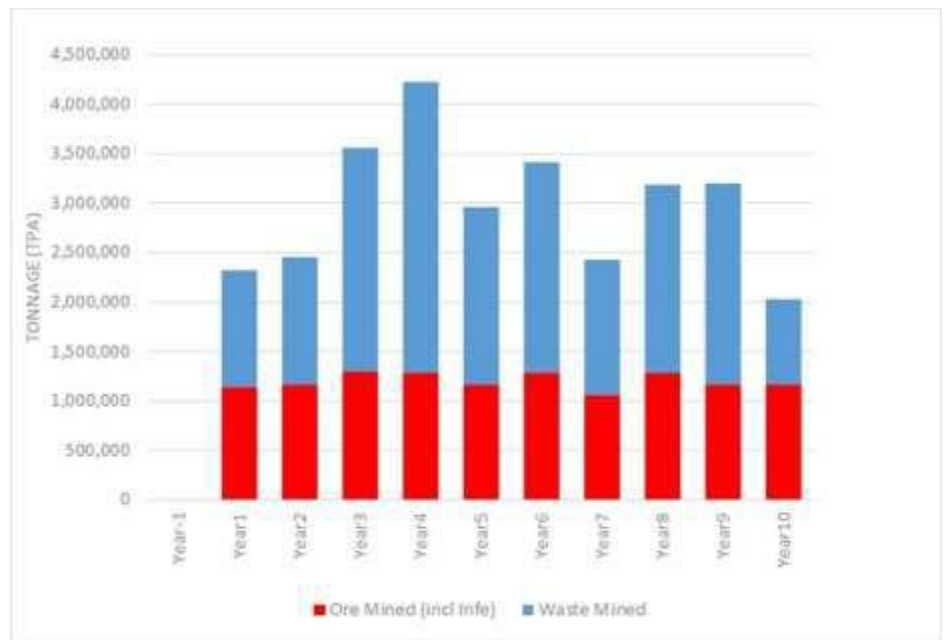


Figure 4.7: Mining by material type

The mining schedule includes over 90% Proven and Probably Reserves in the first 10 years of planned operation.

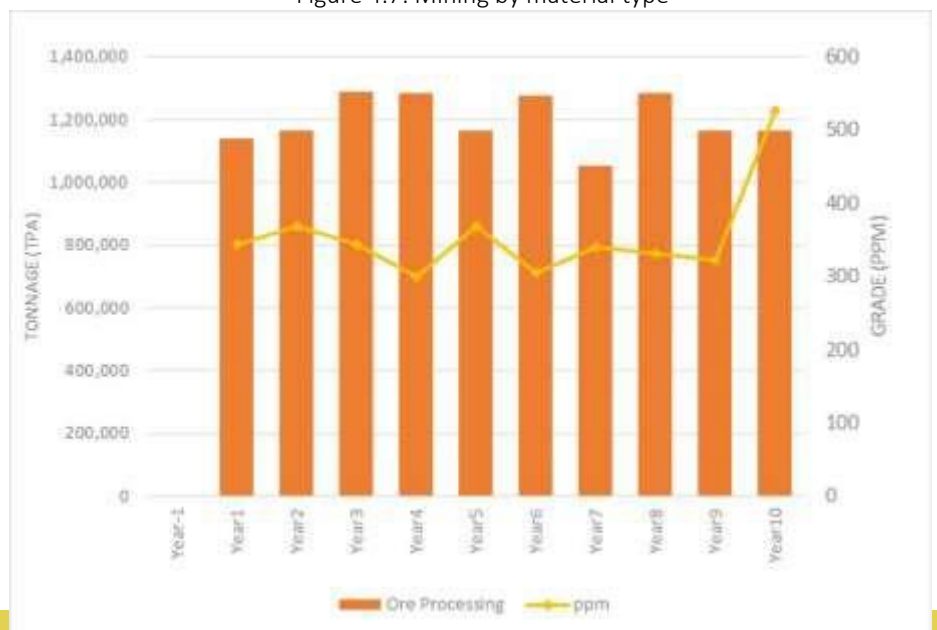


Figure 4.8: Ore processing plan by tonnage and grade



UPSIDE SCENARIO

The Sadi deposit was included in the study to increase the project life to 15 years. This deposit is an Inferred Resource. The Sadi deposit was optimised, designed and scheduled, in the same manner as the other deposits in the study.

These figures show that the project can produce at a sustainable level of around 0.9 Mlb U₃O₈/yr for 15 years without significant fluctuations in the require mining rate, assuming the Inferred Resource is as modelled.

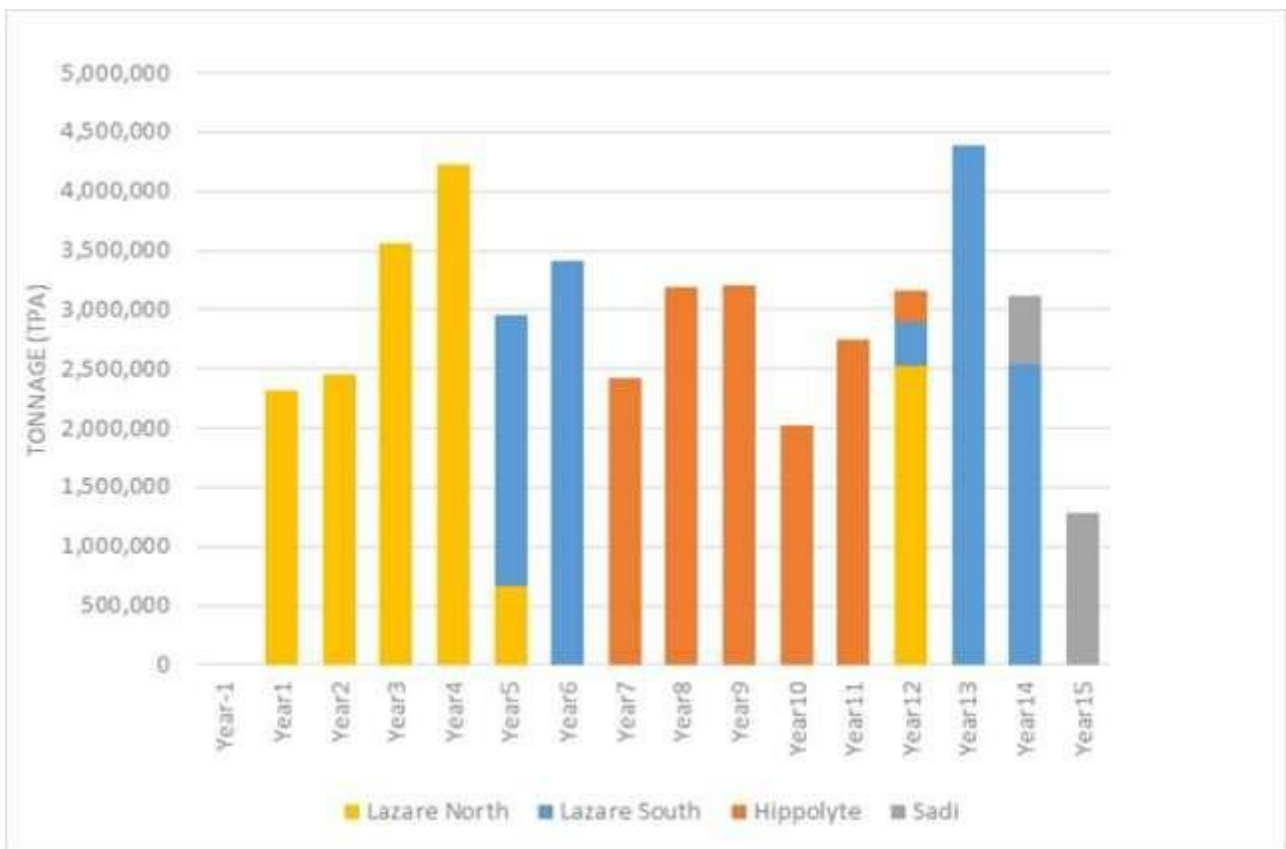


Figure 4.9: Upside scenario ore mined by deposit

CONTRACT MINING

Aura shall adopt a contract mining model for the initial operation. There is considerable mining expertise within Mauritania, Senegal and Ghana, and contract mining is expected to be the most cost-effective option for the operation. It reduces the initial capital cost, and will bring an experienced mining team to bear on the start-up period of the operation.

The contractor will be responsible for the provision, operation and maintenance of the mining fleet. The fleet is required to mine the ore and associated waste, then deliver the ore directly into the run of mine (ROM) apron feeder located approximately one kilometre from the open pit crest. Given that the front end of the plant shall be easily transportable modular units, trucking distances will be minimised through the close placement of this modular plant.

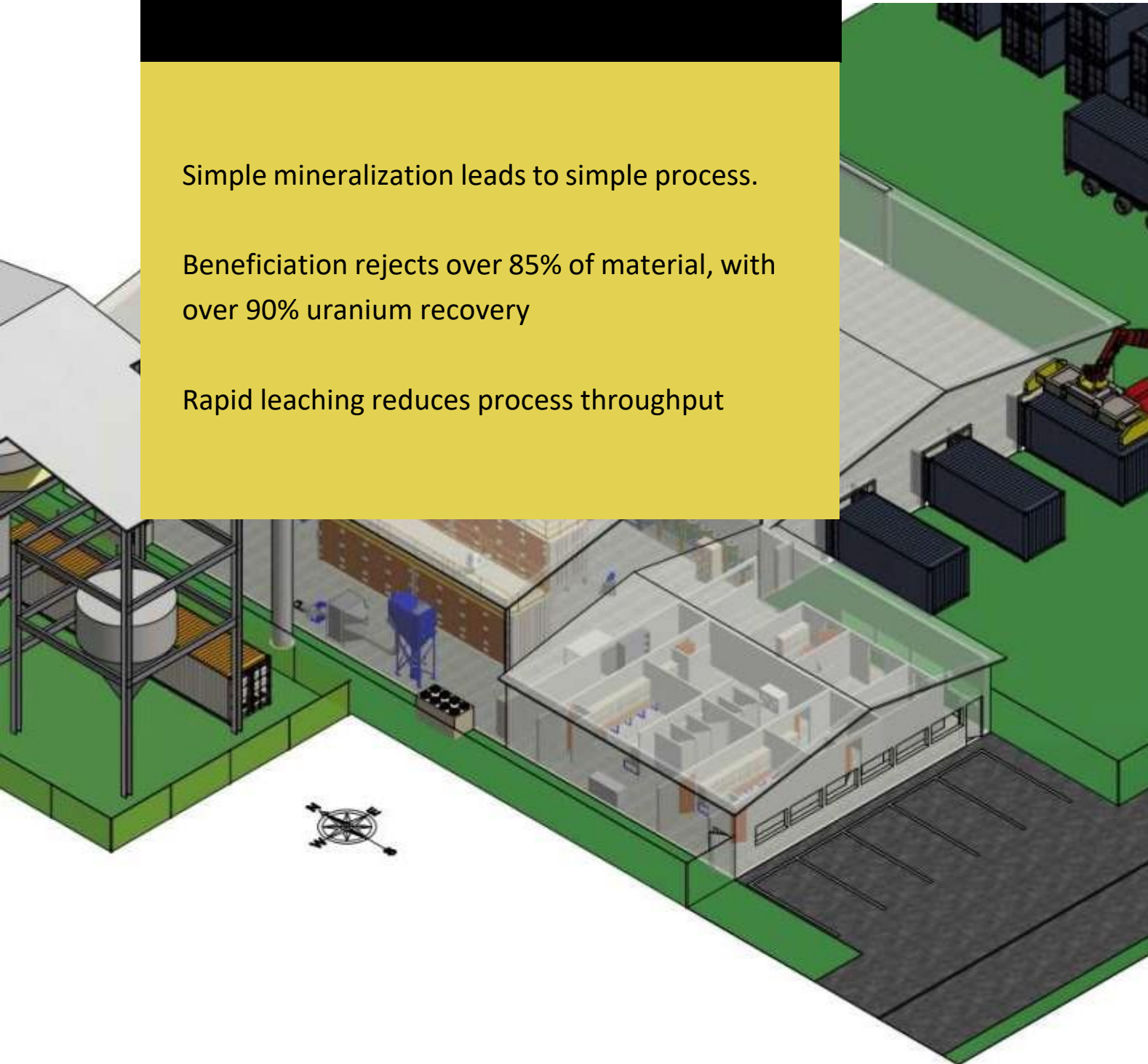
Aura will be responsible for providing the heavy vehicle workshop at the permanent process plant, some 6 km away from the mine. It will contain lifting facilities and spares storage.

PROCESS FACILITIES

Simple mineralization leads to simple process.

Beneficiation rejects over 85% of material, with over 90% uranium recovery

Rapid leaching reduces process throughput



The Tiris Project has very simple uranium mineralisation that is well suited to a conventional



The uranium is hosted with ultra-fine grained carnotite ($K_2(UO_2)_2(VO_4)_2 \cdot 3H_2O$) 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 (UO_4) product. 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 UO_4 , UO_3 , UO_2 or U_3O_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.

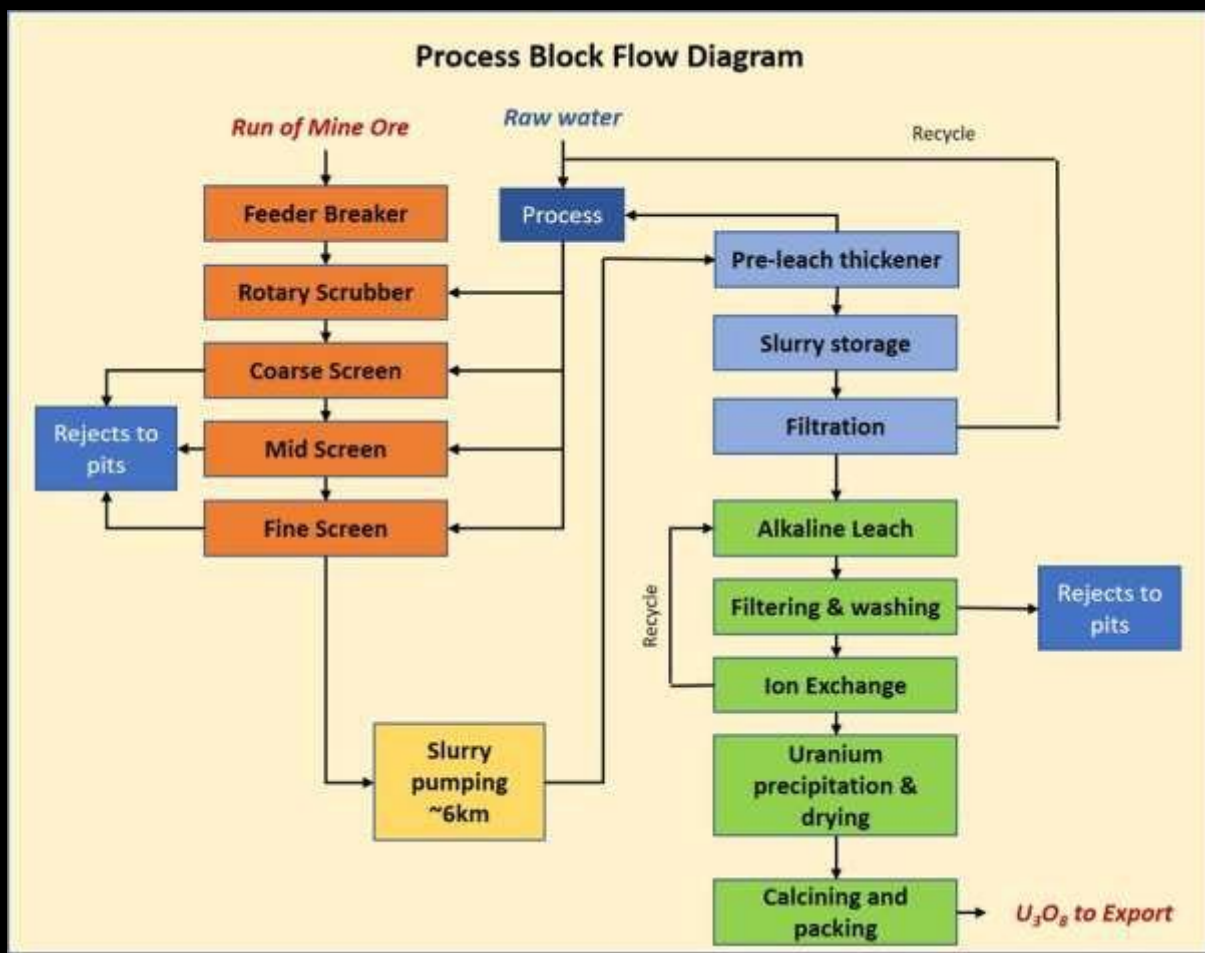


Figure 5.1: Process block flow diagram

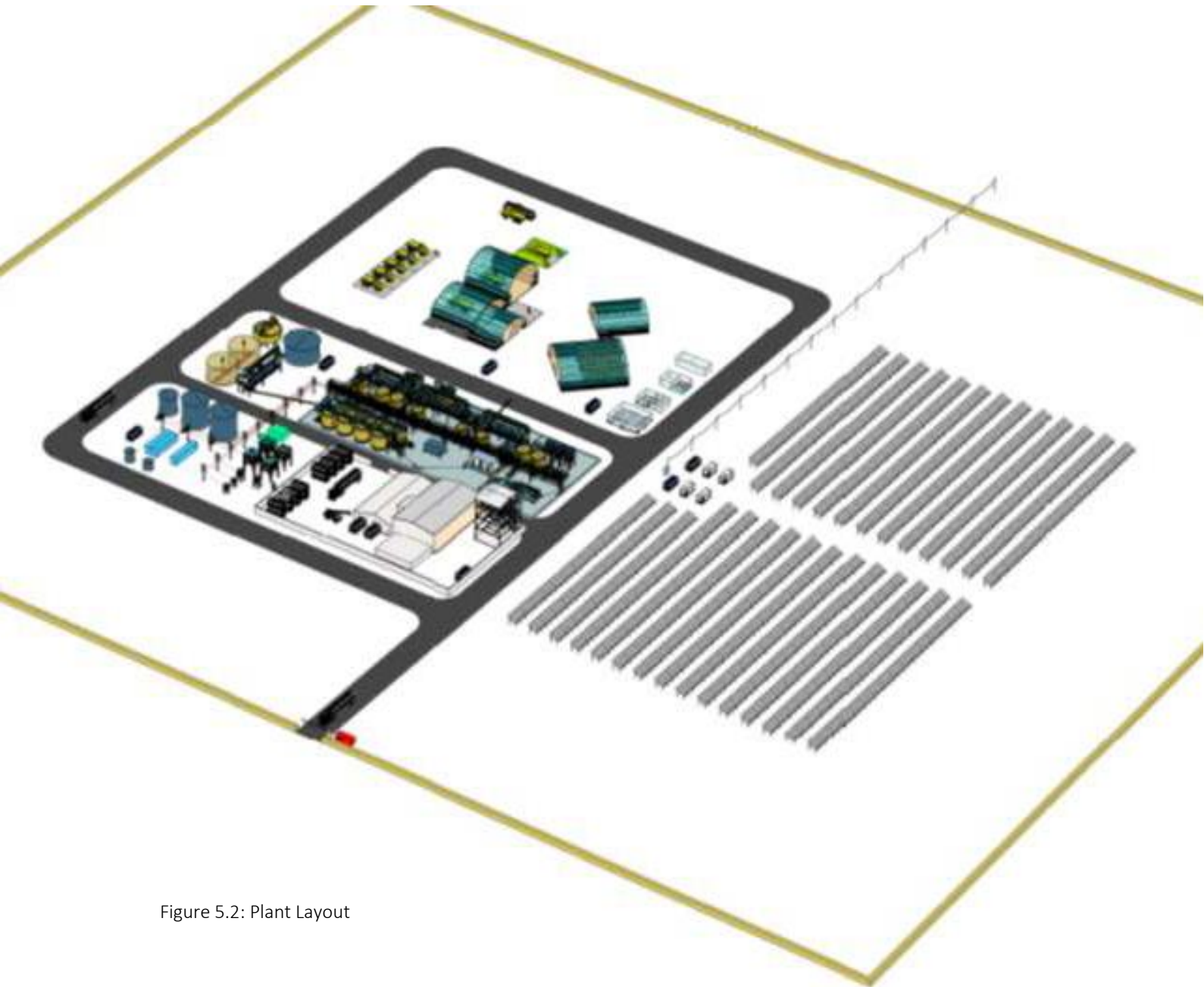


Figure 5.2: Plant Layout

BENEFICIATION CIRCUIT

The Tiris Eastern resources are spread over a distance of 64 km east-west and 36 km north-south, so the transport of ore is a significant consideration. Refer to Fig 5.3 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 Fig 5.3 for process plant location at Lazare centroid.

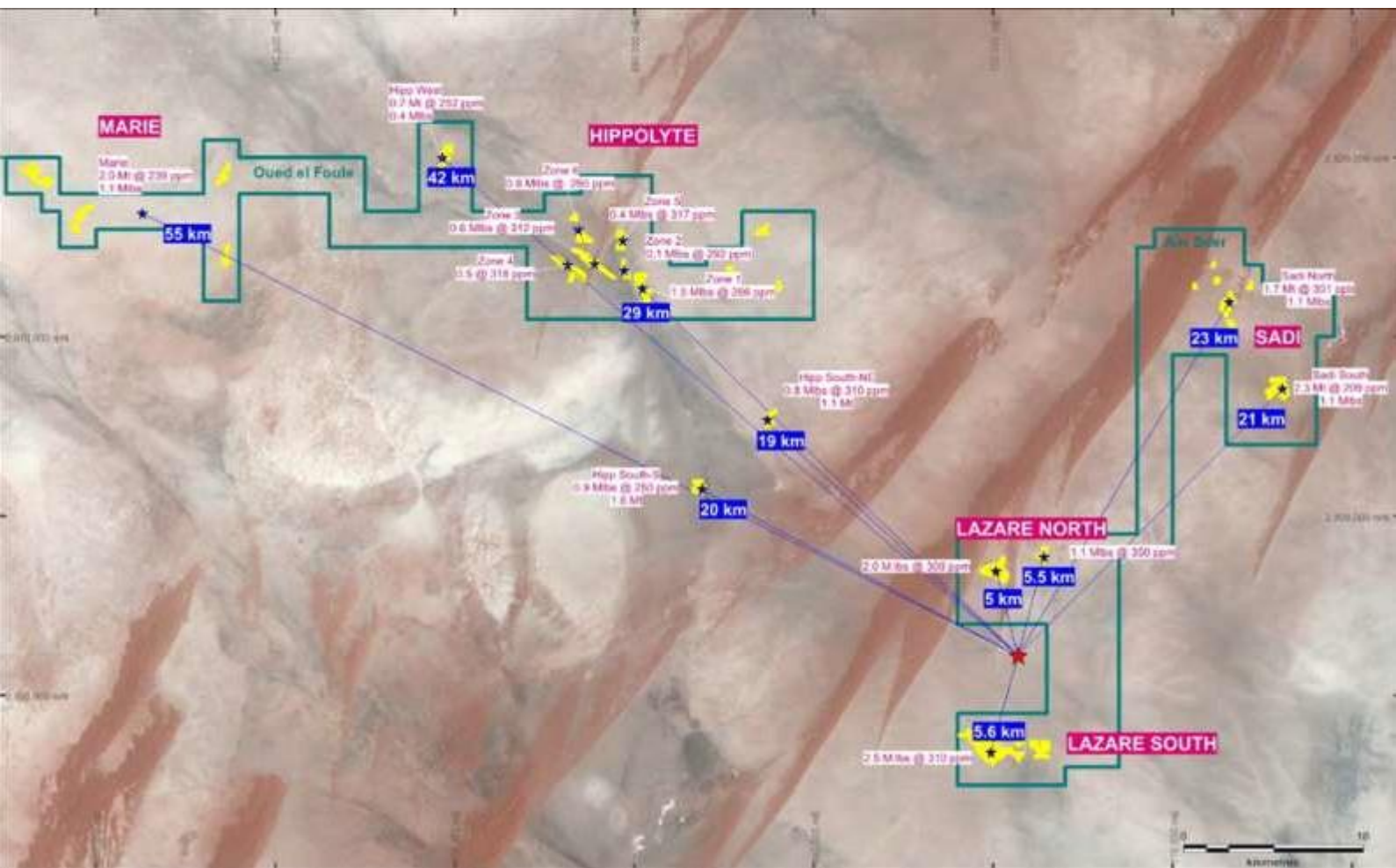


Figure 5.3: Resource distances to Lazare processing plant

The beneficiation plant and the hydrometallurgical process plant are in separate locations connected by three 6 km long pipelines, used to transfer slurry, liquid recycling and raw water

The mine schedule focuses on mining of the three Lazare resources over the first 6 years. In this period, the transportable modular front-end plant will have to be moved twice. 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 micron.
- 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

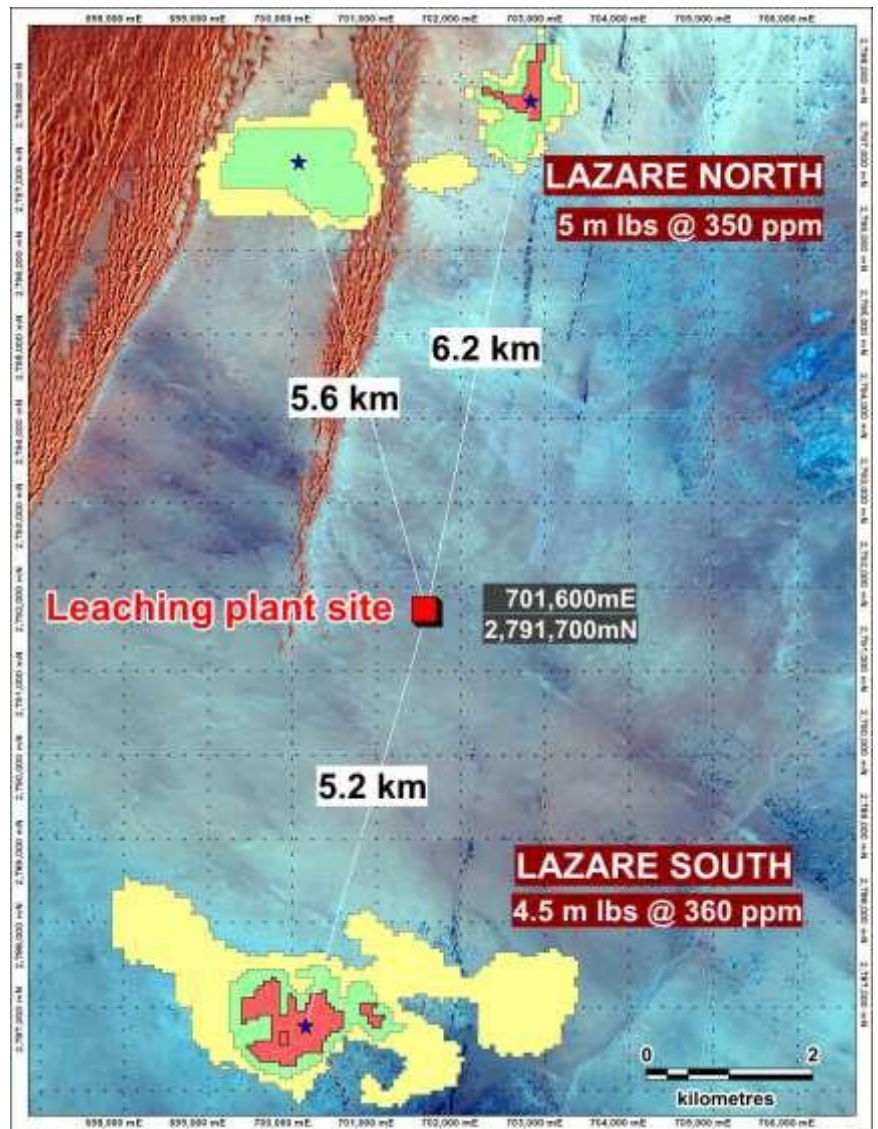


Figure 5.4: Optimized (Opex/Capex) site location for Lazare Resources

PROCESS PLANT

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 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 650m² filter press feeding a cake transfer conveyer,
- Six agitated leach tanks 6.1 m diameter, 6.4 m high,

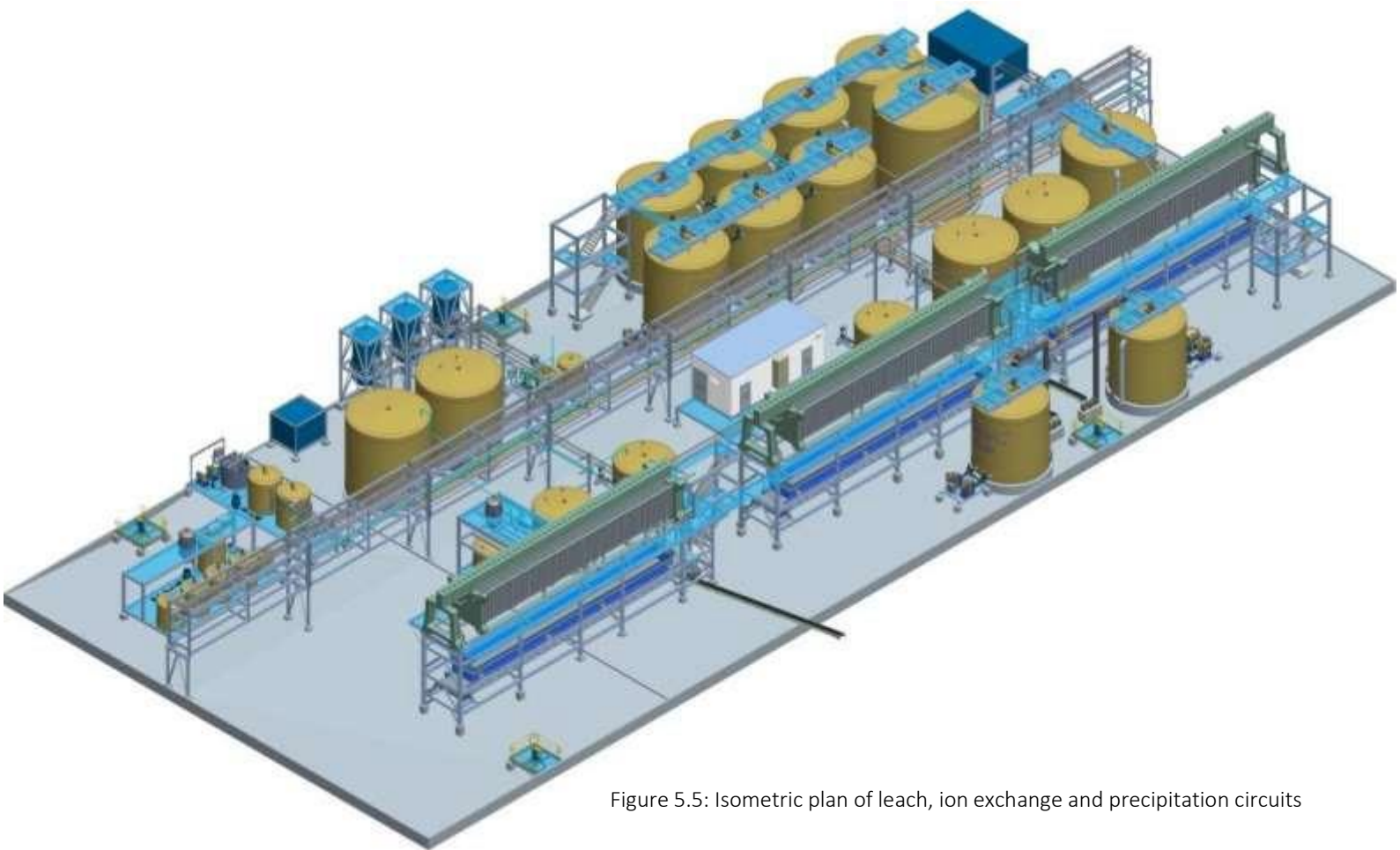


Figure 5.5: Isometric plan of leach, ion exchange and precipitation circuits

- 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,
- Product Precipitation plant including fluid bed crystaller, 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 located in an enclosed and sealed area of the Drum and Packaging (D&P) building, to prevent any fugitive dust escaping from the process plant area. The Drum Packing Module will be located in the clean side of the D&P building.



Figure 5.6: Isometric plan of UOC drying and drum packaging plant

TAILINGS



The permanent process plant produces a 150,000m³/year tailings stream from the leach pressure filtration module at 37% 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 a tailings dam some 1,100m north east of the plant. The tailings dam would hold 75,000m³ 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 (680,000m³/year) discharged from the 3-stage screening unit. This reject material will be predominantly between 2mm and 150 micron 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.

WATER SUPPLY

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 m³, (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.

Water drilling on target structures has been successful in discovering water, with one of the bores producing 15,000 litres per hour

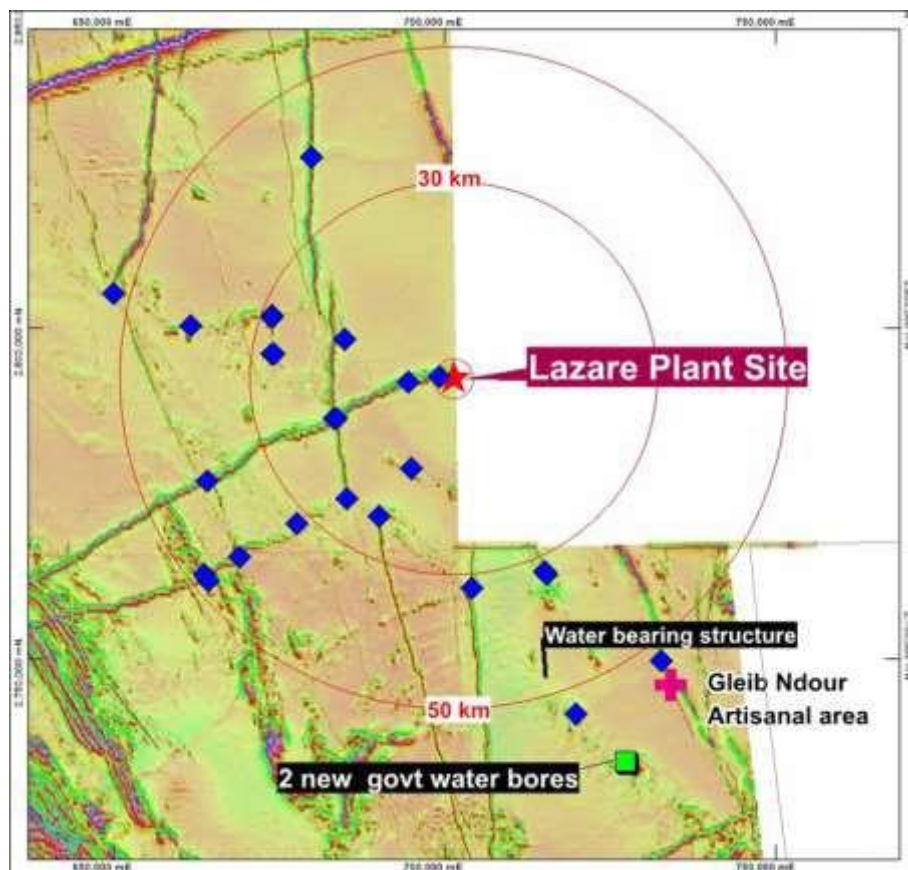


Figure 5.6: Geophysical targets for location of water in Oued el Foule Depression

Of 4 water sourcing options 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 has undertaken a significant program of water study and review which identified a number of major structures likely to host water and included a program of ground geophysics over 24 structural targets within 50 km of the proposed plant. 15 of the most promising targets have been selected for drilling and testing is underway.

On one of these structures identified by Aura, drilling successfully located water in 2 bores. Of 4 holes drilled in the area 2 successfully located good volumes of water, with one producing 15,000 litres per hour. The 50% strike rate in drilling bores 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 for the relatively low water requirement of the Tiris Project.

The water testing and development program will continue for a period of time beyond the completion of the DFS and during construction.



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.

PROCESS TEST WORK

18 metallurgical and mineralogical test work programs completed

Confirms simple metallurgy

Yellowcake product within ASTM standard specifications



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, tyuyamunitite $Ca(UO_2)_2(VO_4)_{2.5} \cdot 8H_2O$ in varying proportions.

Carnotite is a radioactive, bright-yellow, soft and earthy vanadium mineral that is an important source of uranium. A hydrated potassium uranyl 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 tyuyamunitite (its calcium analogue) in sandstone, either disseminated or locally as small pure masses, particularly around fossil wood.

The Carnotite grain size for the Tiris material is in the range of 5-15 μ m 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 6 years of mine production, for the Lazare North and Lazare South Resources. The geometallurgical modelling covered 69.5% of defined Ore Reserves for the Tiris Project.

The primary differentiating factors for the Ore Domains were:

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

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 6.1.

The response to ore beneficiation allows rejection of the majority 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.

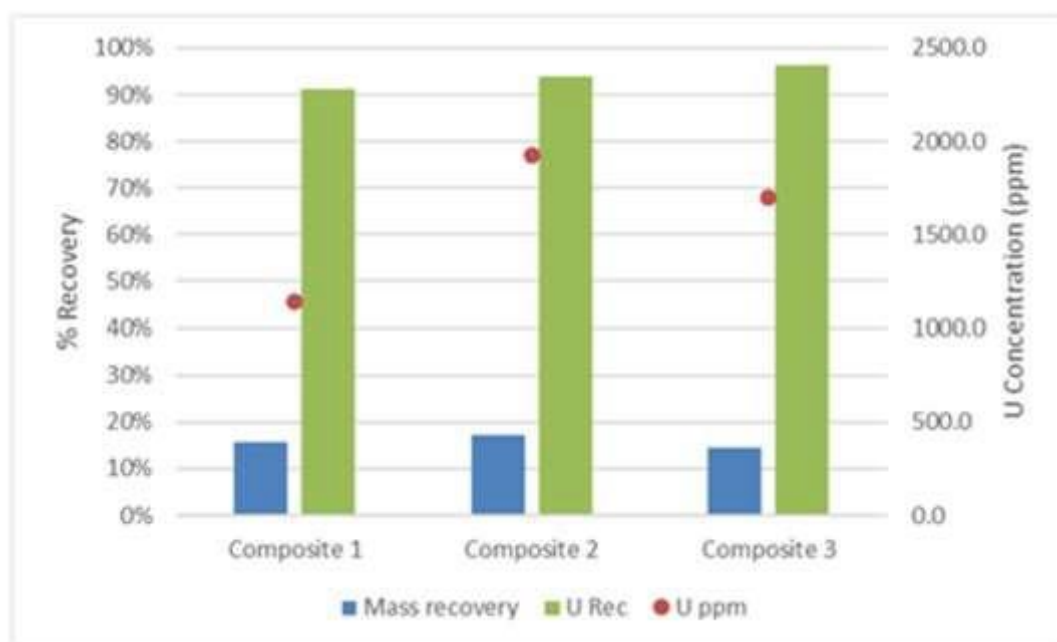


Figure 6.1: Mass recovery, uranium recovery and product uranium grade for screen cut size of 150µm. All composites.

Figure 6.2: Scrubbed vs unscrubbed samples from Hippolyte resource



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 6.3 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.

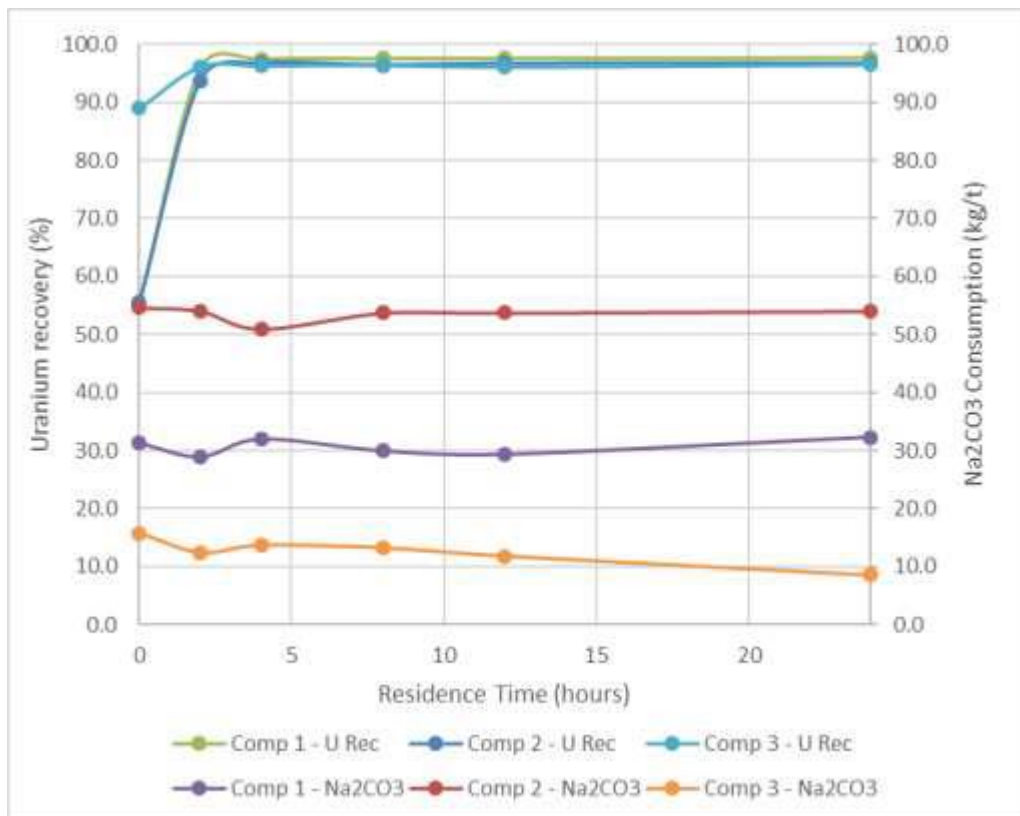


Figure 6.3: Mass recovery, uranium recovery and product uranium grade for screen cut size of 150 μ m. All composites.

Ultra-fine grained carnotite leads to rapid leaching.
Leach residence time of only 12 hours required

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.



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 m^3/h of PLS.

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°C , prior to UO_4 precipitation at pH 3-4.



URANIUM OXIDE PRODUCT

UOC Product within ASTM Standard specifications generated from test work

Table 6.1 provides a summary of the composition of the final UOC product from test work. It should be noted that the tolerances accepted by commercial converters for certain impurities listed in ASTM C967-13 (including, zirconium and boron) are generally less stringent than in the ASTM standard.

Table 6.1: Tiris UOC Product specification.

	UO ₄ wt% U Basis	Limit Without Penalty	Limit Without Rejection
As	<0.02	0.05	0.10
B	<0.02	0.01	0.10
Ca	0.03	0.05	1.00
K	0.06	0.20	3.00
Mg	<0.02	0.02	0.50
Mo	<0.02	0.10	0.30
Na	<0.02	0.50	7.50
P	0.05	0.10	0.70
S	0.11	1.00	4.00
Si	<0.12	1.07	5.35
Ti	<0.02	0.01	0.05
V	0.17	0.06	0.30
Zr	0.03	0.01	0.10
Cl	0.07	0.05	0.10
F	0.07	0.01	0.10

INFRASTRUCTURE

Tiris Project located 680km from Zouerat, a mining centre.

Workforce will be bus in and out of Zouerat.

Installation of BOO hybrid diesel-solar power generation capacity.



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 Zouerat.
- 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.

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 north east of the process plant, due to the low building weights involved.



ACCESS ROAD



Figure 7.1: Proposed site access route from Nouakchott via Zouerate

The route utilises trucking on the existing 767 km N1 sealed highway from Nouakchott port to Zouerate. From Zouerate, 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 Zouerate 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.

ACCOMMODATION CAMP

The camp will consist of accommodation for 146 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.

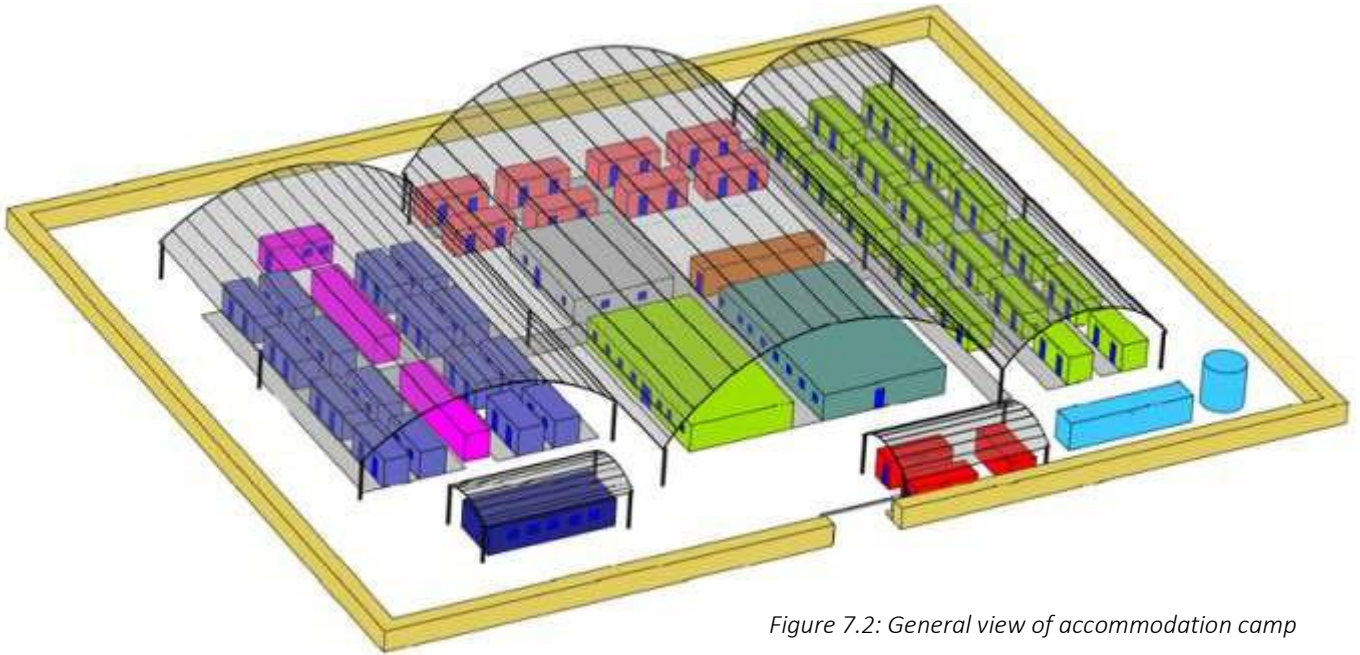


Figure 7.2: General view of accommodation camp

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.

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, UO₄ precipitation and packing, workshops and administration facilities.
- The permanently located construction/operations camp 3.3 km NE of the process plant, supporting 146 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 south west of the process plant.

The following table summarizes the total power peak demand per area and the related power generation required (Table 7.1)

Table 7.1: Summary of total power peak demand by area

Area	Peak Demand (kW)	DG installed power (kW)	Solar installed power (kW)
Front-end	429	2 x 400	-
Permanent Plant	2,718	4 x 1,200	2,160
Camp	650	From plant	From plant
Remote water supply	75	1 x 48 4x 24	-
Total	3,872	5,744	2,160

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 economic 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.

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.



ZOUERAT OFFICES, ADMINISTRATION AND GUEST HOUSE



Aura Energy will need to set up an administration office based in the key location of Zouerat. Zouerat 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 Zouerat 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 Zouerat from Nouakchott, and travelling on to site.

ENVIRONMENT

ESIA fully approved by Mauritanian government.

INTRODUCTION

A comprehensive Environmental and Social Impact Assessment (ESIA) was completed in 2017 by Earth Systems, an internationally recognized 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

PHYSICAL SETTING

CLIMATE AND METEOROLOGY

The project is located 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 northeasterly trade wind that occurs during dry conditions and can result in extensive and dense clouds of dust that can form dust or sandstorms.



NATURALLY OCCURRING RADIOACTIVE MATERIAL

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.

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.



SOCIAL SETTING

The project is located 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 Zouerate (pop c. 45,000), 620 km westsouthwest. 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.

LAND AND WATER USE

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

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 located in the broader area surrounding the project.



RISK ASSESSMENT

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 concentrate (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.

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.

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.

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.

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.

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.

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 removal of any identified surface contamination. The post-closure impact of the project on water quality is expected to be NEGLIGIBLE.

Air Quality

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.

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.

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.

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 Zouerate 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 directly and indirectly improve local health facilities and services 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.

PROJECT IMPLEMENTATION PLAN

Overall schedule is 21 months to design, construct and commission the Tiris Project.

No major long lead equipment items required.



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.

PROJECT SCHEDULE

The Tiris Project schedule is expected to have the following time scale:-

- Issue of the Feasibility Study at start of month 1.
- Three months of fund raising completed by the end of month 3,
- Kick-off of the full project from the board approval date at the start of month 4.
- Detailed engineering design commencing immediately taking 9.5 months and being largely complete by mid-month 13. .
- Site and camp establishment to commence in month 14
- Allowing the main construction contracting to commence in month 9 and be completed in 12.5 months in mid-month 22..
- Operations start up after completion of commissioning, in month 24.

This gives an overall project duration of 21 months from kick off.

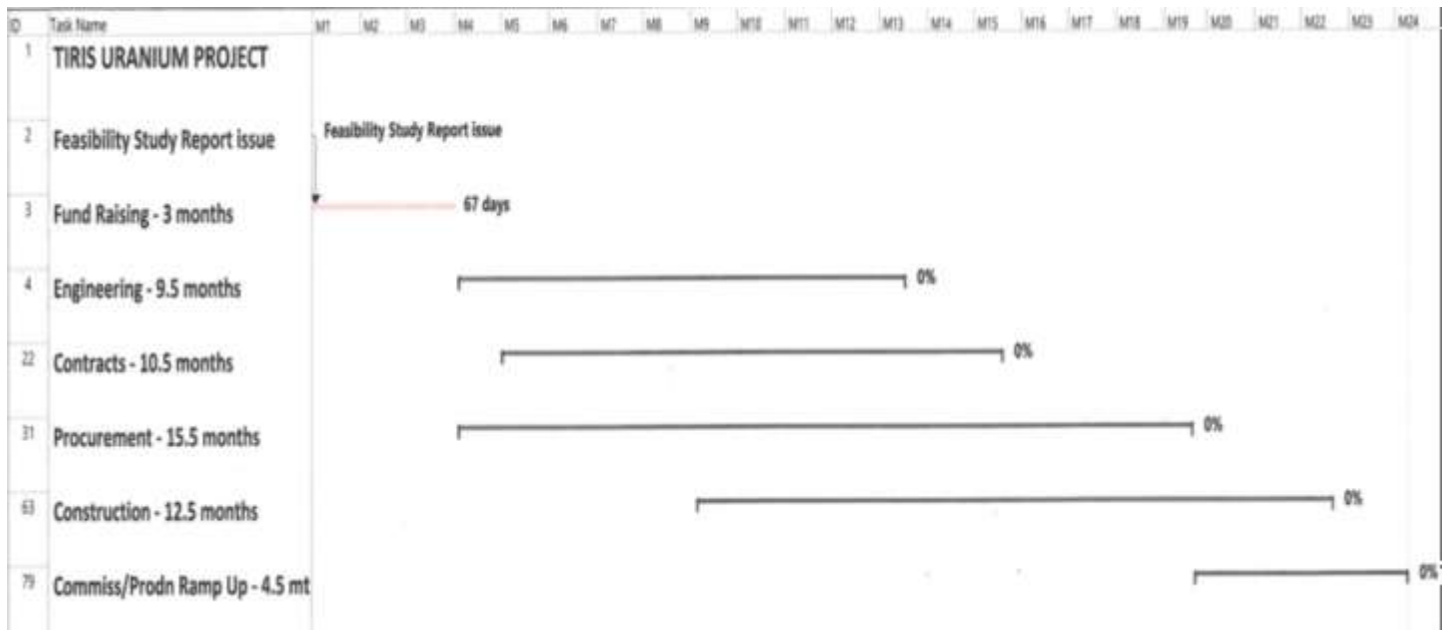
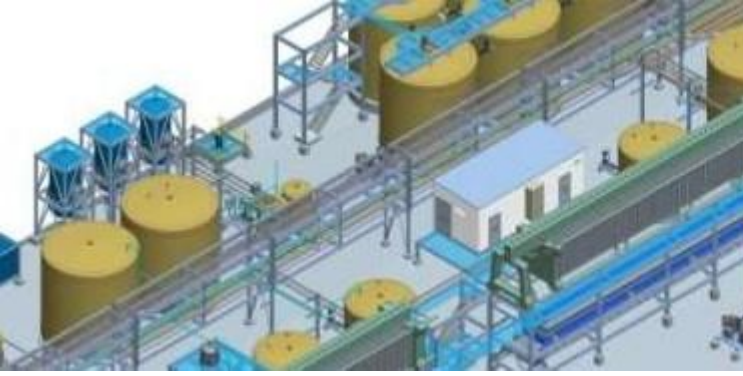


Figure 9.1: Project schedule

CAPITAL COST ESTIMATE

Total capital cost of US\$74.8M, inclusive of contingency.





CAPITAL COST SUMMARY

Aura’s Engineering company Mincore have provided a capital cost (CapEx) estimate for the Tiris Project. 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.

Table 10.1 and Table 10.2 show the estimated capital cost summary by main area.

Table 10.1: Capital cost summary

Description	Cost (U\$M)	Ratio (%)
Mining (contract mining assumed)	0.00	0
Process Plant	39.1	50
Infrastructure	17.6	24
EPCM	4.9	7
Owner's cost	9.9	13
Contingency	4.8	6
Total Capital Cost	74.8	100

85% of Capital estimate from supplier quotes

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 \$74.8M 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.

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 10.3. 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.

Table 10.3: Currency exchange rates applied to supplying countries

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

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.

Table 10.4: Contingency summary

Pricing Basis (A\$)	Contingency applied	Contingency US\$
Budget pricing	10%	3,311,403
Technology provider (Simulus)	12%	1,470,588
Estimated	10%	630,015
Historical	15%	248,684
Allowance	0%	0
TOTAL		5,660,690

COMPARISON TO 2019 CAPITAL ESTIMATE

In 2019 Aura released a Definitive Feasibility Study on the Tiris Uranium Project . In general the results of the DFS remain unchanged and the current update reflects the price inflation between 2019 and 2021. In this time significant global economic upheaval due to the COVID-19 pandemic has occurred and Aura determined that it was relevant to fully understand the potential impact of these changed conditions on project implementation

The comparison of the 2021 DFS Capital cost estimate with the 2019 DFS showed an increase of 19% on a USD basis . This is a good result given it remains within both the estimate accuracy levels and base sensitivity levels used in project evaluation.

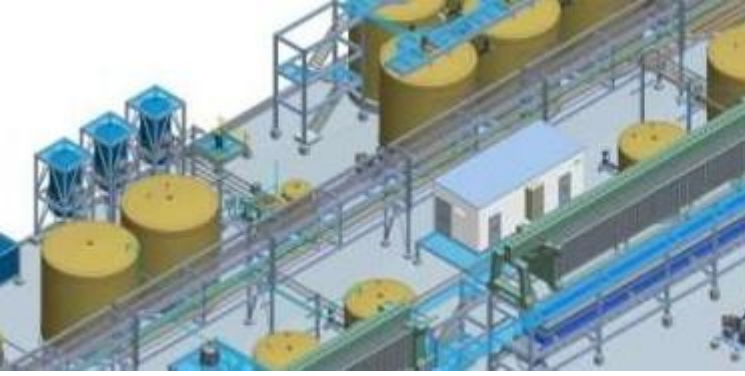
Table 10.5: Comparison of 2019 and 2021 DFS CAPEX estimate

Description	DFS 2019	DFS update 2021	Variation
	US\$/M	US\$/M	%
Mining	0.00	0.00	0.00
Process Plant	26.3	39.1	39%
Infrastructure	18.9	17.6	-7%
EPCM	4.45	4.9	10%
Owner's cost	8.2	9.9	21%
Contingency	4.30	4.8	11%
Total Capital Cost	62.94	74.8	19%

OPERATING COST ESTIMATE

LOM cash operating cost of US\$25.43/lb U₃O₈.

All In Sustaining Cost (AISC) of US\$29.81/lb U₃O₈, including royalties, insurances, LOM sustaining capital and product transport.



ESTIMATE BASIS

The operating cost estimate for the Tiris Project was developed by Aura Energy with assistance of MinCore Engineers, Simulus 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 0.8Mlbs U_3O_8 per annum, including:

- Contract 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 considered to have an estimate accuracy of +15% -10%.



OPERATING COST SUMMARY

The operating cost estimate has been summarised in table 11.1 and figure 11.1. The total C1 cash cost will be US\$25.43/lb U₃O₈ and All In Sustaining Cost (AISC), inclusive of Royalties, LOM Sustaining Capital, Insurances and product transport will be US\$29.81. These costs have been estimated as an average of annualised expenditure.

Table 11.1: Operating cost summary

Category	Annual expenditure	US\$/lb U ₃ O ₈
Contract Mining	\$ 5,789,051	\$ 7.16
Labour	\$ 2,975,253	\$ 3.68
Power	\$ 3,696,040	\$ 4.57
Reagents	\$ 3,196,216	\$ 3.95
Maintenance	\$ 1,841,887	\$ 2.28
G&A	\$ 3,076,507	\$ 3.80
Total cash cost (C1)	\$ 20,574,953	\$ 25.43
Product transport and marketing	\$ 367,344	\$ 0.45
Insurances	\$ 373,000	\$ 0.46
Sustaining capital	\$ 673,828	\$ 0.83
Royalties	\$ 1,934,686	\$ 2.39
All In Sustaining Cost (AISC)	\$ 23,923,811	\$ 29.81

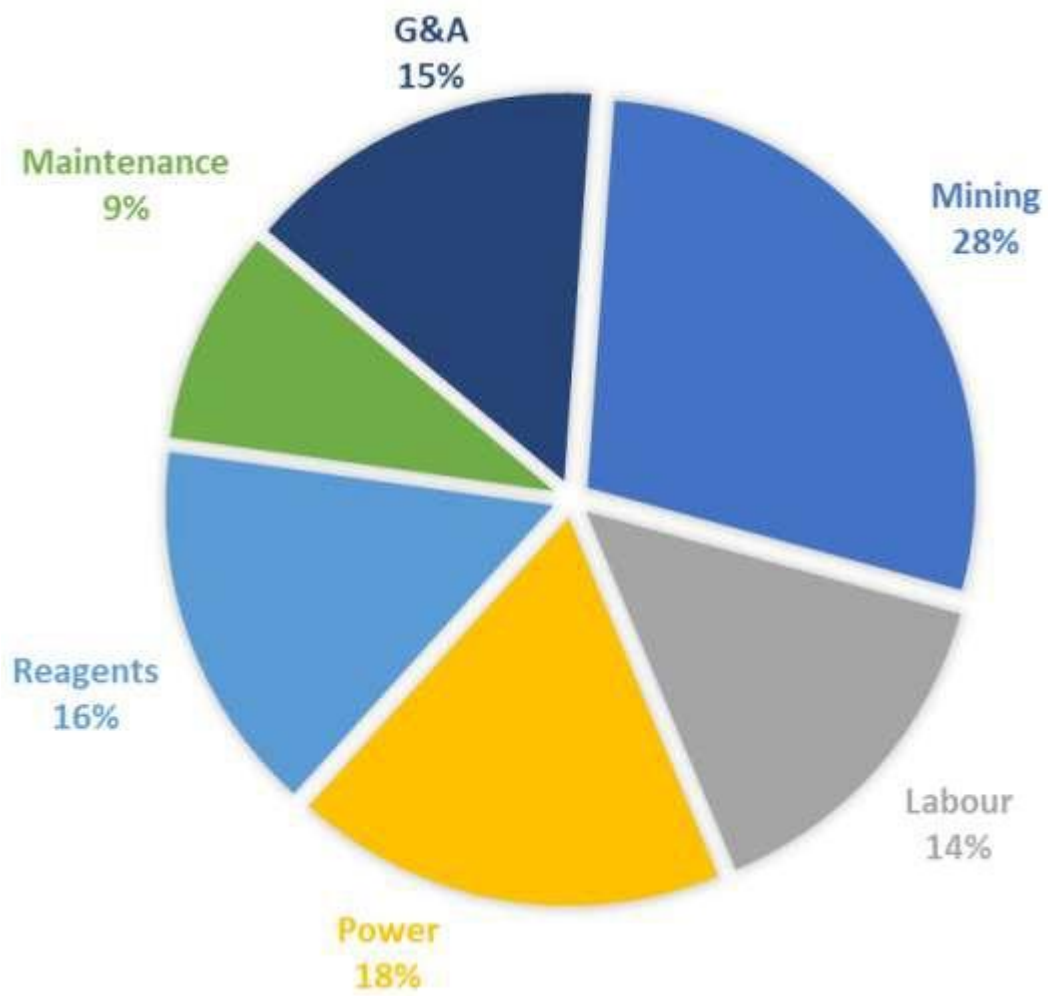


Figure 11.1: Operating cost distribution

MINING

Mining for the Tiris operation will be undertaken under a contract agreement over a 5 year period. Mining rates were based on submissions by three independent companies in Mauritania, Senegal and Ghana, and a first principles contract mining estimate performed by MiningPlus.

Table 11.2: Mining cost summary

Description	Unit	Rate ⁽²⁾
Waste Mining	\$/bcm	2.10
Ore (0-1 km)	\$/bcm	2.10
Ore (1-2 km)	\$/bcm	3.20
Ore (2-3 km)	\$/bcm	3.63
Reject Return	\$/m ³	1.05

LABOUR

Table 11.3: Labour summary

Area	# on payroll
G&A - Zouerat	5
G&A - Site	38
Mining - owners	6
Process - general	18
2010/15	6
2020/30	3
2040/50	3
2060	3
Maintenance	44
FIFO Costs	
Total	126

The labour rates are annualised and inclusive of local on-costs, including:

- Social security (14%)
- Medical Insurance (5%)
- Training allowance (0.6%)
- Overtime penalty rates

An organisation structure and manning structure has been developed for the Tiris Feasibility Study to meet planned production targets. The proposed mining, operations and administrative employee numbers are presented in table 11.3.

An additional 91 personnel are included for the mining contractor. The total Tiris Project workforce will be 213 personnel.

Personnel will reside in Zouerat, with travel to/from the operation being via bus. Employees will work a 3 week on, 10 day off roster and leave entitlements have been based on the Mauritanian labour code.

The labour cost estimate includes allowance for local and international travel for expatriate employees.

FUEL

Quotations were received from fuel distributors to supply diesel to the Tiris Operation inclusive of international and local freight, insurance and handling costs, and margins.

Quotations were received from two suppliers and a diesel price of US\$0.86 per litre has been applied to the operating cost estimate.

POWER

Power will be provided to the Tiris Operation via a main power station located adjacent to the Process Plant, plus several diesel generators located at the Beneficiation Plant and Remote Bore Field. The main power plant will include a hybrid of diesel and solar generation. The power generation will be supplied under a build, own, operate (BOO) contract over a 5 year term.

The levelized cost of energy (LCOE) unit cost for the Tiris Feasibility Study has been estimated at US\$0.22 per kWh, based on the diesel fuel price of US\$0.86 per litre.

MAINTENANCE

Maintenance costs include the cost for maintenance consumables and spare parts necessary for day-to-day operation of the process plant.

Maintenance costs are also included for maintenance of the site access road, diesel generator maintenance, light vehicle maintenance, and solar field maintenance. Maintenance facilities will be provided for the contract mining fleet, but maintenance costs are included in the mining contract.

SUSTAINING CAPITAL

Sustaining capital is the ongoing cost required to sustain mobile and fixed assets. For the Tiris Operation it includes costs related to:

- Major maintenance of plant and infrastructure
- Transportation of Beneficiation Circuit to new mining areas as defined by the LOM mine schedule.

The total LOM sustaining capital has been estimated at US\$10.1M, equivalent to US\$0.83 /lb U₃O₈.

REAGENTS AND CONSUMABLES

Reagents and consumables include the following cost elements:

- Rotary scrubber (e.g. tyres)
- Screen consumables
- All reagents used in the process;
- Fuel for mobile equipment assigned to the process and maintenance groups;
- Lubricants, operating tools and equipment, general and operator supplies.

Reagent addition rates were derived from laboratory test work and steady state simulation of the process. Reagent and steam consumption rates have been calculated on a per pound of uranium oxide or per tonne of leach feed basis. This was derived from the steady state mass and energy balance developed using the Andritz IDEAS software.

GENERAL AND ADMINISTRATION

General and administration expenses have been categorised into the following areas:

- Safety and training
- Environmental
- External technical services
- Communications
- Camp accommodation and messing
- Laboratory
- Medical clinic
- Logistics and freight
- General administration



OPERATING COST SENSITIVITY

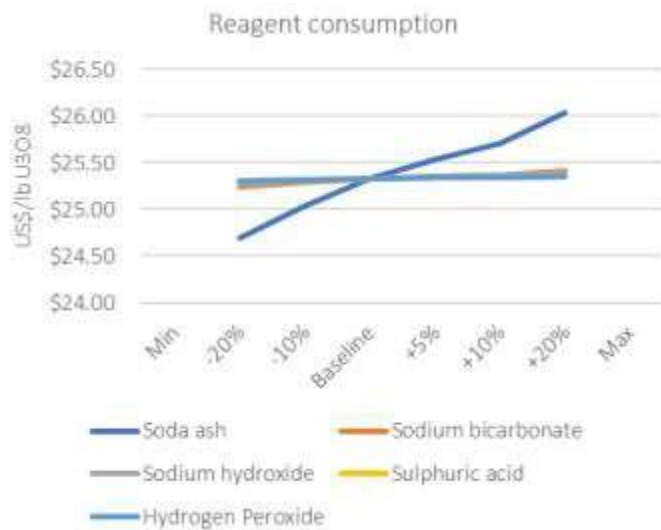


Figure 11.2: Sensitivity of operating cost to variations in reagent consumption

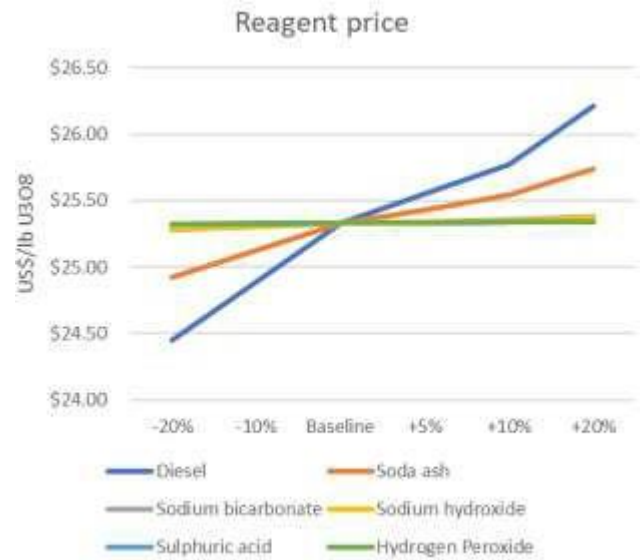


Figure 11.3: Sensitivity of operating cost to variations in reagent price

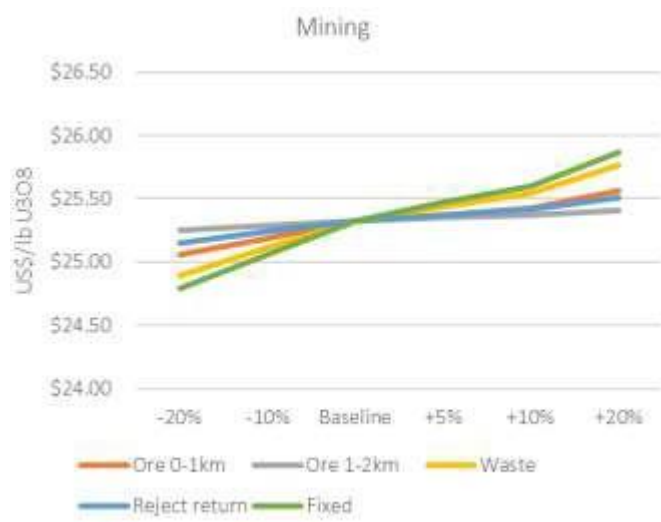


Figure 11.4: Sensitivity of operating cost to variations in Mining rate

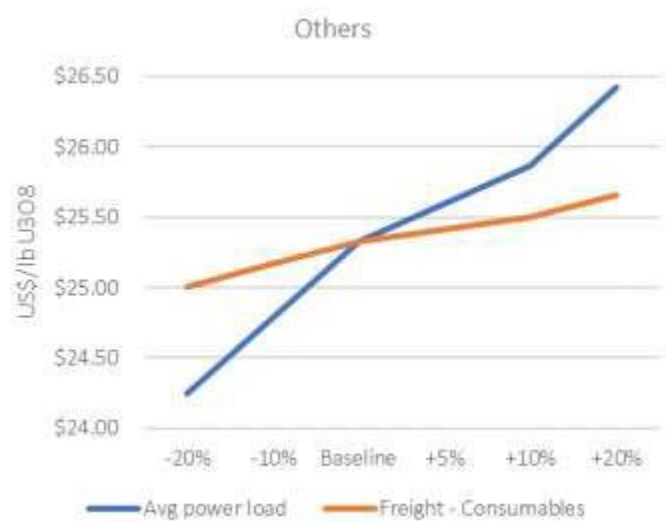


Figure 11.5: Sensitivity of operating cost to other variations

SCOPING STUDY COMPARISON

Comparison of estimated OPEX in Table 11.4 demonstrated an overall reduction in operating costs between the Scoping Study and DFS of 14%. These reductions were predominantly achieved in optimisation of reagent consumption.

In August 2017 Aura announced a reduction in operating costs. This included process optimisation, without updating the other OPEX inputs. As part of the DFS study additional detail was added to the mining plan and the decision was made to utilise contract mining, rather than an owner operated fleet. This transferred expenditure from Capital to Operating costs and accounts for a significant proportion of the cost difference.

Table 11.4: Comparison of Scoping Study and DFS OPEX estimate

Category	Scoping Study 2014	Scoping Study 2017 update ¹	DFS 2019
	US\$/lb U ₃ O ₈	US\$/lb U ₃ O ₈	US\$/lb U ₃ O ₈
Mining	3.53	3.53	7.16
Processing	16.20	6.15	7.05
Services	4.12	4.12	5.19
G & A	5.60	5.60	6.04
TOTAL	29.46	19.40	25.43

¹ASX Announcement: "Tiris operating cost reduced by 35%" 30th August 2017. Included optimisation of processing costs only. All other costs remained unchanged from 2014 Scoping Study.

URANIUM MARKET

Long-Term Contracting market by utilities will be a key driver in sentiment for uranium and strongly impact the uranium price

With Section 232 now resolved a degree of uncertainty has been removed allowing market participants to re-engage with certainty in the uranium market.

URANIUM MARKET

The uranium market is somewhat different to other metal markets as almost all uranium is sold on long-term contracts between miners and utilities. These contracts are confidential and have very little visibility in the market. While only limited uranium is sold on the 'spot' market, the spot price is the only visible metric for uranium price, and has a significant influence on market sentiment.

The uranium spot price has experienced a sustained period of depressed levels, driven by reduced demand following the Fukushima incident in 2011.

NUCLEAR CAPACITY DEVELOPMENTS

Recent developments in Asia have lifted demand.

A number of new reactors in China have been connected to the China's national power grid. The Sanmen nuclear power plant was connected to the power system in September 2018. Unit No 4 of the Tianwan nuclear power plant was connected to the power system in October 2018, which lifted global nuclear power generation above 400 GWe for the first time. Haiyang Unit No 1 is also close to connection to the national power grid .

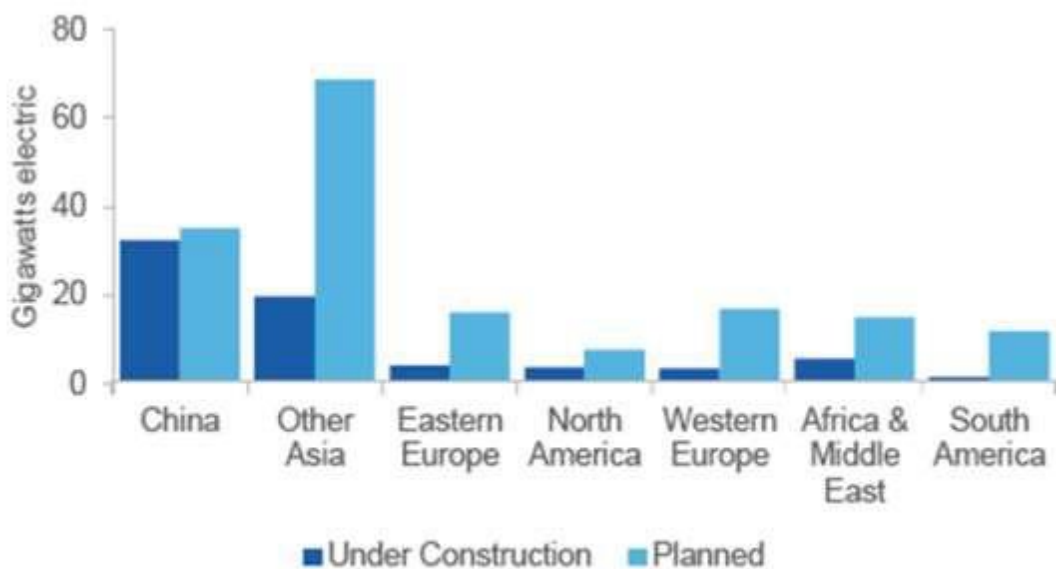
In Taiwan a referendum to phase out nuclear power by 2025 was defeated, with 59% of votes cast for the continuation of nuclear power generation. The nuclear power costs in Taiwan are one-third of the cost of wind power and one-fifth the cost of LNG.

The Japanese Nuclear Regulation Authority has approved the restart of Unit No 2 at the Tokai nuclear facility.

An injunction to restart Unit No 3 at Okata power plant was rejected in October 2018. Overall, nine nuclear reactors have been given approval to restart, and another 18 are in the process of completing the final stages of recommencement.

Russian energy group Rosenergoatom announced that both Unit No 1 at its Leningrad Phase II nuclear power plant, and Unit No 4 at the Rostov nuclear power plant entered commercial operations in December 2018. In the USA, both the Vogtle No 3 and No 4 reactor development recently cleared approval from its owners to continue construction.

World wide uranium consumption increased from 80,900 tonnes in 2017 to 84,300 tonnes in 2018, an increase in consumption of 4.2% year-on-year. The scale of construction across Asia is forecast to increase consumption by 10,000 tonnes by 2020.



Source: International Energy Agency (2018); World Nuclear Association (2018); Department of Industry, Innovation and Science (2018)

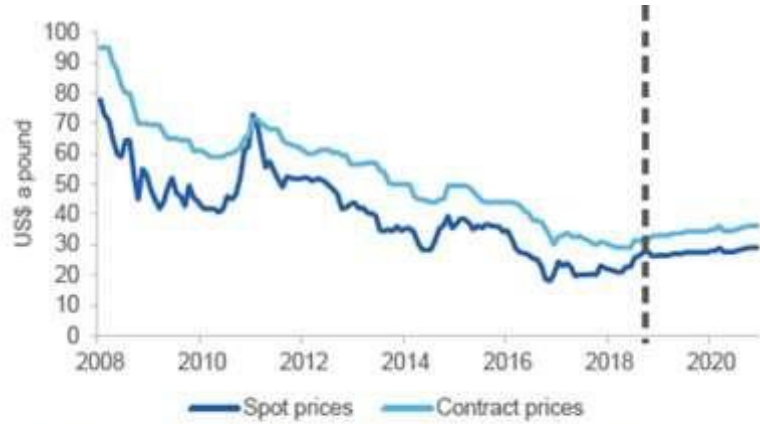
Figure 12.1: Nuclear plants operating and under construction

Large production cuts in 2018 reduced the growth in uranium inventories. Global supply fell from 69,000 tonnes in 2017 to 61,700 tonnes in 2018, a reduction of 10.6%.

MARKET BALANCE AND PRICE

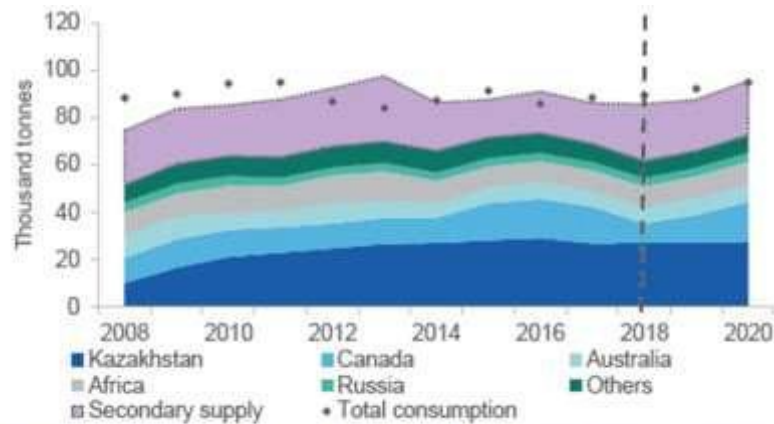
There are early signs of a sustained recovery in the uranium price with gains since September 2018.

Supply cuts from Canada and Kazakhstan have been the main drivers for the lift in spot prices. With production expected to continue at current levels, a number of commentators believe spot prices will hold in a tighter market. The Bureau of Resource and Energy Economics (BREE) maintain that inventory levels are likely to suppress price growth to some degree, but there is a shift towards prices spiking. The impact of falling mine commencements and lower exploration have not been quantified.



Source: Cameco Corporation (2018) Uranium Spot Price; Ux Consulting (2018) Uranium Market Outlook

Figure 12.2: Uranium spot price



Source: Ux Consulting (2018) Uranium Market Outlook; World Nuclear Association (2018)

Figure 12.3: U_3O_8 production

OFFTAKE AGREEMENT

On 25 January 2019, the Company announced that it had completed an offtake agreement with Curzon Uranium Trading Limited. Details of the offtake agreement are available in ASX announcement “Aura concludes offtake agreement”, 29th January 2019.

FINANCIAL ANALYSIS

- Total project After Tax cash flow is US\$289 million (A\$413 million)
- Average After Tax cash flow of US\$19.2 million per annum (A\$27.4 million)
- Project IRR of 22%

Financial analysis of the Tiris Project is based on 75% project funding. This is by way of an Export Credit facility equal to US\$56.13 million, with upfront costs of US\$18.71 million. All results are 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 1 July 2021.

Table 13.1 shows the variance in NPV₈, 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\$60/lb U₃O₈, the NPV₈ of the Tiris Project is US\$79.7M. This is with an IRR of 22%, and a project payback of 3.7 years from commencement of production. At this price the project generates annual net cashflows (EBITDA) of US\$19.9M.

<i>Table 13.1: Summary of project financials</i>					
Price	NPV ₈	IRR	Payback	Net Cashflows	
US\$/pound	US\$M		years	Total	annualised
45	15.6	11%	6.4	95.6	11.6
50	36.0	15%	5.3	133.8	14.2
55	57.0	18%	4.4	173.4	17.0
60	79.7	22%	3.7	216.0	19.9
65	102.4	25%	3.3	258.8	22.8

Figure 13.2 shows the sensitivity of the Project NPV₈ to variations in capital and operating costs, uranium head grade and uranium price within the -15% +20% accuracy of the FS. Uranium Price and uranium grade have the greatest impact on project economics.

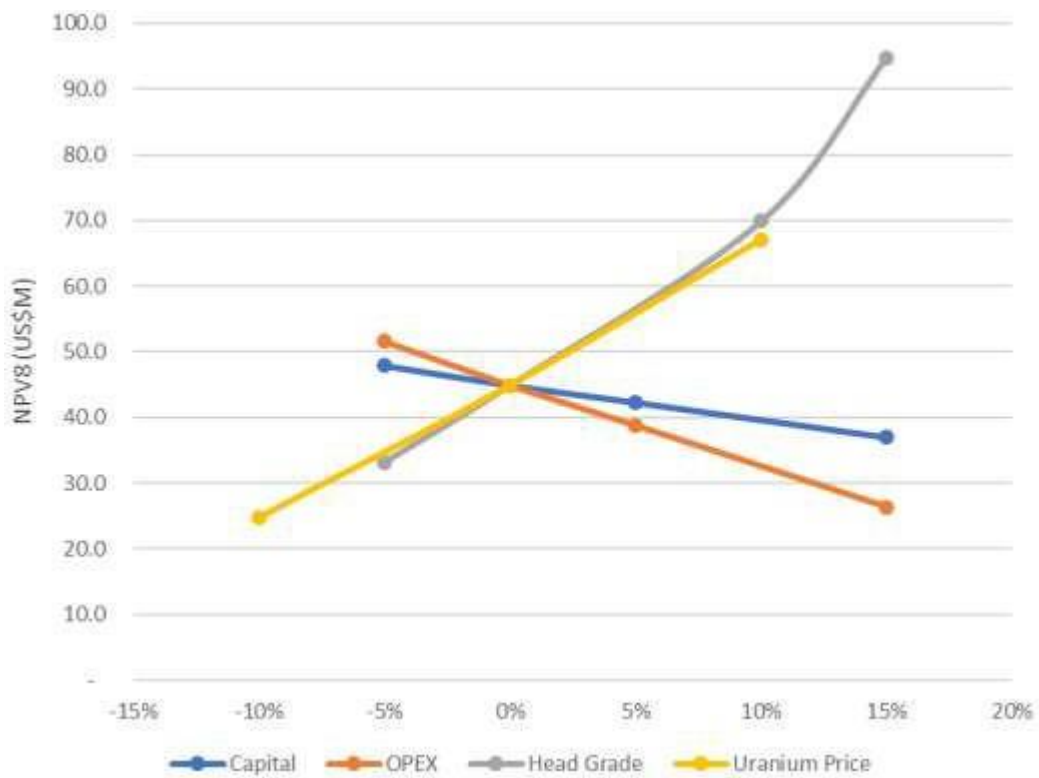


Figure 13.2: Project sensitivity

RISK ANALYSIS

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 in 2019 successfully located water in 2 bores on structures identified by Aura with one producing 15,000 litres per hour. Of 4 holes drilled in the area 2 successfully located good volumes of water. The 50% strike rate in drilling bores 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 of drilling and test work is currently underway.
- 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.