ASX Announcement

16 February 2024
ASX:WMC

WILUNA MINING

WILUNA PFS RE-START STUDY REDEFINES OUTLOOK ON FUTURE OPERATIONS

Wiluna Mining Corporation Limited (Subject to Deed of Company Arrangement) ("**Wiluna**", "**WMC**" or the "**Company**") (ASX:WMC) is pleased to report on the outcomes of a Pre-feasibility Study on a potential restart of mining operations for Wiluna, undertaken by Mining One ("**PFS**").

The Deed Administrators of Wiluna* ("**Deed Administrators**") asked Mining One to author the PFS with the aim of developing an operational foundation for Wiluna based on conservative operating parameters, which would contemplate robust economic returns and the establishment of critical life of mine infrastructure that could then be utilised for sustained production or growth options. The main constraint on the study was limiting the required restart capital to an amount considered viable for a recapitalisation of the Wiluna balance sheet given its status as a company subject to a Deed of Company Arrangement.

This resulted in a PFS that supports a projected 9.5-year operation that would prioritise sulphide material and restart BIOX processing at Wiluna, supported by the existing operational CIL circuit. These processing circuits would be fed initially by an open pit mine, later transitioning to underground mining. Tailings mining and tailings retreatment through the Wiltails repulper would also continue throughout. With the BIOX circuit refurbished, the operations would produce gold doré on site, removing difficulties associated with high arsenic gold concentrate, reduce transport costs, and improving gold payability.

The PFS is constrained by assuming limited capital available for Wiluna development, not potentially available gold resources. The PFS assumes use of less than 7% of underground gold resources. Based on preliminary upside scenario analysis by Mining One, for parties with larger capital availability, significantly larger operations can be contemplated, having regard to estimated gold resources.

Wiluna will shortly commence a strategic review of the best way forward for the Company by inviting parties interested in recapitalisation options for the Company, provision of funding or in the opportunity to acquire some or all of Wiluna's assets.

A complete copy of the PFS accompanies this announcement, and investors are strongly encouraged to read the PFS in full, as well as the **Important Notice** that immediately follows the below highlights.

HIGHLIGHTS OF THE PFS FINDINGS

- Production Target of 750 ktpa of gold ore to be processed, producing an average of 67,500 ounces of gold per annum over the proposed 9.5-year life of mine
- Projected all in sustaining cost (AISC) of A$2,015 per ounce, C1 costs of A$1,939 per ounce
- Low-cost growth capex (including refurbishing of BIOX processing facility; tailings thickener and camp upgrade) of $73 million
- At base case gold price assumption of A$2,880:
    - LOM free cash flow $364 million, 5.5-year payback, pre-tax NPV_8 $198.6 million, IRR 53%
- At spot case gold price assumption of A$3,084:
    - LOM free cash flow $488 million, 3.75-year payback, pre-tax NPV_8 $282 million, IRR 112%
- New Ore Reserves established for Tailings, Open Pit and Underground that support Production Target
    - Underground Ore Reserve 1.4 Mt of ore at 4.2 g/t for 191,000 oz insitu gold (proved and probable)
    - Open Pit Ore Reserve of 3.2 Mt of ore at 2.0 g/t for 201,000 oz insitu gold (all probable)
    - Surface Stockpile (Tailings) Ore Reserve of 22.9 Mt at 0.56 g/t (all probable)
- Total Mineral Resources (excluding Tailings, stockpiles and satellite) of 44.6mt at 3.69 g/t for 5.24 million ounces of insitu gold at the Wiluna Central Mine Area (as announced 29 August 2023 to the ASX)
- Includes income from operational Wiltails repulping circuit commissioned in October 2023

IMPORTANT NOTICE:

The Pre-Feasibility Study referred to in this announcement is based on a JORC Mineral Resources Estimate (Refer ASX Release: JORC Mineral Resource Update 29 August 2023[1]) and includes the newly announced Probable Ore Reserves referred to in this announcement (see page 9 and the Appendix this announcement for further information) The Ore Reserves and Mineral Resource Estimate underpinning the PFS have been prepared by Competent Persons in accordance with the 2012 JORC Code.

The Company advises that the Production Target depletes 100% of Proved and Probable Ore Reserves with an additional 9% Inferred Resource to make up the total processed tonnage and depletes 100% of the total contained gold from Ore Reserves with an additional 19% from Inferred Resources. The production target referred to is based on Mineral Resource estimates which are classified as Measured (2%), Indicated (66%) and Inferred (32%). All the inferred portion is weighted towards the final 2 years of underground mining and the first two years of oxide mining for open pit.

There is a low level of geological confidence associated with Inferred mineral resources, and there is no certainty that further exploration work will result in the determination of Indicated mineral resources or that the production target itself will be realised.

The stated production target is based on the Company's current expectations of future results or events, supported by the findings of the PFS, and should not be solely relied upon by investors when making investment decisions; especially given the Company's current financial and operational status. Further evaluation work and appropriate studies are required to establish sufficient confidence that this target will be met. The Company notes that, according to the results of the PFS, the Project forecasts a positive financial performance (based on the assumptions applied) and the Company is therefore reasonably satisfied that the use of Inferred resources in production target reporting and forecast financial information is not the determining factor in overall Project viability and that it is reasonable to report the PFS including the Inferred resources.

The Company has concluded that it has a reasonable basis for providing the forward-looking statements included in this announcement. The detailed reasons for that conclusion are outlined throughout this announcement.

SUMMARY OF KEY PFS OUTCOMES

Metric	Unit	Base Case A$2,880	Spot Case A$3,084
Life of Mine	Years	9.5	9.5
Gold produced (LOM)	Koz	641.7	641.7
Gold produced (annual average – LOM)	koz/yr	67.5	67.5
Pre-Production capital cost (inc BIOX)	A$M	73	73
Project Payback period	years	5.5	3.75
All-in sustaining costs (AISC) (LOM)	A$/oz	2,015	2,015
Cash Costs (C1) LOM	A$/oz	1, 939	1,896
Project free cash flow (pre-tax)	A$M	364	488
Pre-tax NPV_8	A$M	198.6	282
Pre-tax IRR	%	53	112

Commentary

FTI Consulting Senior Managing Director Mike Ryan said that the completed Pre-Feasibility Study on a restart of operations demonstrated there is a potential pathway to return to the Wiluna operations to a viable footing, and for a modest amount of capital expenditure.

"As has been demonstrated through multiple Resource and Reserve statements, Wiluna has a large amount of gold mineral and ore at healthy grades. The potential of the 5.24 million ounces of gold contained within Wiluna resources cannot be overlooked[2]. Operations around the world with similar refractory ore utilising BIOX processing have now produced tens of millions of ounces of gold, for over 30 years, demonstrating viability.

[1] Refer to ASX Announcement dated 29 August 2023 for the full mineral resource breakdown for the Project. The Company confirms that it is not aware of any new information or data in relation to mineral resources that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the estimates of mineral resources in the announcement continue to apply and have not materially changed.

[2] Refer to ASX Announcement dated 29 August 2023 for the full mineral resource breakdown for the Project. 64% of resources are inferred. There is a low level of geological confidence associated with Inferred mineral resources, and there is no certainty that further exploration work will result in the determination of Indicated mineral resources or that the production target itself will be realised.

Unfortunately, the previous operations at the Wiluna Gold Mine struggled with various operational and financial issues and were unable to properly pursue this potential. Having said this a very significant investment (in excess of $100m) has been made in Wiluna's recent past in rehabilitating and developing the underground accesses; extension drilling and construction and commissioned a new flotation circuit.

Our next step is to seek parties who are interested in Wiluna's potential, as demonstrated by this PFS and the additional upside opportunities possible should larger amounts of capital be available and deployed," Mr Ryan said.

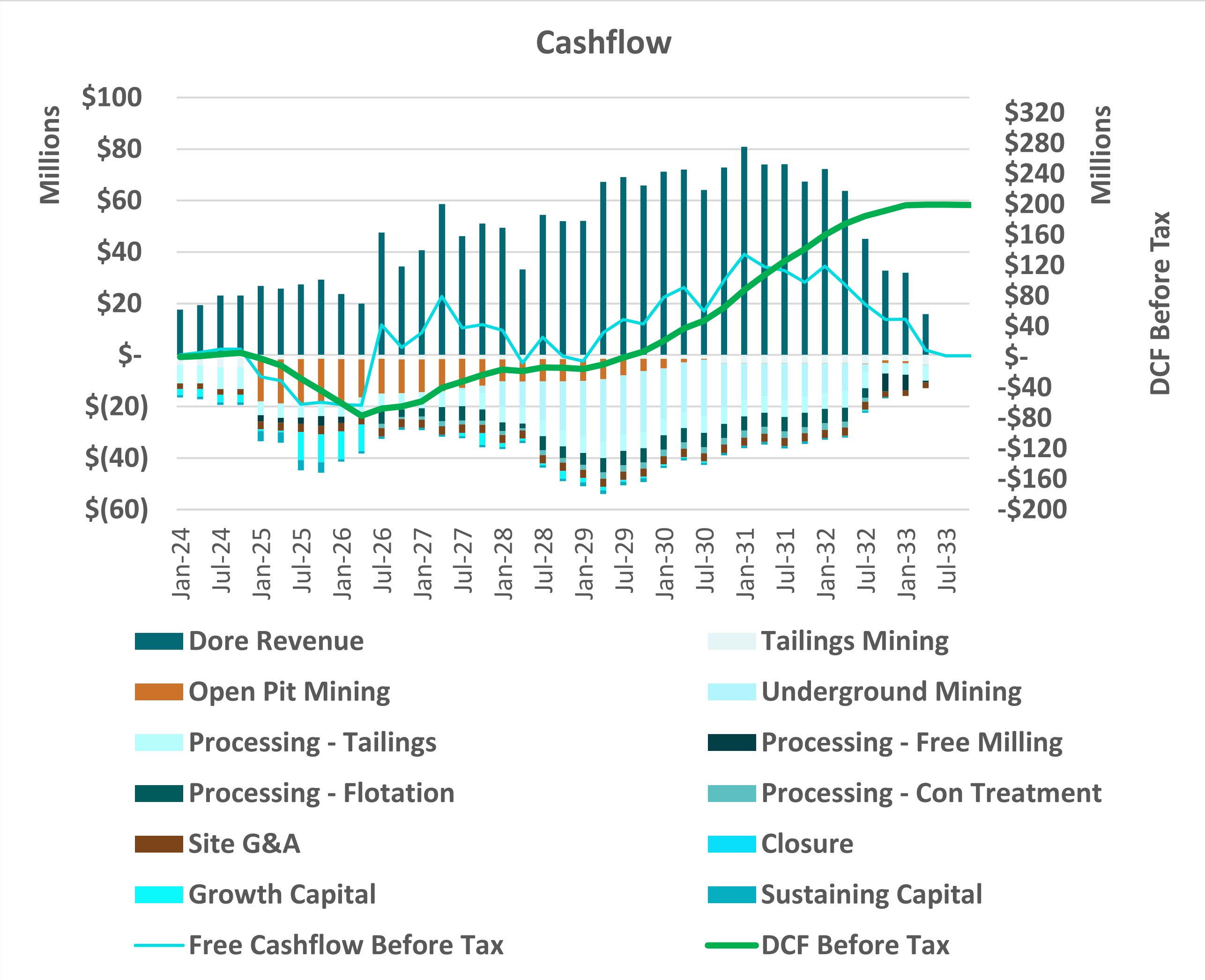
Next Steps – Strategic Review

The Deed Administrators are pleased to announce a strategic review of the best way forward for the Company by inviting parties interested in the opportunity to acquire some or all of Wiluna's assets, provision of funding, or recapitalisation options for the Company. Australian advisory firm **amicaa** continue to act as financial advisor for Wiluna and will be commencing the strategic review in the near future.

Interested parties should contact either, David Wood (CEO), Mischa Mutavdzic (Senior Advisor) or Nicholas Tan (Associate). Initial expressions of interest should be directed to ntan@amicaa.co.

Expected Life of Mine Cashflow – Base Case A$2880/oz gold price

Figure 1: Expected Life of Mine Cashflow – Base Case A$2880/oz gold price



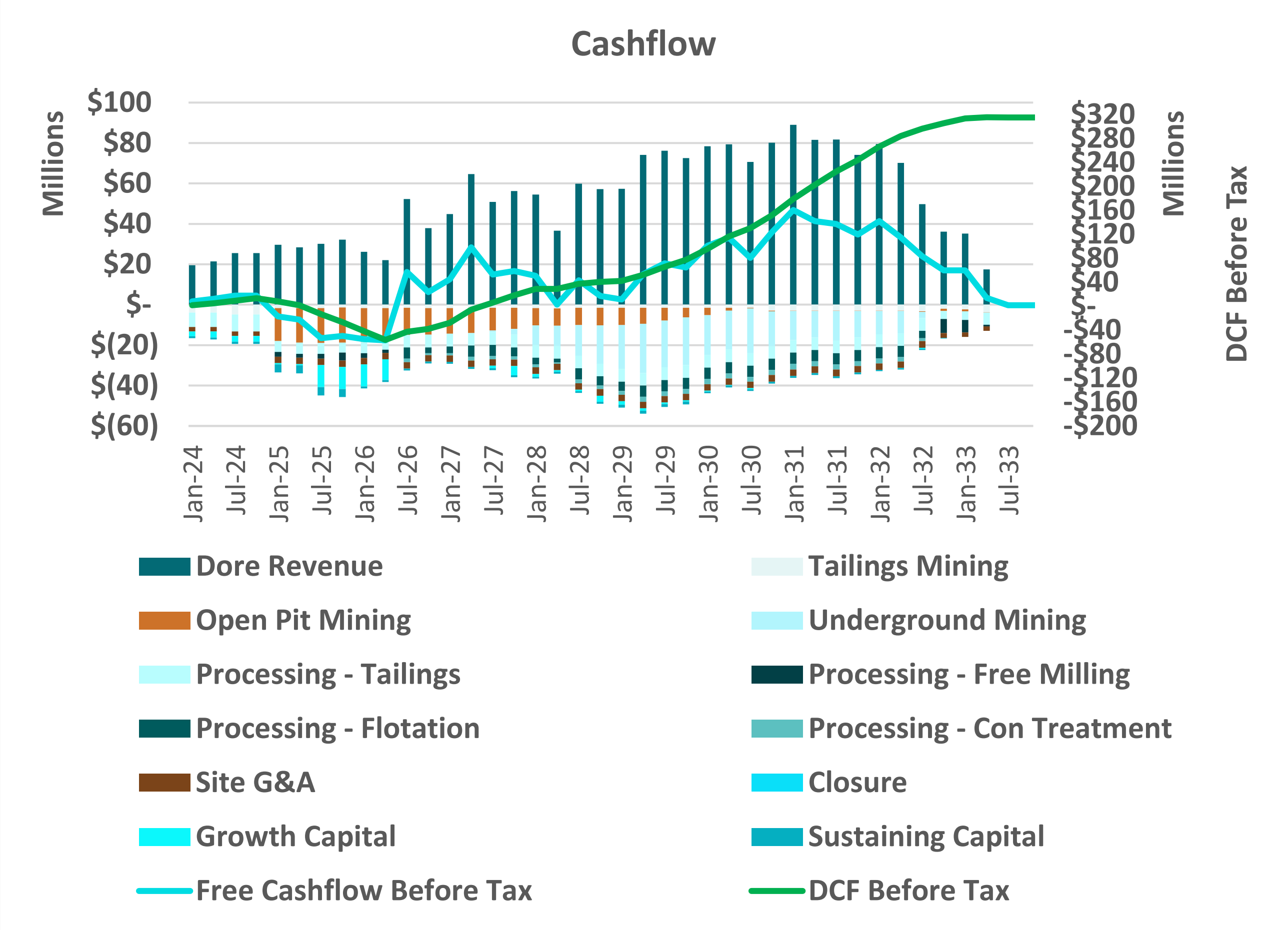
Notes:

1. This forecast is derived from the production targets set out in page 16 of this announcement.
2. Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.
3. Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.

4. Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

Expected Life of Mine Cashflow – Spot Case A$3,084/oz gold price

Figure 2: Expected Life of Mine Cashflow – Spot Case A$3,084/oz gold price



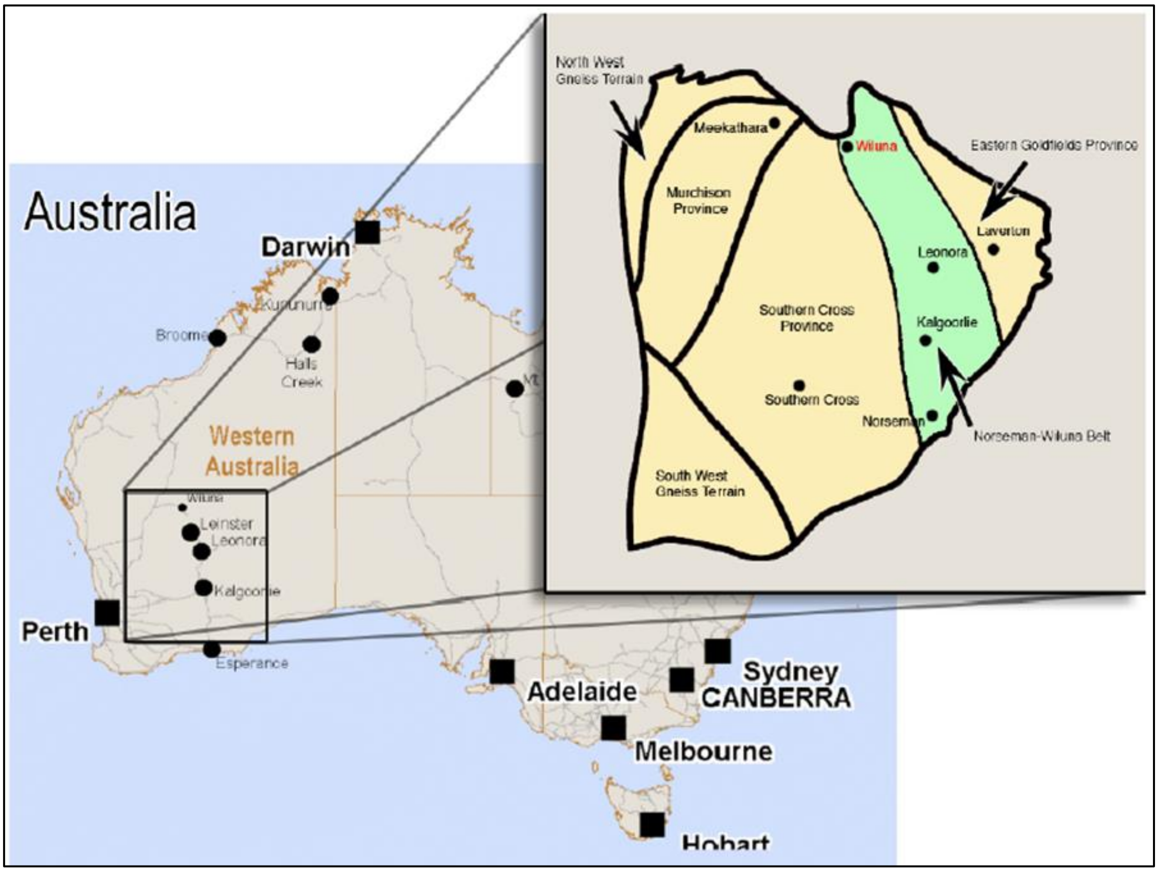
Notes:

1. This forecast is derived from the production targets set out in page 16 of this announcement.
2. A$3,084 is the gold price at time of PFS authoring.
3. Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.
4. Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.
5. Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

Location & Description

The regional location of the Wiluna Gold Project is in the mid-west region of Western Australia, see Figures below. It is situated on the edge of the Western Desert at the gateway to the Canning Stock Route and Gunbarrel Highway. The local town of Wiluna is the main service centre.

Figure 3: Wiluna Location Map (Lambert-Smith, n.d)



Geology, Mineralisation and Resources

The Wiluna Gold Mine, situated in the northeastern Goldfields region of Western Australia, exhibits a geologically complex setting characterized by a variety of mineralisation styles. The Archean-aged Wiluna greenstone belt, formed over 2.7 billion years ago, hosts key mineralised structures such as the Wiluna Main, East, and Bulletin shear zones, folded and faulted over time.

The Wiluna Main shear zone, crucial for gold resources, features interrelated east-northeast trending shears and folds with multiple generations of quartz veins and sulfide mineralisation. The East shear zone, parallel to Wiluna Main, hosts gold and nickel, while the Bulletin shear zone to the east contains significant gold mineralisation.

The mineralisation at Wiluna is controlled by north- and northeast-trending dextral strike-slip faults associated with the Perseverance Fault. Gold mineralisation includes non-refractory quartz reef-hosted and refractory lode styles. The latter is governed by the Wiluna Fault System, with ore shoots plunging north and localized along faults at dilational bends, intersections, horsetail splays, and subsidiary overstepping faults.

The rock has rock undergone alteration, forming distinct sequential wall-rock alteration zones. Gold is found as sub-microscopic particles within or in solid solution with sulfide minerals like pyrite and arsenopyrite. Arsenopyrite, closely associated with gold, occurs in fine-grained rhombs and indicates high gold concentrations. The geological map illustrates the regional setting, emphasizing the diverse mineralisation styles within the Wiluna Gold Mine.

- Drilling Source Data

The complete Wiluna drilling database was supplied to Mining One where a combination of diamond and reverse circulation drill holes were used to inform the updated block model. A total of 38,149 drill holes were contained within the Wiluna_MM.mdb Access database. A total of 1,098,838 discrete assay intervals are also contained within the database.

- Ore Type

The Wiluna deposit contains gold mineralisation that is either free milling or refractory in nature. The refractory gold component is locked within the sulphide crystal lattice and therefore requires different processing methods than the free milling components. The free milling zones are generally related to the cross cutting domains such as Golden Age. A third category of transitional material also exists.

Extracting gold from the two major ore types must be done differently. Free Milling extraction is done by traditional CIL mesh and extraction of Fresh material, by a pre oxidation method. That transitional is dealt with as a function of its degree of oxidisation.

The 2023 Open Pit and Underground Mineral Resources estimated by Mining One Consultants in addition to the satellite deposits, stockpile and tailings Mineral Resources reported in 2021 are summarised in the following tables.

Table 1: Wiluna Total Mineral Resources as of 24th August 2023[3]

Wiluna Mineral Resource Summary as of 24th August 2023												
Mining Centre	MINERAL RESOURCES											
	Measured			Indicated			Inferred			Total 100%		
	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	**Mt**	**g/t Au**	**koz Au**
AUGUST 2023 MINING ONE MINERAL RESOURCES – WILUNA CENTRAL MINE AREA												
Wiluna – Open Pit	0.13	2.45	11	12.16	2.15	839	4.04	2.35	305	**16.33**	**2.20**	**1,156**
Wiluna – UG	1.70	4.79	261	4.99	4.73	760	21.58	4.41	3,059	**28.27**	**4.50**	**4,080**
SUB TOTAL	**1.83**	**4.35**	**272**	**17.15**	**2.90**	**1,599**	**25.62**	**4.09**	**3,364**	**44.60**	**3.66**	**5,236**

Table 2: Wiluna Satellite Deposits November 2021[4]

Wiluna Mineral Satellite Deposit Resource Summary as at 21st November 2021												
Mining Centre	MINERAL RESOURCES											
	Measured			Indicated			Inferred			Total 100%		
	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	**Mt**	**g/t Au**	**koz Au**
NOVEMBER 2021 WMC REPORTED MINERAL RESOURCES – SATELLITE DEPOSITS												
Matilda	0.03	2.18	2	1.24	1.72	68	0.88	2.71	76	**2.14**	**2.13**	**147**
Lake Way	0.27	1.73	15	0.68	2.27	50	2.11	1.56	106	**3.06**	**1.74**	**171**
Galaxy	0.01	1.87	1	0.03	2.24	2	0.11	3.35	12	**0.15**	**3.02**	**15**
SUB TOTAL	**0.31**	**1.78**	**18**	**1.95**	**1.92**	**120**	**3.10**	**1.95**	**194**	**5.35**	**1.93**	**333**

[3] Refer to ASX Announcement dated 29 August 2023 for a full mineral resource breakdown for the Project. The Company confirms that it is not aware of any new information or data in relation to mineral resources that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the estimates of mineral resources in the announcement continue to apply and have not materially changed.

[4] Refer to ASX Announcement dated 17 November 2021 for a full mineral resource breakdown. The Company confirms that it is not aware of any new information or data in relation to mineral resources that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the estimates of mineral resources in the announcement continue to apply and have not materially changed.

Table 3: Wiluna Centre Open Pit Model Results, 2023, from constrained pit shell analysis @$3,250$Au/oz

M1 JUNE 2023 BLOCK MODEL – PIT RESOURCES ($3,250 AUD oz SHELL)									
Material Type	**Res Cat**	**Volume**	**Tonnes**	**Au_ppm**	**As_ppm**	**Sb_ppm**	**S_ppm**	**Au oz**	**Cut-Off**
FRESH	MEASURED	39,598	110,873	2.43	3254	79	9656	8,662	0.7 ppm
	INDICATED	2,702,391	7,566,694	2.86	3549	74	10291	695,765	
	INFERRED	757,551	2,121,142	3.38	3912	579	11069	230,503	
SUBTOTAL		3,499,539	9,798,709	2.97	3624	184	10452	935,655	
TRANSITION	MEASURED	6,633	16,582	2.54	3325	26	9810	1,354	0.35 ppm
	INDICATED	1,080,859	2,702,148	1.06	2301	43	7611	92,089	
	INFERRED	289,043	722,607	1.25	2433	97	7894	29,040	
SUBTOTAL		1,376,535	3,441,338	1.11	2334	54	7681	122,812	
OXIDE	MEASURED	3,020	6,039	2.49	3290	27	9735	483	0.35 ppm
	INDICATED	952,641	1,905,281	0.85	2155	39	7297	52,068	
	INFERRED	598,387	1,196,773	1.19	2389	77	7801	45,788	
SUBTOTAL		1,554,047	3,108,094	0.99	2248	54	7496	98,928	
GRAND TOTAL		**6,430,121**	**16,348,141**	**2.20**	**3,091**	**132**	**9,307**	**1,157,396**	

Table 4: Wiluna Centre Underground Model Results

M1 JUNE 2023 BLOCK MODEL – UG RESOURCES (BELOW $3,250 AUD oz SHELL)									
Material Type	Res Cat	Volume	Tonnes	Au_ppm	As_ppm	5b_ppm	5_ppm	Au oz	Cut-off
FRESH	MEASURED	794,863	2,225,617	5.45	5,352	33	14,160	389,976	2.3 ppm
	INDICATED	1,839,941	5,151,836	4.7	4,828	29	13,036	778,485	
	INFERRED	7,559,195	21,165,747	4.41	4,628	66	12,607	3,000,978	
SUBTOTAL		10,194,000	28,543,200	4.54	4,720	57	12,805	4,166,286	
TRANSITION	MEASURED							0	2.3 ppm
	INDICATED	8,234	20,586	7.63	6,865	41	17,410	5,050	
	INFERRED	11,809	29,521	3.86	4,246	47	11,786	3,664	
SUBTOTAL		20,043	50,107	5.41	5,322	45	14,096	8,715	
OXIDE	MEASURED							0	2.3 ppm
	INDICATED	2,223	4,445	5.55	5,422	48	14,312	793	
	INFERRED	2,563	5,125	3.99	4,339	57	11,986	657	
		4,785	9,570	4.72	4,842	53	13,066	1,452	
GRAND TOTAL		10,218,828	28,602,877	4.55	4,722	57	12,808	4,176,454	

- Tailings Deposits

There are extensive tailings deposits located in the main Wiluna centre area. These deposits are located within tailings dams and as fill within the historically mined open pits. Mining One has not re-estimated these deposits and report them here as stated in November 2021.

Table 5: Wilina Tailings and Stockpile Depleted Resources – November 2021[5]

WILUNA TAILINGS DEPOSIT MINERAL RESOURCES NOVEMBER 2021				
DEPOSIT	**RES CLASS**	**Mt**	**Au_ppm**	**Au koz**
	MEASURED	-	-	-
TAILINGS	INDICATED	33.2	0.57	611
	INFERRED	-	-	-
	MEASURED			
STOCKPILES	INDICATED	3.03	0.50	49
	INFERRED			
TOTAL		**36.23**	**0.57**	**657**

Mining, Production Profile and New Ore Reserves, Tailings

The Wiluna tailings consist of tailings produced during previous operations that are stored in pit voids or tailings storage facilities. A PFS was completed for tailings retreatment by Blackham Resources in 2019 which considered a total of 32.8 Mt at 0.57 g/t Au to be mined. This included all the pit voids as well as TSF West, TSF H, TSF C Upper and TSF C Lower.

Mining One has only considered remining and processing the tailings storage facilities in this study, as the pit voids may not have dewatered sufficiently to allow mining by excavator and transport by truck.

Tailings processing uses a drum scrubber followed by a slurry pump to deliver the slurry to the CIL plant. The scrubber was commissioned in October 2023 and has been operating since then. This follows a three-month trial of tailings processing from March to May 2023 through the mill, which confirmed the recovery assumptions for TSF West.

Figure 4: Wiltails feed system to CIL plant (TSF Western Cell in the background)

Wiluna is currently reclaiming TSF Western Cell using a fleet of 40t 6x6 wheel drive Articulated Trucks, loaded by either 50t Doosan backhoe configured excavators or 80t Doosan backhoe-configured excavators. Support equipment includes a dozer, water truck and grader.

The current mining of TSF Western Cell involves a short haul to the base of the TSF where the reclaimed tailings are dumped on the ROM pad. This allows for blending with other materials (currently historic reclaimed heap leach stacks)

[5] Refer to ASX Announcement dated 17 November 2021 for a full mineral resource breakdown for the Project. The Company confirms that it is not aware of any new information or data in relation to mineral resources that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the estimates of mineral resources in the announcement continue to apply and have not materially changed.

before being reclaimed by a Front End Loader (FEL) and fed into a hopper before being conveyed into a scrubbing trommel.

Figure 5: Quarterly (i.e. period) Material Movement

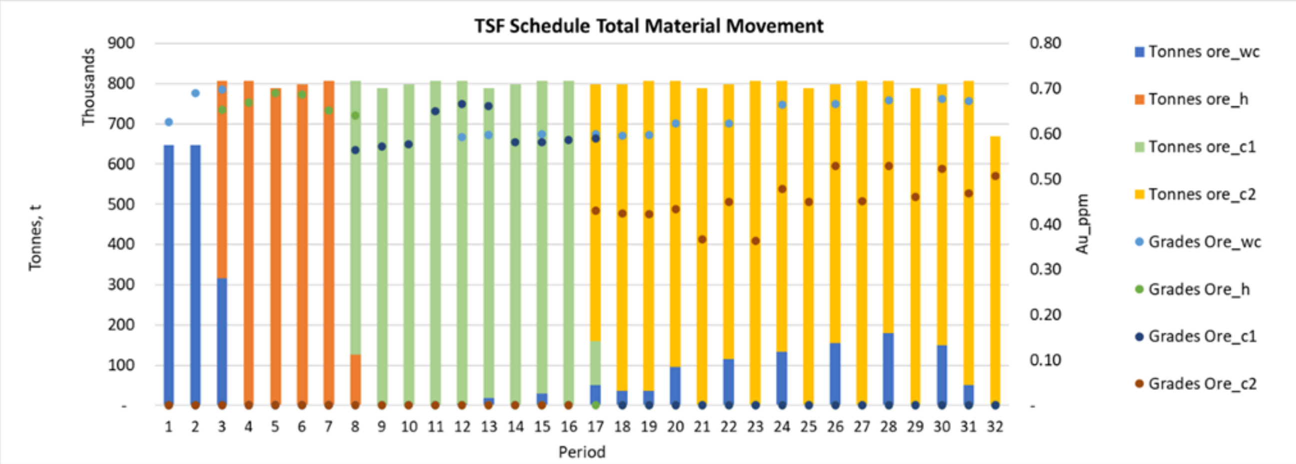


Table 6: Wiltails Tailings Production Target Estimate

Wiltails Tailings Production Target Estimate							
		COG*	Tonnage (kt)	Au g/t	Contained Au oz	Recovery	Recovered Au oz
Proved			-	-	-	-	-
Probable	Western Cell	0.0	2,930	0.65	61,690	48.9%	28,040
	TSF H	0.0	3,818	0.67	82,350	48.9%	40,270
	TSF-C Upper	0.0	7,137	0.60	138,800	43.1%	59,820
	TSF C Lower	0.0	10,713	0.45	155,050	39.3%	52,000
Total		**0.0**	**24,598**	**0.55**	**437,890**	**43.0%**	**191,190**

Note: This production target is based solely on proved or probable ore reserves.

Mining, Production Profile and New Ore Reserves, Open Pit

Historically, the Wiluna deposit has been mined using both surface and underground mining methods. There is interaction between the historical mining, with void exposure from the open pits occurring sporadically. The historical open pit mining utilised conventional truck and excavator mining.

An updated Wiluna block model was prepared to include all minable areas in the Wiluna deposit into a single block model for simpler downstream processing.

The block model was prepared by Mining One geologists utilising Ordinary Kriged (OK) statistical modelling methodology. It incorporates up-to-date mined surfaces and wireframes as provided by the client, as well as any existing waste dumps or other variations in land surfaces. The block model was generated using GEOVIA Surpac ™ software, and includes gold, arsenic and sulphur, as well as weathering, resource classifications and an ore delineation for processing identification if required. The optimisation included adding Mining Costs and Adjustment factors, Processing Cost Adjustment Factors, geotechnical zones and material processing classifications.
The model was adjusted for mined material and backfilled material using the following topographies:

- As Built Topography
- Final Mined Surface Topography

The following information was used to classify the rock types located at the Wiluna site:

- Resource Category
- Weathering status
- Leachability (preferential milling method)

Table 7: Optimisation Parameters

MINING PARAMETERS			
PARAMETER	**Notes**	**Unit**	
Dilution		%	115
Recovery		%	95
Mining Cost	Based on 777 fleet	Base $/t mined	4.95

Table 8: Processing Plant Parameters

PROCESSING PLANT PARAMETERS			
PROCESSING COSTS	**Notes**	**Unit**	
OXIDE (Incl. General and Administration)[6]		$/tonne milled	23.30
TRANSITIONAL[7] (Incl. General and Administration)		$/tonne milled	26.27
SULPHIDE Breakdown			
SULPHIDE – Incl. General and Administration, Flotation OPEX		$/tonne milled	56

Table 9: Mill Recovery

MILL RECOVERY			
PARAMETER	**Notes**	**Unit**	
Free Milling CIL – Oxide		%	84
Free Milling CIL – Trans		%	78
BIOX Mass Pull		%	4.1
Flotation recovery		%	87.5
BIOX recovery		%	96

Table 10: Financial Parameters

FINANCIAL PARAMETERS			
PARAMETER	**Notes**	**Unit**	
Sell Price	Au (Dore)	$/oz	2650
Refining Cost		$USD/oz	1.60
Royalty	State and 3rd Party	%	6.1
Discount Rate		%	10

- PFS Slope Recommendations

Based on observations and the performance of observed slopes, it is considered that the existing slope configurations are suitable for a PFS level of study.

The table below shows the recommended slope parameters for PFS level open pit design. For optimization purposes, a 50° Overall Slope angle (OSA) is recommended which is in line with the current observed OSA.

[6] General and Administration cost of $4.00 used
[7] Including Free Milling Sulphides

Table 11: Recommended PFS slope design parameters

Material	Batter face angle (°)	Berm width (m)	Batter Height (m)
Oxide	65	5	20
Transitional	55	5.5	15
Fresh	70	4	20

- Designs

The pit designs are presented in the figures below.

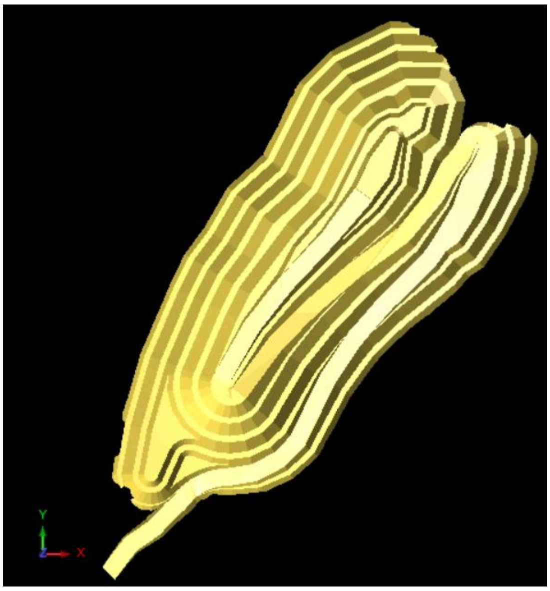


Figure 6: Bulletin Pit design

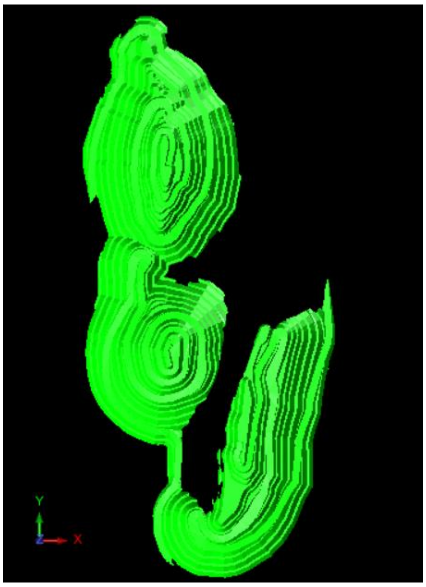


Figure 7: South Area Pit design

Table 12: Open Pit Production Physicals

	Oxide			Transitional			Fresh		
	Tonnes	Au g/t	Oz Au	Tonnes	Au g/t	Oz Au	Tonnes	Au g/t	Oz Au
Yr1	402,974	0.66	8,515	219,019	0.99	4,798	-	-	-
Yr 2	114,940	0.62	2,300.76	120,101	0.98	2,610.82	281,250	2.43	11,554
Yr 3	-	-	-	-	-	-	638,505	2.76	29,783
Yr 4	-	-	-	-	-	-	307,906	2.88	14,999
Yr 5	-	-	-	-	-	-	627,535	3.15	33,424
Yr 6	58,142	0.66	1,236.88	325,000	0.99	7,117.68	374,742	3.55	22,534
Yr 7	-	-	-	365,251	0.99	7,999	-	-	-

Figure 8: Production Target Mill Feed

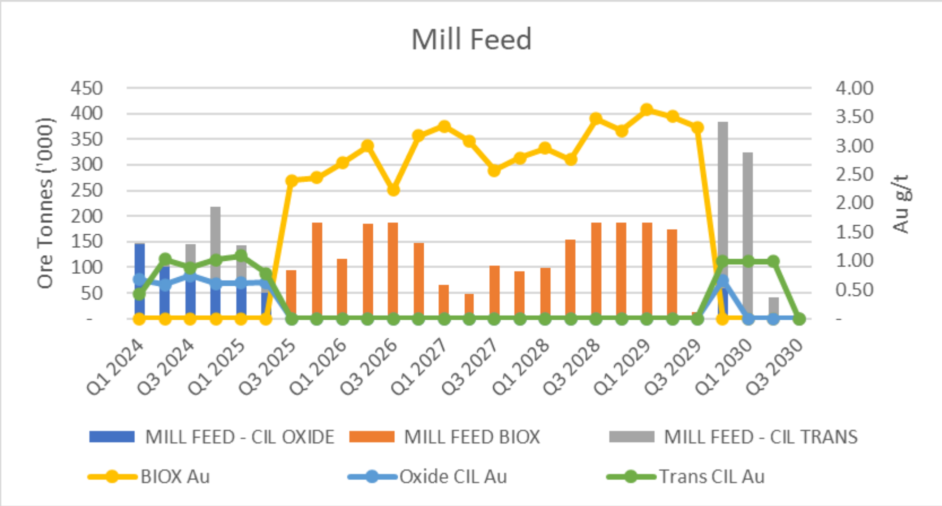


Figure 9: Production Target Stockpiles

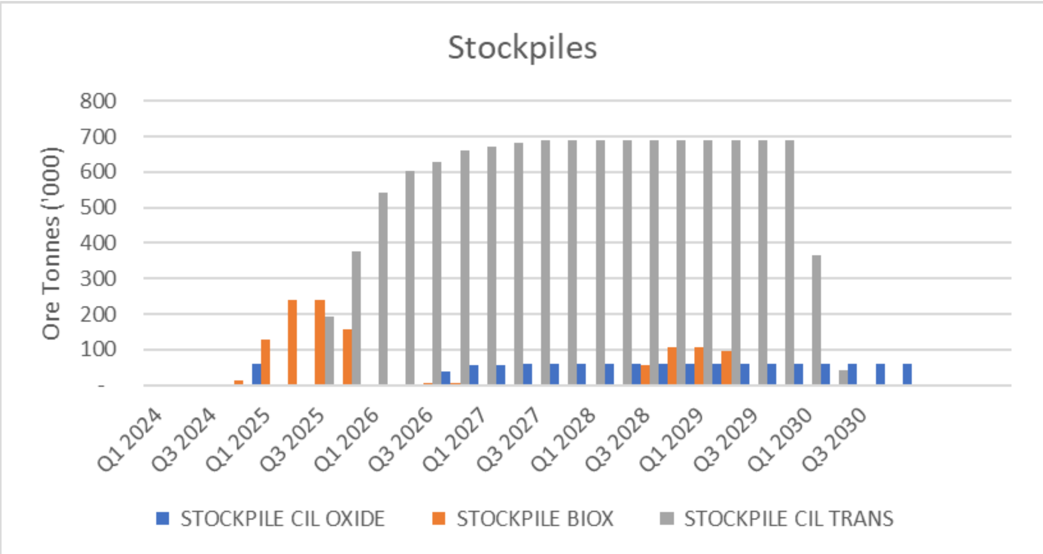


Table 13: Production Target Resource Breakdown Ex Pit

Year 1	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	190,022	0.53	3,244	196,753	1.01	6,406	10,778	2.05	709
Inferred	212,952	0.77	5,272	22,266	0.77	552	430	1.50	21
Total	402,974	0.66	8,516	219,019	0.99	6,958	11,208	2.03	730

Year 2	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	147,996	0.64	3,042	463,804	1.04	15,461	263,863	2.46	20,881
Inferred	21,705	0.63	442	30,940	0.70	699	9,786	1.99	628
Total	169,701	0.64	3,484	494,744	1.02	16,160	273,649	2.44	21,509

Year 3	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	3,354	0.50	53	273,317	0.95	8,336	632,759	2.75	55,847
Inferred	26	0.38	0	14,606	0.80	375	2,139	6.75	464
Total	3,380	0.49	54	287,923	0.94	8,711	634,898	2.76	56,311

Year 4	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	27,494	0.94	833	303,437	2.89	28,229
Inferred	-	-	-	192	0.43	3	4,469	1.89	272
Total	-	-	-	27,686	0.94	836	307,906	2.88	28,501

Year 5	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	-	-	-	732,607	3.18	74,888
Inferred	-	-	-	-	-	-	526	3.18	54
Total	-	-	-	-	-	-	733,133	3.18	74,941

Year 6	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	-	-	-	269,144	3.63	31,391
Inferred	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	269,144	3.63	31,391

Note to Table 12, Table 13, Figure 8 and Figure 9:

1. The production target referred to is based on Mineral Resource estimates which are classified as Measured (2%), Indicated (66%) and Inferred (32%). All the inferred portion is weighted towards the final 2 years of underground mining and the first two years of oxide mining for open pit. There is a low level of geological confidence associated with Inferred mineral resources, and there is no certainty that further exploration work will result in the determination of Indicated mineral resources or that the production target itself will be realised.

Table 14: Bulletin Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	446,312	1.79	25,741
Total	**446,312**	**1.79**	**25,741**

Table 15: West Lode Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	1,736,255	2.11	117,971
Total	**1,736,255**	**2.11**	**117,971**

Table 16: Total Open Pit Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	3,196,795	1.96	201,340
Total	**3,196,795**	**1.96**	**201,340**

Note to Table 14, Table 15 and Table 16:

1. The Open Pit Ore Reserves estimate is based on the mineral resource model estimates classified as indicated after consideration of all mining, metallurgical and financial aspects of the operations. No inferred mineral resource has been considered in any part of the derivation of the open pit ore reserves.
2. See Appendix for a full JORC Table 1 for the Open Pit Ore Reserves estimate established under the PFS and referred to in this announcement.

Mining, Production Profile and New Ore Reserves, Underground

- Overview

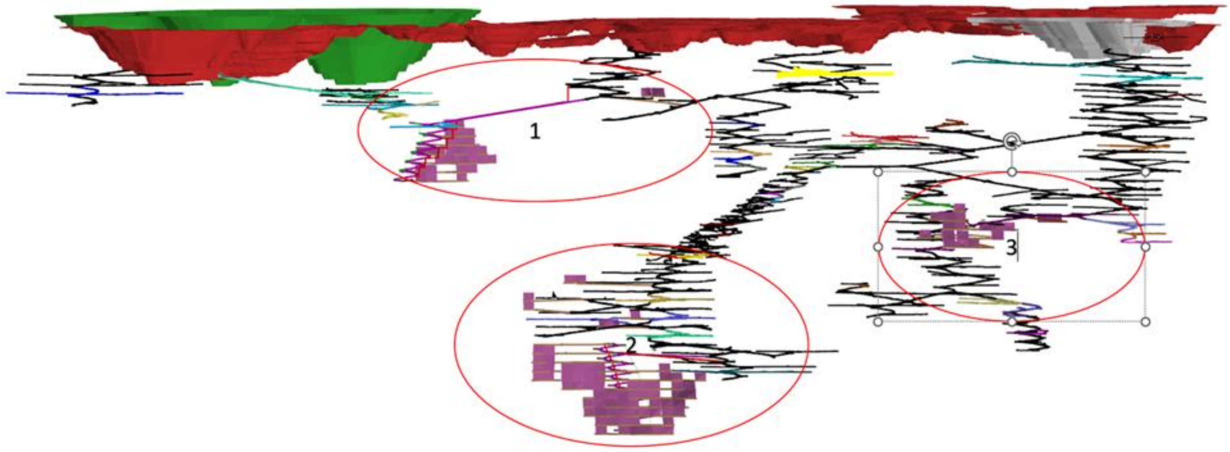
The Wiluna UG concept consists of three distinct areas:

Zone 1: This zone primarily comprises virgin ground in the Eastern Lode North (ELN) region of the underground mine. It also contains two small, high-grade stopes under the Happy Jack portal, which require minimal development for access. This area is likely to be mined using open stoping. Additionally, it contains a diamond drill drive enabling drilling into the southern area of ELN to potentially convert the large, inferred resource located in that area.

Zone 2: This is a deeper mining region situated in the Burgundy (BUR) area of the underground mine, also primarily consisting of virgin ground. A small portion can be accessed from previously mined workings, which provides easier ore extraction during the initial mining. Due to the depth of this zone, the stopes will need to be filled. Initial plans involve using Cemented Rock Fill (CRF) to provide stability for surrounding stopes and Rock Fill (RF) to complete the filling process. Diamond drilling can also be conducted in this area to confirm additional inferred resource.

Zone 3: This zone mainly consists of remnant stopes in the WOD region. Access to this area for dewatering is immediate upon commencing activities to access the stoping fronts.

Figure 10: The Wiluna UG concept



A variety of mine methods will be used utilising diesel trucks and boggers. They are: -

1. **Retreat Open Stoping**

Planned method for Zones 1 and 3 and partial method of Zone 2. This method was selected as it was the historic method of the mine. A geotechnical review was completed on the areas planned and it was determined that the ground was competent for such a method.

2. **Open Stoping with Pillars**

Due to the planned sequencing of the mining, retaining pillars would have been less efficient in the area it was planned for open stoping. Historical mining showed that the pillars were not required to maintain a competent rock mass in the chosen stoping areas.

3. **Open Stoping with Cement Rock Fill (CRF)/Rock Fill (RF)**

After geotechnical review, this method was selected to mine the virgin area of Zone 2. This method would provide a stable pillar after each stope to continue the retreat method of stope sequencing planned. It would also enable the continued use of production drilling using downholes for the stoping as it would be possible to mine back through the CRF and re-access the top of the stoping areas.

Table 17: Reserve Case Physicals

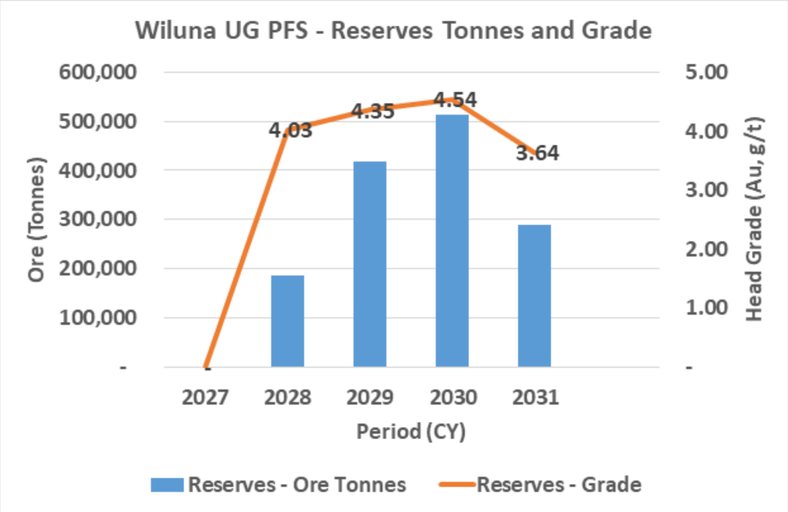
	1	2	3	4	5
Production (t)	0	186,784	418,158	513,473	290,301
Grade (g/t)	0	4.03	4.35	4.54	3.64
Lateral Development (m)	133	4,729	7,972	3,115	4
Vertical Development – EWR	32	81	252	118	
Vertical Development – RAR	50	157	217	132	
Rehab (est. m)	1,000	4,500	3,000	2,800	1,100

Table 18: Reserve Case Resource Breakdown

	1	2	3	4	5
Measured Tonnes	0	29,664t	208,376t	136,089t	73,268t
Measured Grade	0	4.25g/t	5.89g/t	5.6g/t	4.48g/t
Indicated Tonnes	0	117,828t	122,688t	296,424t	171,029t
Indicated Grade	0	5.1g/t	4.63g/t	5.34g/t	4 g/t
Inferred Tonnes	0	0	0	0	0
Inferred Grade	0	0	0	0	0
Planned Internal Dilution* (0 g/t grade)	0	39,292t	87,094t	80,959t	46,002t

* Planned Internal Dilution is material that will be removed during mining, which cannot be classified as part of the Ore Reserve. It is treated as waste for modelling purposes, at 0g/t grade and does not contribute gold ounces to the production target. There is a low level of geological confidence associated with this material, and there is no certainty that further exploration work will result in the determination of Reserves from this material.

Figure 11: Reserve Case Tonnes and Grade



- Wiluna PFS Production Target Case

The Production Target case provides the required tonnages to support production with a duration of four and a half years rather than the four years initially targeted. The tonnages have been able to be increased with the addition of material primarily in the upper area of Zone 3. There are also stopes in the other areas in yellow which can be brought into the schedule. These stopes could not be included in the Reserve schedule as there is too much Inferred resource within these stopes.

Table 19: Production Target Physicals

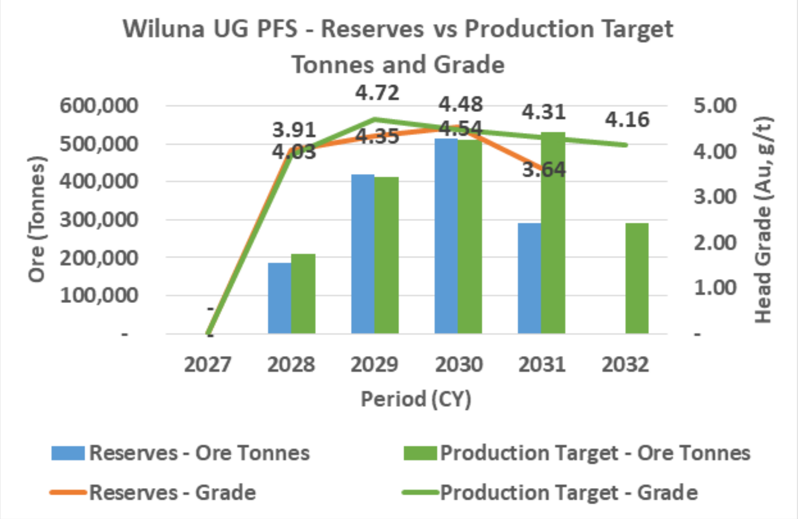
Year	1	2	3	4	5	6
Production (t)	0	210,463	411,592	511,423	531,401	289,641
Grade (g/t)	0	3.94	4.32	4.35	4.55	3.91
Lateral Development (m)	155	4,804	8,270	4,715	1,735	158
Vertical Development – EWR	0	53	252	178	0	0
Vertical Development – RAR	25	132	217	182	0	0
Rehab (est. m)	1,000	4,500	3,100	2,900	2,900	

Table 20: Production Target Resource Breakdown

	1	2	3	4	5	6
Measured Tonnes	0	31,078t	178,483t	129,732t	82,387t	28,791t
Measured Grade	0	4.06g/t	6.86g/t	5.88g/t	3.99g/t	6.68g/t
Indicated Tonnes	0	118,428t	123,165t	283,606t	132,820t	108,270t
Indicated Grade	0	5.31g/t	4.83g/t	4.95g/t	5.34g/t	3.95g/t
Inferred Tonnes	0	16,355t	26,522t	26,920t	189,363t	101,674t
Inferred Grade	0	4.13g/t	4.68g/t	4.70g/t	6.62g/t	5.75g/t
Planned Internal Dilution* (0g/t Grade)	0	62,713t	80,976t	95,417t	110,402t	50,905t

* Planned Internal Dilution is material that will be removed during mining, which cannot be classified as part of the Resources. It is treated as waste for modelling purposes, at 0g/t grade and does not contribute gold ounces to the production target. There is a low level of geological confidence associated with this material, and there is no certainty that further exploration work will result in the determination of Resources from this material.

Figure 12: Production Target vs Reserves target Tonnes and Grade (specific year to be adjusted)

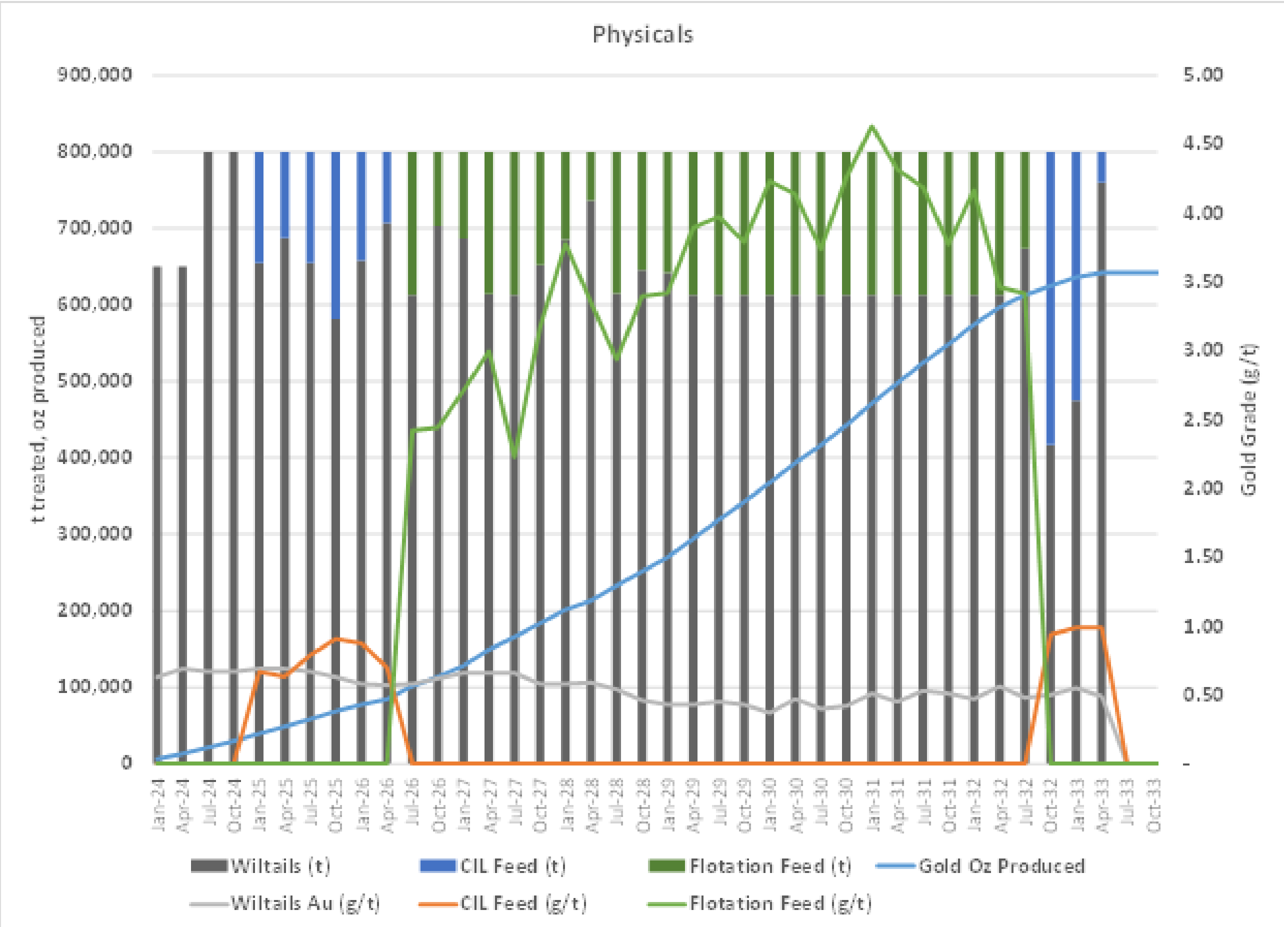


Combined Production profile

- Production Target Cashflow at A$2880/oz

The physicals are presented below. Production is entirely from tailings reprocessing in the first year (nominally) of 2024, prior to open pit mining in 2025. There are six quarters of oxide and transition feed prior to fresh material from mid-2026. Fresh ore feed from the open pit and underground then continues until the end of 2031. Fresh grade increases as an increasing proportion of material from underground is sourced.

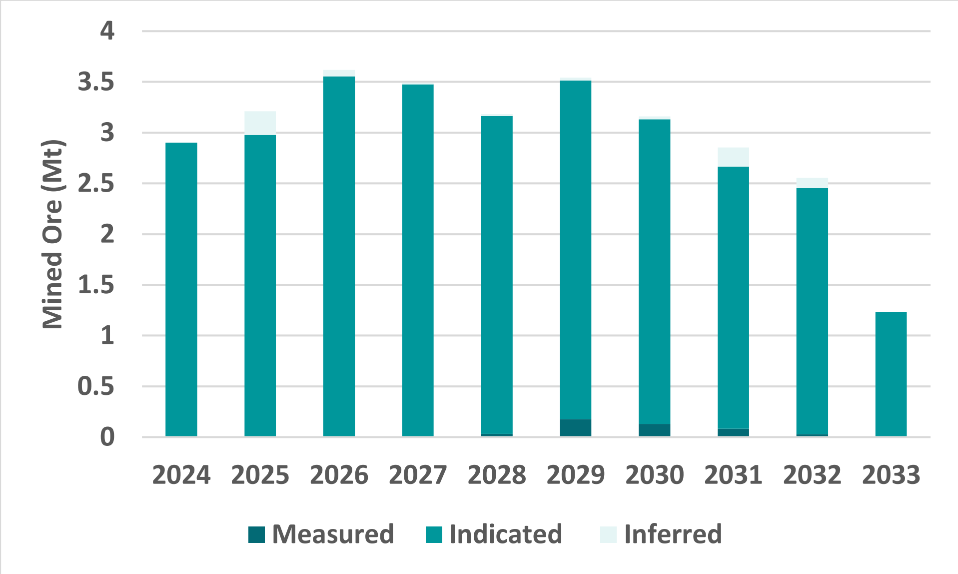
Figure 13a: Production Target Physicals



Note:

1. The production target referred to is based on Mineral Resource estimates which are classified as Measured (2%), Indicated (66%) and Inferred (32%).

Figure 13b: Production Target Mined Tonnes by Resource Category (Tailings, Open Pit, Underground)



Project Configuration

- <u>Process Design</u>

The feed to the processing plant will be a combination of free milling oxide/transition/sulphide material, refractory sulphide and historic tailings. Most of the feed to the comminution circuit will be refractory sulphide ore, with campaigns for free milling oxide/transition/sulphide ore. Tailings reclaim will be independent of the comminution circuit and will be fed through the scrubber circuit. The flow sheets for the different ore types are outlined below.

- Refractory sulphide ore: crushing, grinding, flotation, BIOX, leaching and gold recovery.
- Free milling oxide/transition/sulphide: crushing, grinding, leaching and gold recovery.
- Tailings retreatment: repulping, leaching and gold recovery.

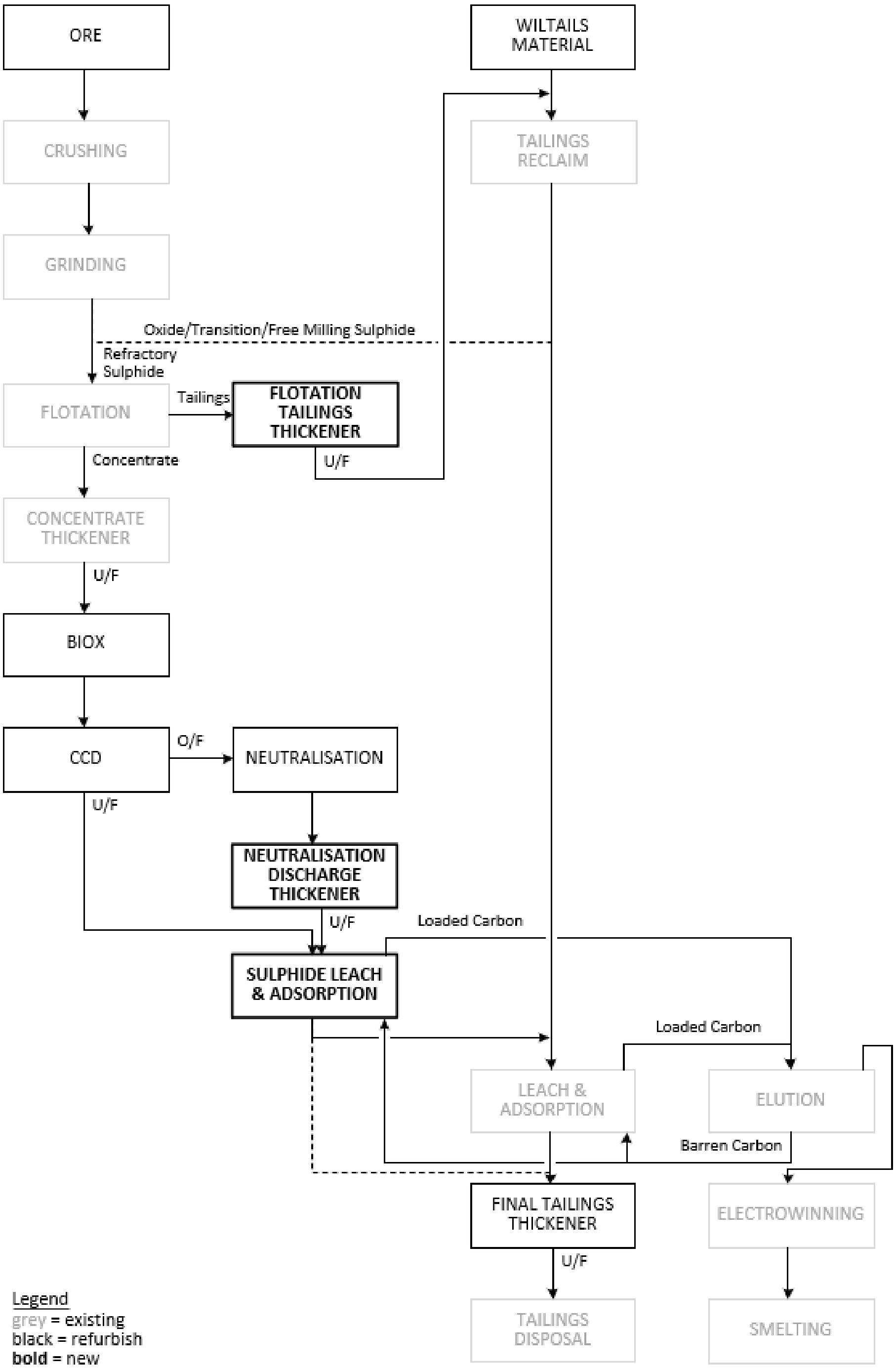
The design is to treat 750 ktpa of refractory sulphide ore, perform a flotation upgrade of the gold-bearing pyrite/arsenopyrite to approximately 20% sulphide sulphur, oxidation of the concentrate in the BIOX circuit, and leaching and gold recovery from the BIOX residue to produce gold doré. The key design criteria for the proposed ore processing are summarised below.

The throughputs represent an annualised rate for a given campaign, and the tailings discharge rate reflects the plan to increase the current permitted limit from 2.2 to 3.2 Mtpa.

The proposed processing plant is comprised of the following main process areas and presented below.

- Tailings reclaim (existing)
- Crushing (existing)
- Grinding (existing)
- Flotation (existing with new flotation tailings thickener)
- BIOX (refurbish)
- Counter Current Decantation (refurbish)
- Solution Neutralisation (refurbish and new neutralisation discharge thickener)
- BIOX residue leach/adsorption (demolish existing and replace with new)
- Tailings/free milling leach/adsorption (existing)
- Elution and smelting (existing)
- Carbon regeneration kiln (new required)
- Tailings disposal (existing with refurbished final tailings thickener)
- Reagents (some existing, some refurbish)

Figure 14: Proposed processing plant



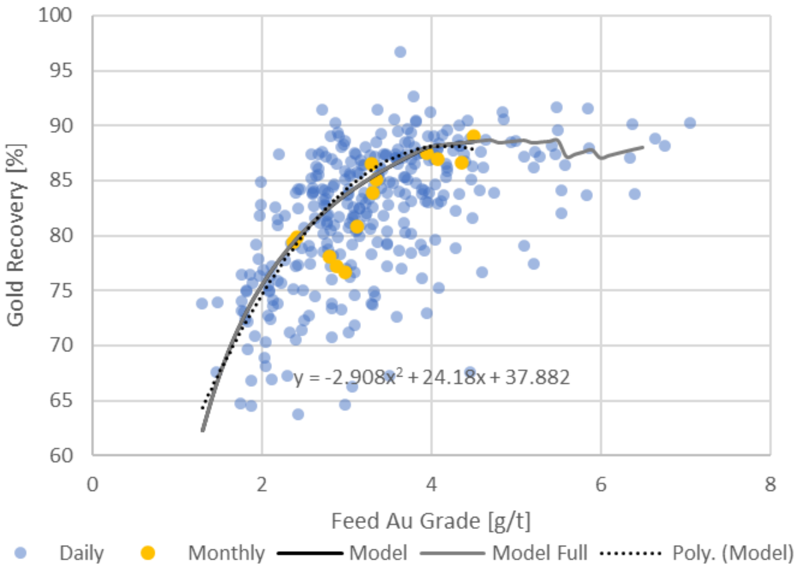
- Processing Flotation

In 2021, Wiluna constructed and commissioned a new flotation circuit as part of the Stage 1 upgrade to produce a gold-bearing concentrate. The flotation circuit was designed to treat 0.75 Mtpa of sulphide ore. The circuit operated for most of 2022. With respect to this PFS, Wiluna effectively ran a full-scale test program, ie concentrate production, for most of 2022.

Considering that Wiluna already had a BIOX circuit, the BIOX circuit was reviewed and found to have favourable economics at a sulphide throughput of 0.75 Mtpa. The existing crushing, grinding and flotation circuits would recover a sulphide concentrate that would be oxidised by the BIOX circuit before leaching and gold recovery to produce gold doré.

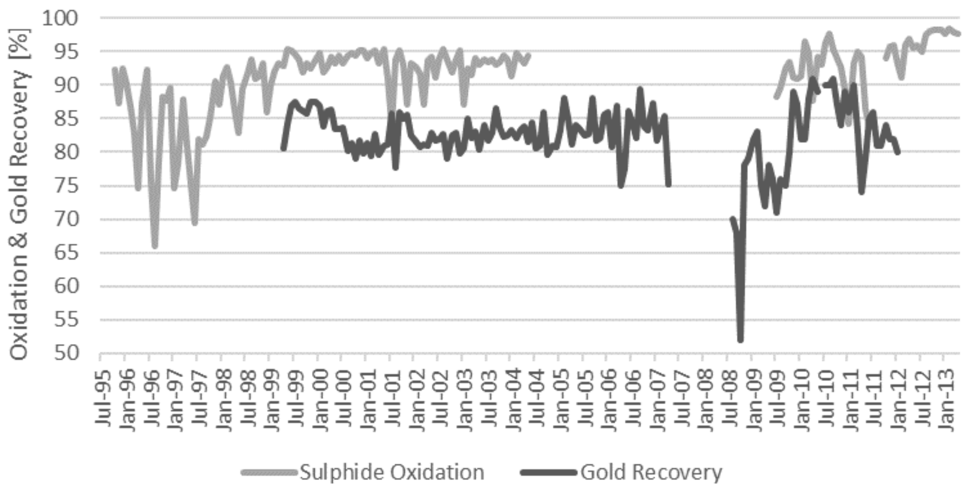
Average flotation recovery is 87% and BIOX recovery is 96%, to give an average overall recovery of 83.5% of fresh feed to gold doré. The flotation recovery from the 2022 operation that forms the basis of the flotation recovery relationship is shown in the figure below.

Figure 15: Daily and Monthly Reconciled Flotation Gold Recovery to Feed Gold Grade for 2022



The BIOX circuit was originally designed to treat 27.6 tpd of sulphide sulphur through six reactors and was later expanded to 35 tpd (~1,085 t/month) in the second half of 1996 through a total of nine reactors. The sulphide oxidation by the BIOX circuit was consistent and up to 95% as shown below. Overall gold recovery for the sulphide ore typically ranged between 80-85%.

Figure 16: Monthly Sulphide Oxidation and Overall Gold Recovery



Project Infrastructure

- Village Upgrade

A refurbishment and upgrade of the Wiluna village is required, with some accommodation blocks in poor condition. An upgrade of 25-four room modules has been allowed for at a capital cost of the upgrade is $7.7M.

- Wastewater Treatment

Wastewater onsite is currently collected and disposed of through either tanker removal or evaporation from a series of ponds. A centralised wastewater treatment facility is proposed at an installed cost of $1.5M.

- <u>Gas & Power</u>

Power generation at Wiluna is a combination of gas and diesel-fired generators. There are six gas generator sets for a combined 10.4 MW and three diesel generator sets for a combined 3.7 MW, as well as a 2 MW battery energy storage system for twelve-minutes of storage capacity. The generated electricity is distributed across the site.

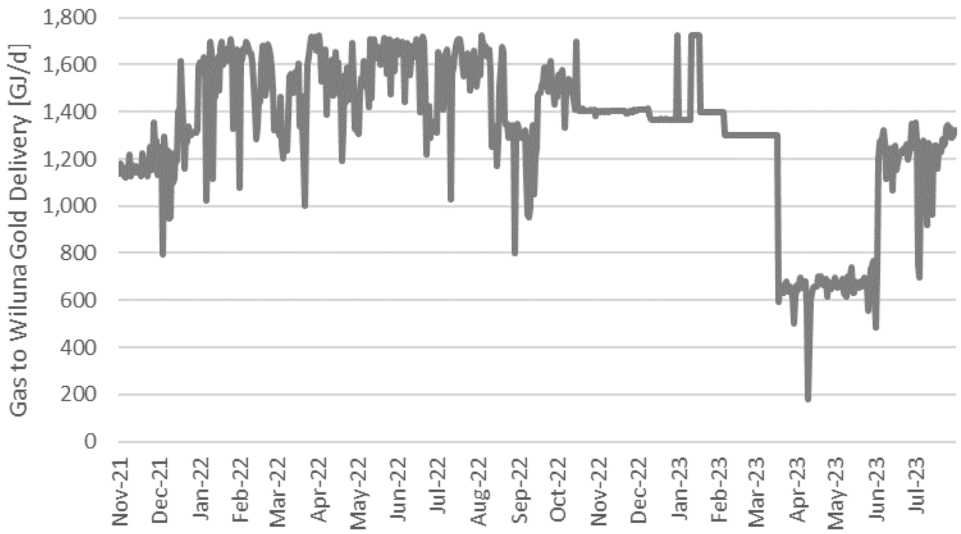
Gas is supplied and transported in accordance with a number of gas supply and gas transportation agreements. The agreements are extended on a two-year basis through variation agreements. Power is generated onsite in accordance with a power plant agreement.

The tailings reclaim scrubber is powered by a separate diesel generator. The site team plans to connect the scrubber circuit to the main power distribution. This would increase the site gas requirements but reduce the diesel consumption and hence overall cost.

- <u>Gas Supply and Transportation</u>

During the 2022 sulphide campaign, the daily gas requirements were consistently up to the daily allowance of 1.8 TJ/d. After subtracting the Fuel Gas and System Use Gas of 0.05-0.06 TJ/d each, the gas delivered to the Wiluna Gold Delivery Stream was consistently up to ~1.7 TJ/d below.

Figure 17: Daily Gas Exit at Wiluna Gold Delivery Stream from APA Contract Account



Previously, there was a capacity constraint in the GGP, which may have limited the ability to increase the MDQ with APA Group, however, this was alleviated by the North Goldfields Interconnector Pipeline which was completed in July 2023.

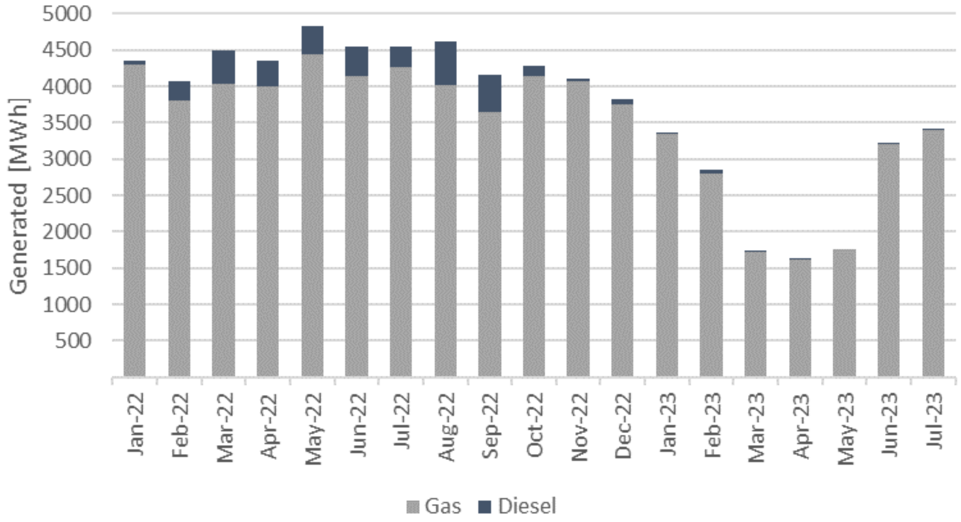
- <u>Power Generation</u>

During Apex operation from 2009-2013, the power supply was unreliable with numerous site-wide power outages on a frequent basis. This impacted the operation of the process plant as well as the underground, with frequent evacuations due to the loss of power. All generators were overdue for total or partial rebuilds which contributed to the unreliable power supply.

A new power plant facility was constructed in 2016 as part of the Build Own Operate Transfer power plant agreement with Contract Power Group, now Pacific Energy.

Most of the power is generated by the gas generators as shown below. During the 2022 sulphide campaign, site power averaged between 6-7 MW, which is within the capacity of the six gas generators, however, the gas supply and transportation was consistently up to the daily allowance. Hence, the diesel generators were used to supplement the power generation.

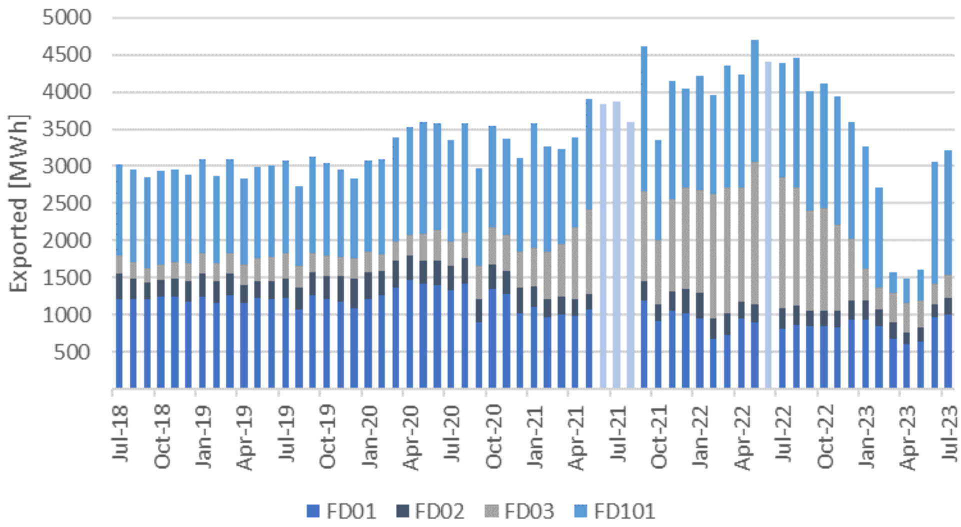
Figure 18: Power Generated by Generator Type (Source: Pacific Energy Monthly Report)



With the restart of the BIOX circuit and underground operations, the site power demand is expected to increase to approximately 12.2 MW, which is within the installed capacity of the generators onsite, although exceeds the capacity of the gas generators. It is recommended to install an additional one or two gas generators onsite, as although there is capacity onsite with the diesel generators, the cost of diesel is considerably higher. The gas supply and transportation agreements will also need to be increased.

The power required for the different areas is tracked by kWh readings on the feeders at the power plant. Feeder 01 is the combined process plant MCCs, Feeder 02 is for admin, laboratory and warehouse combined, Feeder 03 is the flotation circuit and underground combined, and Feeder 101 is the grinding mills combined. The monthly MWh for the four feeders is shown below.

Figure 19: Monthly Power Exported by Feeder (Source: Pacific Energy Monthly Report)



- <u>Site Wide Water Balance</u>

Current Water Supply

Water at Wiluna is sourced from groundwater, which is managed in line with licences issued by the Department of Water and Environmental Regulation (DWER) pursuant to Section 5C of the Rights in Water and Irrigation Act 1914. The 5C licences are listed in Table 20 with the ten-year licence validity for the Wiluna area expiring in June 2024.

Table 21: DWER 5C Licences for Groundwater Abstraction

Source	Licence Number	Licence Expiry	Annual Limit (m³)
Eastern Borefield	GWL 57622(7)	05/06/2024	1,500,000
Caledonian Pit	GWL 56080(7)	05/06/2024	150,000
Wiluna Mine Area	GWL 159247(5)	05/06/2024	2,365,200
Matilda Mine Area	GWL 182219(2)	08/05/2026	726,000
Galaxy Mine Area	GWL 182234(2)	15/03/2026	130,000

The primary source of water for the processing plant and mine village is the eastern borefield, which supplies low and medium chloride water. The Caledonian Pit also supplies low-salinity water. The water from the Wiluna, Matilda and Galaxy mine areas is hypersaline water from the open pits and underground dewatering operations.

Wiluna used to hold a 5C licence to abstract 1,130,000 m³ per annum of groundwater at the Southern borefield (GWL 167013(3)), but this was sold to Salt Lake Potash Ltd in 2019 as part of a tenement sale agreement. The annual abstraction volumes for the April to March reporting period are provided in Table 22. The mine dewatering volumes are provided in Table 21 above. As observed, abstraction rates from the eastern bore field have been below the licenced limit of 1.5 GL/y.

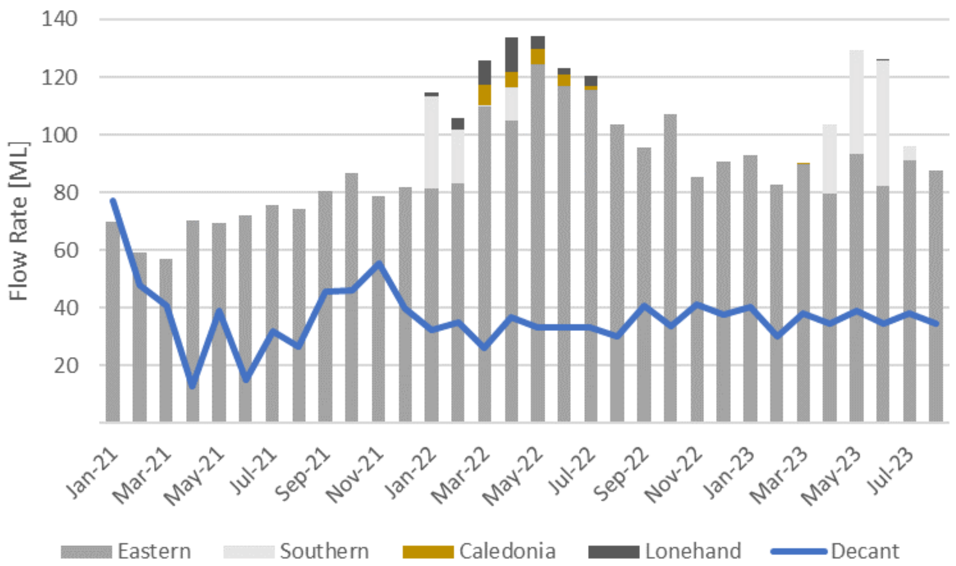
Table 22: Annual Water Abstraction in Gigalitres

Year Ending	Licence	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23
Eastern Borefield	1.500	0.859	0.849	0.989	0.891	0.810	1.209
Caledonian Pit	0.150	-	-	-	-	0.007	0.016

The monthly abstraction by source is shown in Figure 20 based on daily flow meter readings recorded by the processing plant. The annual licence limit for the eastern borefield is 1.5 GL/y, which equates to 125 ML per month. While there was a steep increase in water consumption during the 2022 sulphide campaign and while ~125 ML/month was demonstrated, abstraction was not sustained at this rate. Additional bores have been drilled and the site team are currently installing the pumps, pipeline, power and telemetry to increase and sustain abstraction at the licensed limit. Water supply from the Caledonian pit is limited, and although the licence is 0.15 GL/y, annual abstraction has been well below the limit. Water was pumped for a few months in 2022 before it was drawn down. Available data from the early 2000s also recorded low rates of 0.03 GL/y.

Decant return water from the TSF has been consistent and averaged 35 ML/month (~50 m³/h). Historically, decant return has averaged ~30% of the volume discharged to the TSF. A small volume of mine dewatering water from the Lone Hand pit was also sourced during 2022.

Figure 20: Monthly Water Flows Recorded by the Processing Plant from 2021



Future Water Requirements

The processing plant will treat 0.75 Mtpa (94 tph) of refractory sulphide feed through flotation, BIOX and leach/adsorption and up to 3.2 Mtpa (400 tph) of tailings retreatment through leach/adsorption to produce gold doré.

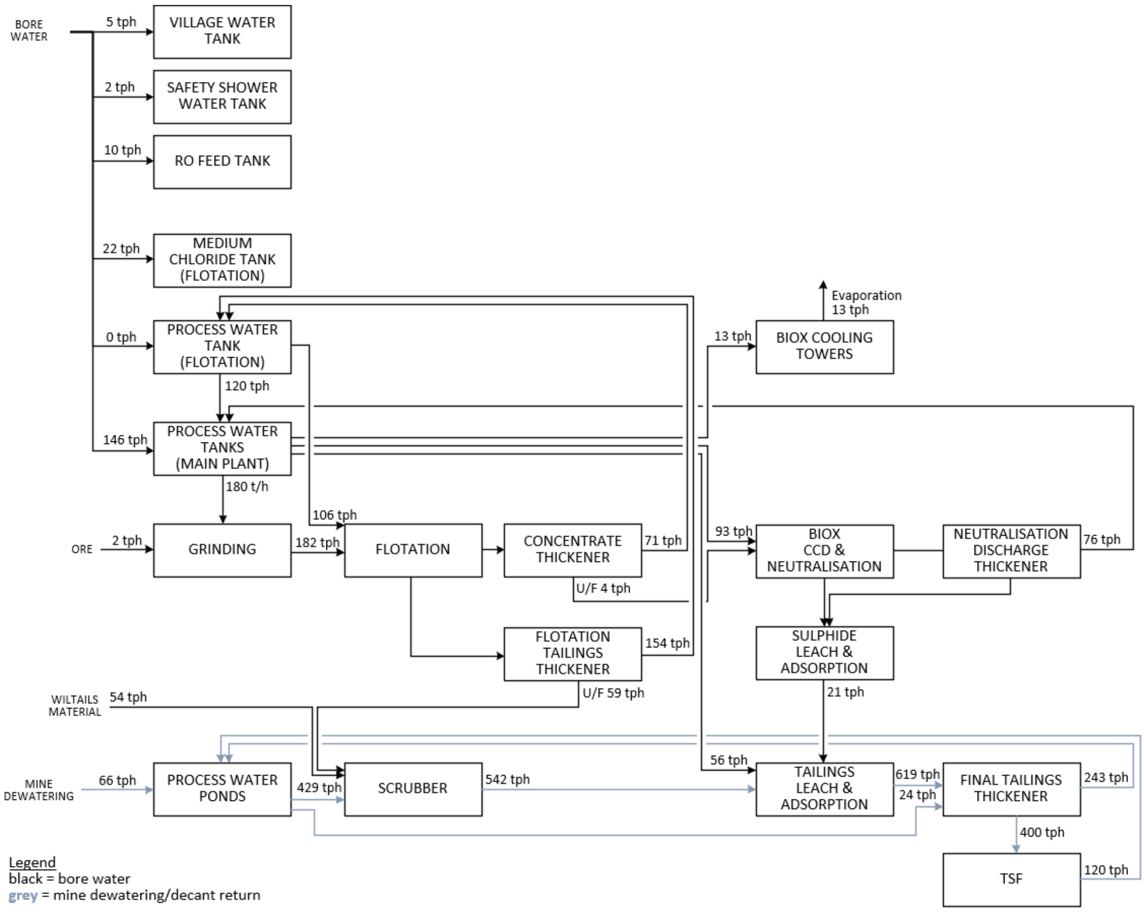
In restarting the BIOX circuit, decant return water must be kept separate from the water for the BIOX circuit as the residual cyanide is toxic to the bacteria. The bacteria are also intolerant to high chloride concentrations, which prevents the use of the hypersaline mine dewatering. Hence, the eastern borefield water would be used for the grinding, flotation and BIOX circuits, and the TSF decant return and mine dewatering water used for tailings retreatment.

Based on available data from the 2000s, the previous BIOX operation sourced >50 ML/month from the southern borefield and approximately 70 ML/month from the eastern borefield. The previous operation also had a flotation tailings thickener to recycle water within the processing plant. As the southern borefield is no longer available due to the tenement sale, the eastern borefield needs to offset the supply from the southern borefield.

The site water balance can be maintained by sourcing 125 ML/month (~187.5 m³/h) from the eastern borefield and adding three more thickeners to increase the recycling and reuse of water within the processing plant. These include a flotation tailings thickener and a neutralisation discharge thickener for the grinding, flotation and BIOX process, and a final tailings thickener for the tailings retreatment process.

The site water balance is shown below.

Figure 21: Site-Wide Water Balance



The water balance shows the grinding, flotation and BIOX process and village consuming 185 m³/h, which is effectively the licenced limit of 187.5 m³/h (125 ML/month). Hence, maintaining the water balance is very dependent on abstracting water from the eastern bore field to the licenced limit. As above, it was noted that recent abstraction from the eastern borefield had not sustained 125 ML/month (~187.5 m³/h), although the site team are working through upgrades to increase and sustain abstraction at the licenced limit.

With the increase in throughput to 3.2 Mtpa, the water required for tailings retreatment is 430 m^3/h. While the TSF decant return also increases with the increased throughput, the return is ~30% of the volume to the TSF. A final tailings thickener is proposed as this would recover 243 m^3/h for immediate re-use rather than ~30%. There would be an additional 120 m^3/h of TSF decant return as well. Without a final tailings thickener, the TSF decant return would be limited to 185 m^3/h and insufficient for the planned tailings retreatment rate. The TSF decant return previously demonstrated flow rates close to 120 m^3/h (80 ML/month) in January 2021, but will be confirmed in the next stage of study that the pump and piping system can sustain these rates.

Table 23: Water Requirements at Combined Throughputs of 200, 300 & 400 tph

	Units	200 tph	300 tph	400 tph
Ore Tonnes	dtph	93.8	93.8	93.8
Low/Medium Chloride Bore Water	m^3/h	185	185	185
Tailings Reclaim Tonnes	dtph	104.7	204.4	304.0
Process Water Pond to Scrubber	m^3/h	189	309	429
Final Tailings Thickener Overflow	m^3/h	152	198	243
TSF Decant Return	m^3/h	60	90	120
Mine Dewatering Water Required	m^3/h	N/A	21	66
Mine Dewatering Water Excess	m^3/h	100	79	34

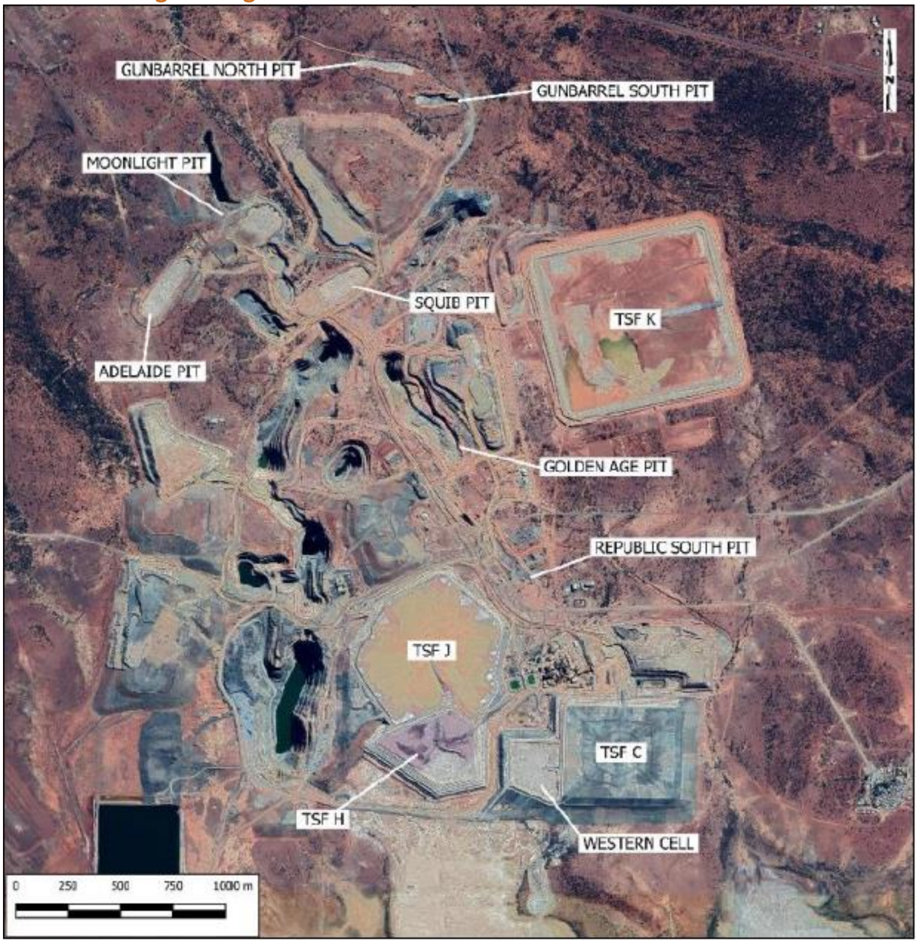
If there is a restart of underground mining, the requirements for low/medium chloride water for underground operations need to be identified and incorporated into the site water balance.

There is a Brackish Water Reverse Osmosis (BWRO) unit at the flotation area that has not been used since the sulphide flotation campaign finished at the end of 2022. The BWRO unit was used to treat medium chloride water from the eastern borefield to high-quality water (200 ppm Total Dissolved Solids (TDS)), which was used to wash the flotation concentrate to reduce the contained chloride. The BWRO unit is designed to treat 1,000 m^3/d (~40 m^3/h) of brackish water <5,000 ppm TDS, and hence unable to treat the hypersaline mine dewatering water. There is an opportunity to upgrade the BWRO to a Sea Water RO (SWRO) unit to treat mine dewatering water and supply additional low chloride water. A SWRO unit can treat saline water <40,000 ppm TDS.

- Tailings Storage

The tailings facilities are spread across the Wiluna mine site, with several paddock tailing storage facilities and abandoned pits used for life of production to date. The tailings facilities are shown below.

Figure 22: Aerial View of Tailings Storage Facilities at the Wiluna Mine Site



The current storage facility is TSF K, which has been in service since June 2020. There has been one crest lift approved from 512 to 518.5 mRL, which is expected to reach capacity by Q3 2025 based on the current planned throughput. There is scope for further lifts to the final elevation of 537 mRL.

- Future Tailings Storage

The LOM tailings for the Reserve Case are 26.9 Mt and the Production Target is 30.97 Mt.
Options for tailings storage for both cases were reviewed and are discussed below.

- TSF K

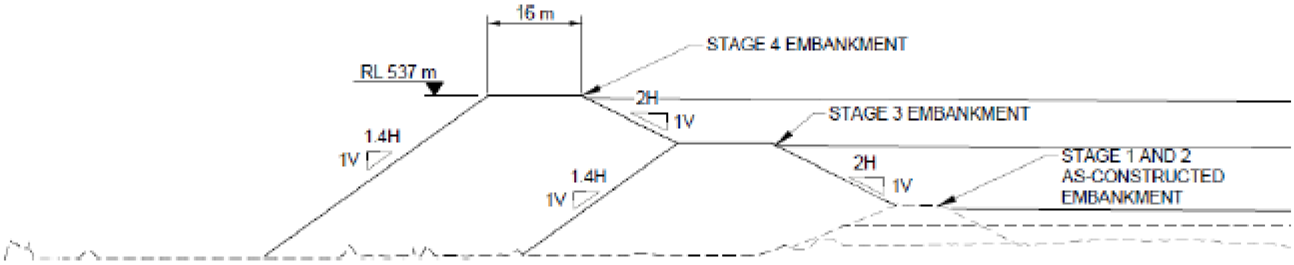
The original design for TSF K was in four stages, with three downstream raises to a final elevation of 537 mRL. Golder Associates Pty Ltd (Golder) completed a Design Report for TSF K in January 2019 before proceeding with the detailed design for Stage 1.

The fill volume for the downstream raised embankment is significant and incurs a considerable cost to construct. As part of WMC's 2022 Stage 3 PFS, Golder was engaged to conduct an options assessment for the future lifts of TSF K above 518.5 mRL. The planned throughput was 2 Mtpa. Four options were presented as below:

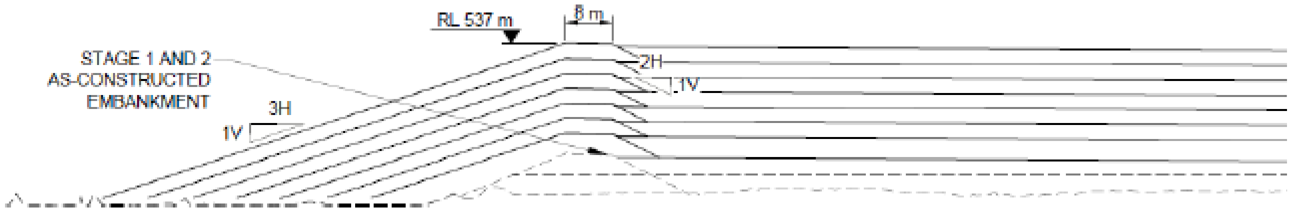
- Option 1: Downstream raises.
- Option 2: Centreline raises in 2.5 m lifts.
- Option 3: New embankment to the approved footprint and upstream raises in 2.5 m lifts.
- Option 4: Upstream raises from the existing embankment in 2.5 m lifts.

The cross-sections for each of the options are shown in **Figure 23** below.

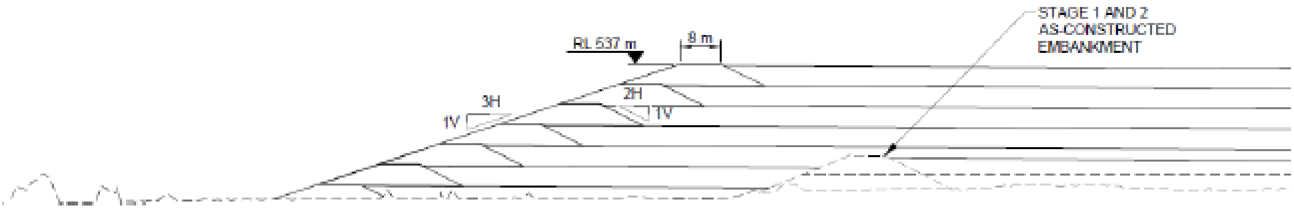
Option 1



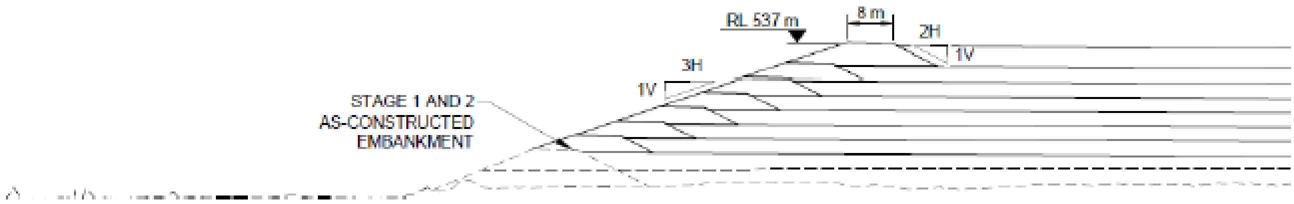
Option 2



Option 3



Option 4



- TSF K Options Cross-sections

WSP, formerly Golder, was engaged in August 2023 to update the options assessment for the planned throughput of 3.2 Mtpa. The embankment volumes, storage capacities and rate of rise for the different options are summarised below.

Table 24: TSF K Options Assessment Embankment Volumes and Storage Capacities (after 518 mRL)

Option	Embankment Fill Volume (m³)	Storage Capacity (Mt)	Storage Life (years)	Average Rate of Rise (m/y)
1	6,300,000	21.4	6.5	N/A
2	4,800,000	18.8	5.8	3.3
3	1,900,000	27.0	8.3	2.4-2.9
4	1,000,000	16.5	5.1	3.3-4.3

Table 25: TSF K Options Cost Estimate Assuming A$20/m³ of Embankment Volume

Option	Embankment Fill Volume (m^3)	Storage Capacity (Mt)	Undiscounted Cost (A$M)	Cost per Tonne Stored (A$/t)
1	6,300,000	21.4	126	5.89
2	4,800,000	18.8	96	5.11
3	1,900,000	27.0	38	1.41
4	1,000,000	16.5	20	1.21

- In-Pit Storage Options

Wiluna has historically conducted in-pit tailings backfill including Adelaide, Golden Age, Gunbarrel North, Gunbarrel South, Moonlight, Republic South and Squib. The Republic South in-pit tailings have been closed and capped, and the Adelaide, Moonlight and Squib pits are possible deposits for tailings reprocessing. The Golden Age in-pit tailings were mostly remined in 2020-2021 in preparation for mining of a Golden Age Cutback.

Given the planned throughput increase to 3.2 Mtpa, in-pit tailings have been reviewed to supplement the options of TSF K.

In WMC's 2022 Stage 3 PFS, a cutback of Golden Age was considered as was in-pit tailings storage in the existing Golden Age pit. As of November 2023, the Golden Age Cutback has not been mined and is not in the current mine plan. The storage capacity of the existing Golden Age pit was estimated to be ~1.7 Mt of tailings. In-pit tailings storage in the Golden Age pit is a viable short-term option and supports the capacity required for ore reserves.

The Matilda pits were reviewed as part of this PFS for additional tailings storage. An estimate for the capital cost was estimated to be in excess of $10M. It is also noted that the current published mineral resource is 2.14 Mt at 2.13 g/t for 147 koz of contained gold would be sterilised by in-pit tailings. Developing in-pit tailings storage at Matilda would require hydrological and geotechnical work and permitting approvals.

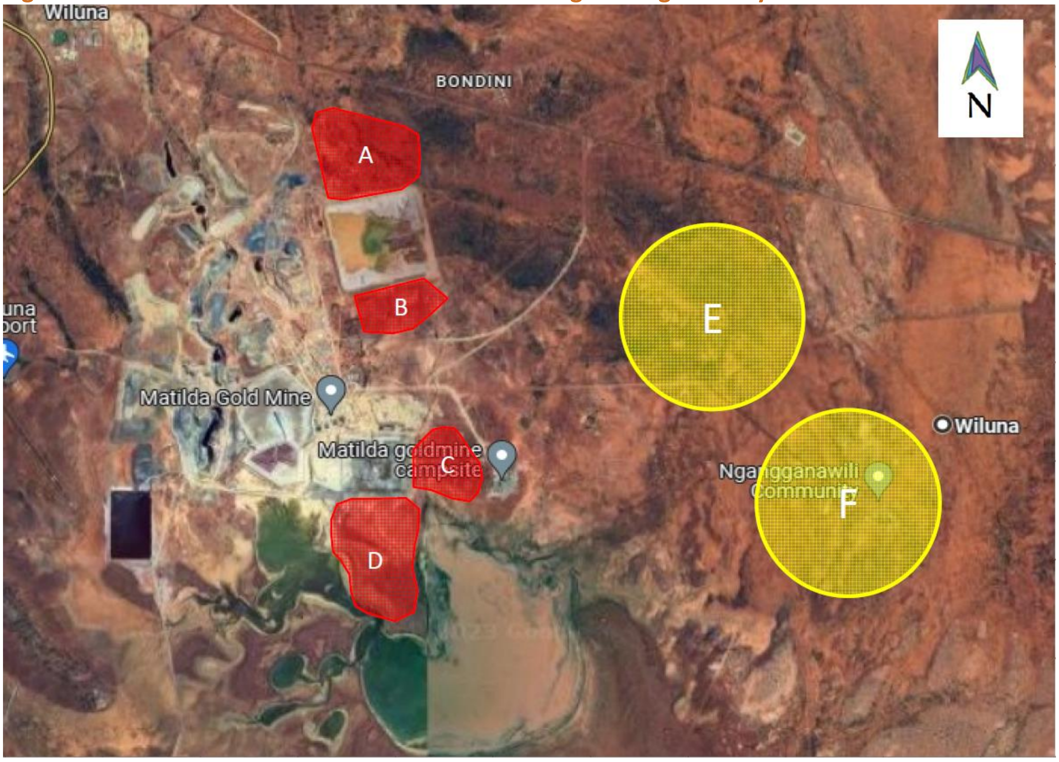
The most viable option for in-pit tailings in the short term are the Golden Age and Matilda pits. The capacity of the Golden Age pit is relatively small at approximately 1.7 Mt, although could be used for the remaining 0.8 Mt required for the Reserve Case. The volume of the Matilda pits is considerable and could be used to supplement TSF K for the Production Target. It should be noted, however, that using the Matilda pits as in-pit tailings will sterilise the current known and potential future mineral resources. Further work on tailings storage at Matilda pits will continue in the next phase of the project.

- New Facility "TSF L"

The option of a new above ground facility to supplement TSF K was developed, with the new facility nominally referred to as TSF L. A scoping study was completed in December 2023, which included onsite scoping of possible locations for a new TSF.

Following an initial screening of six different sites as shown below, two sites were shortlisted for conceptual design and an economic trade-off was conducted. Following the review, Site A was selected as the preferred location. Site A was designed adjacent to TSF K so that one side of TSF K could be used as a common embankment and reduce the construction cost as only three sides would need to be constructed. Site A was designed in stages with a combined storage capacity of 16 Mt. The construction cost was estimated to be $19.8M (±35%).

Figure 24: Locations for a New Above Ground Tailings Storage Facility



The design from the scoping study has been used to review and evaluate different combined options to supplement TSF K. The detailed design for the new TSF will be progressed in the next stage of study.

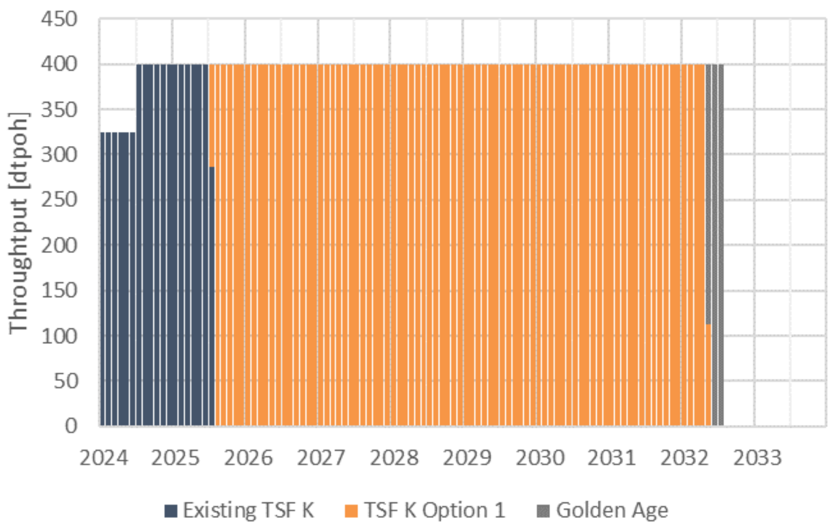
- Recommended Option

Reserve Case

The Reserve Case used TSF K Option 1, supported by in-pit tailings disposal in Golden Age pit. Option 1 sustains throughput at 3.2 Mtpa for the LOM. The combined storage capacity of the existing TSF K (4.7 Mt as of the start of January 2024) and Option 1 (21.4) is 26.1 Mt, with the remaining 0.8 Mt to be stored in the Golden Age pit. The capacity of the Golden Age pit is estimated to be 1.7 Mt.

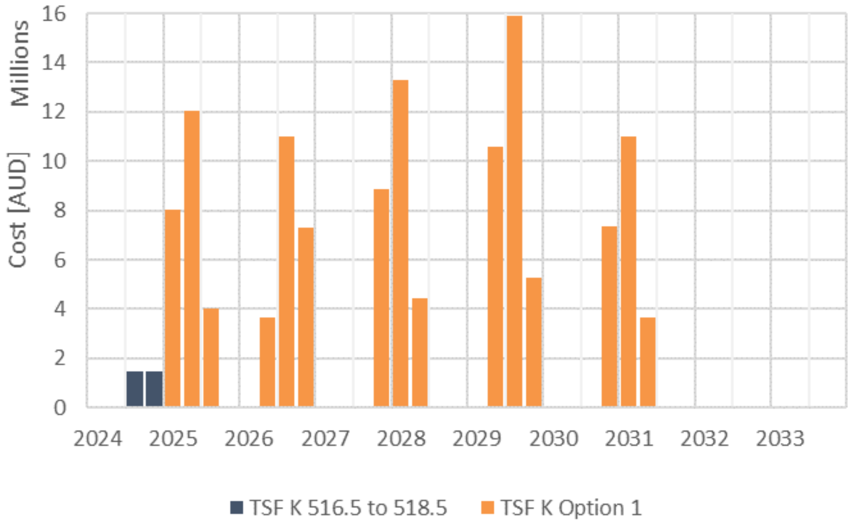
For illustrative purposes, TSF K Option 1 is shown to be filled first before filling Golden Age as shown below.

Figure 25: Throughput for Combined TSF K Option 1 and Golden Age In-Pit



The estimated quarterly cost profile for Option 1 is shown below.

Figure 26: Quarterly Estimated Capital Cost for TSF K Option 1 (and Golden Age)



- Production Target

The Production Target used Option 4 (Upstream raises from the existing embankment in 2.5 m lifts) and a new three-sided TSF. This was found to have the lowest capital cost but does have some timing risk for permitting and approval for the new TSF. This risk can be mitigated by the following options:

  - The Golden Age pit could be used for in-pit tailings storage for approximately six months (1.7 Mt).
  - A downstream raise of TSF K could be completed to 522.5 mRL in the short term. After the new TSF is approved and constructed, subsequent raises of TSF K could change to a more cost-effective option.

Capital Cost Estimates

- Underground Mining Capital Costs

There is a significant inventory of electrical, pumping and ventilation equipment on site owned by Wiluna. Except for essential equipment required underground for care and maintenance, almost all of this equipment is on the surface, with some items off-site for assessment and repair.

The infrastructure equipment requirements for the mining program have been broadly estimated. Equipment available onsite and off-site for repair has been extracted from the site asset register, and the shortfall has been included in the inventory of capital equipment required for purchase. As part of further studies, more definitive costings for capital items will need to be obtained for a more accurate figure for capital requirements.

Capital has been allowed for the purchase and installation of primary fans for Bulletin, Happy Jack North and Happy Jack South. There is currently an overhead powerline running from the powerhouse to the Bulletin. Capital has been allowed for a spur line to the Bulletin and Happy Jack areas to enable direct power feed from the powerhouse, negating the requirement for local diesel gensets for all surface mine power and underground power at Happy Jack South.
Allowance has been included for high voltage switching and surface and underground reticulation, including substations and HV cables.

Table 26: Summary Underground Capital Costs

(in '000s)	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Reserve Case	$ 16,160	$ 8,380	$ 4,819	$ 2,084	$ 222	$ 655	
Production Case	$ 16,160	$ 7,992	$ 4,810	$ 2,178	$ 524	$ 131	$ 524
Case3	$ 16,160	$ 7,992	$ 4,810	$ 2,178	$ 524	$ 655	

- Open Pit Mining Costs

There were no capital cost requirements for open pit mining. However, for the optimization, mining costs for the Wiluna open pit mine optimization were generated from first principles using cost estimates from the most recent Wiluna costs with indexing to 2023. The mining cost includes contract mining, grade control, load and haul and mining-related site operational staff. The costs are based on Caterpillar 777 trucks (or similar) and the associated excavator fleet. A mining cost of $4.95 /t (inclusive of all costs) was used in the optimization.

- Tailings Re-mining Capital Costs

There are no additional capital cost requirements for tailings re-mining. The reclaim scrubbing trommel plant and associated materials handling infrastructure has recently been completed (2023). Sustaining capital of 5% of mining operating cost has been applied to cover mining equipment costs.

- Processing Capital Cost Estimate

The capital cost estimate for the Biox refurbishment and ancillary work was developed by Mincore to an AACE Class 4 estimate with an accuracy level of ±25%. The estimate is presented in Australia Dollars (AUD), with a 2023 Q3 base date.

Table 27: Capital Cost Estimate Summary

Plant Area	Cost (A$M)
Area 338 – Flotation Tailings Thickener	1.22
Area 333 – BIOX	15.13
Area 334 – CCD	1.85
Area 336 – Neutralisation	1.75
Area 337/339 – Reagents	1.43
Area 304 – BIOX Residue Leach/Adsorption	2.63
Area 306 – Final Tailings Thickener	3.16
Subtotal Direct Cost	27.15
EPCM Cost (20% Direct Cost)	5.43
Total Estimated Cost	32.58
Contingency on Total Estimate (20%)	6.52
Total Estimate	39.10
Owner's Cost (5%)	1.95
Total Cost	41.05

- Tailings Capital Cost Estimate

Four options were examined:

- Option 1: Downstream raises.
- Option 2: Centreline raises in 2.5 m lifts.
- Option 3: New embankment to the approved footprint and upstream raises in 2.5 m lifts.
- Option 4: Upstream raises from the existing embankment in 2.5 m lifts.

The Reserve Case used TSF K Option 1, supported by in-pit tailings disposal in Golden Age pit. Option 1 sustains throughput at 3.2 Mtpa for the LOM. While Option 1, see below, is the technically recommended option for a throughput of 3.2 Mtpa it also incurs the highest construction cost due to the significant embankment volume of 6,300,000 m³. For comparison, the embankment volume for the crest lift from 512 to 518.5 mRL was 611,000 m³ at an estimated cost of A$13.16M as per WMC's Capital Expenditure Request. This equates to $21.53/m³ of embankment volume and $2.19/t of tailings stored. Assuming a cost of $20/m³, which is comparable with some of the previous TSF J lifts, an estimate of the construction cost for each option is provided in the table below.

Table 28: TSF K Options Cost Estimate Assuming A$20/m³ of Embankment Volume

Option	Embankment Fill Volume (m³)	Storage Capacity (Mt)	Undiscounted Cost (A$M)	Cost per Tonne Stored (A$/t)
1	6,300,000	21.4	126	5.89
2	4,800,000	18.8	96	5.11
3	1,900,000	27.0	38	1.41
4	1,000,000	16.5	20	1.21

- Combined Options

As TSF K alone does not have enough storage capacity for the Production Target, especially at a rate of rise of 2.5m / y, several different combined options have been considered. There are different options for TSF K, which can be supplemented by a new above ground TSF or Matilda in-pit tailings.

A summary of the shortlisted options is shown below.

Table 29: TSF Combined Options Storage Capacity and Cost Estimate

Option	Tailings Stored (Mt)				Undiscounted Cost (A$M)	Cost per Tonne Stored (A$/t)
	Existing TSF K	TSF K Option	TSF L /In-Pit	Combined		
Option 1 + New TSF	4.7	21.4	6.3	32.5	142	4.38
Option 3 + New TSF	4.7	19.2	9.6	30.8	49	1.46
Option 4 + New TSF	4.7	16.5	9.6	32.5	38	1.24
Option 3 + Matilda	4.7	16.0	11.0	31.7	44	1.38

As previously stated the Reserve Case used TSF K Option 1, supported by in-pit tailings disposal in the Golden Age pit. Option 1 sustains throughput at 3.2 Mtpa for the LOM.

- Production Target

The recommended option for the Production Target is Option 4 and a new TSF. This was found to have the lowest capital cost (See TSF Combined Options Storage Capacity and Cost Estimate above) but does have timing risk for permitting and approval for the new TSF. This risk can be mitigated by the following options:

  - The Golden Age pit could be used for in-pit tailings storage for approximately six months (1.7 Mt).
  - A downstream raise of TSF K could be completed to 522.5 mRL in the short term. After the new TSF is approved and constructed, subsequent raises of TSF K could change to a more cost-effective option.

- Overall Capital Cost comments

Plant capital costs for the BIOX refurbishment are based on the PFS cost estimate performed by Mincore Pty Ltd.

The rehabilitation provision lodged in June 2023 accounts was $45.9M. An incremental closure cost of $2M was used at the completion of mining and processing for the additional closure costs associated with the work in this study. This is mainly from the open pits. The $2M is considered conservative as the cost of closure of the open pits in the closure cost model is approximately $0.85M

The capital costs used in the economic assessment are summarised below.

Table 30: Growth Capital Costs

Growth Capital Costs	UOM	Value
Processing – BIOX	A$	$41,050,000
Underground Mining	A$	$18,279,000
Underground Drilling Prior to Restart	A$	$4,800,000
G&A	A$	$9,200,000
Incremental Closure	A$	$2,000,000

Sustaining capital consisted of tailings dam lifts, which were estimated based on Option 4 for TSF K along with an additional tailings dam, as discussed. Other plant-sustaining capital costs are captured in annual maintenance.
An allowance of 5% of the operating cost for mining tailings was made for sustaining capital for the mine fleet.
G&A sustaining capital was applied during mining and consisted of village maintenance and upgrades, admin, light vehicles, and emergency response equipment. No allowance for open pit mining sustaining capital was made because contract mining was used.

Table 31: Sustaining Capital Costs

Sustaining Capital Costs	UOM	Value
Tailings facility	$M	38.0M
Mining tailings	% Operating Cost	5
G&A (during UG/OP mining)	A$ per year	$700,000

Operating Cost Estimates

- Underground Mining Operating Costs

Underground mining operating costs have been derived from analysis of the Byrnecut Contract actual costs for May and June 2022. At this time the underground mine was producing between 47k to 60k ore tonnes/month (at an annualised rate of 570kpa to 770ktpa) and between 660-695m of Lateral Development (inclusive of Capital Stripping m equivalent). Fuel usage was derived from a first principles estimate based on diesel equipment used in the mine and checked against actual fuel usage from the non-generator usage from the Bulletin Diesel Tanks. Non-diesel usage at Bulletin totalled 135kl and 147kl for May and June, while the first principle estimates totalled 143kl/month. Fuel costs were not part of the Byrnecut contract and were added to the relevant activity based on the equipment numbers assigned to each activity.

Activities were designated as follows:

- Development
- Production
- Mine Services – Pumps
- Electrical
- General
- Haul – Grader
- Mine Services – IT
- Load
- LV (Light Vehicle)
- Chargeup
- Haul – Truck
- Mine Services – Trucks
- Vent
- Overheads
- Mechanical (Un-allocated)
- Labour (Un-allocated)
- Mine Services (Un-allocated)

Table 32: Summary Underground Operating Costs (Contract) (Production Case)

Item	UOM	Amount (Variable)	Amount (Fixed)	Amount ($/t ore)
Development	$/m	$4,656		$47.27
Stope Drilling	$/m drilled	$89.30		$20.17
Bogging/Loading	$/t material	$9.26		$13.42
Hauling	$/t.km	$2.02		$21.36
Overheads / Owners Cost	$pa		$101,220,000	$51.79
Mine Services	$/t ore	$4.30		$4.30
Total (Excl Dev.)	**$/t ore**			**$111.0**
Total (Incl Dev.)	**$/t ore**			**$158.3**

- <u>Underground Mining Owner's Costs</u>

In addition, the Owner's Costs have been calculated based on the following:

  - Staff salaries plus assumed on-costs of 60%, including construction/contract management
  - Electrical power for mining operations (based on power from gas turbine generation at $0.14/kWh)
  - Mine design software purchase and maintenance/support costs as per schedule
  - Light vehicle maintenance (assumed at $1,500/month)

Table 33: Summary of Underground Mining Owner's Costs

(in '000's)	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Reserve Case	$ 50,315	$ 8,507	$ 12,832	$ 12,824	$ 12,094	$ 4,058	
Production Case	$ 62,368	$ 8,776	$ 13,309	$ 13,546	$ 13,146	$11,727	$ 1,866
Case3	$ 56,818	$ 8,776	$ 13,309	$ 13,546	$ 13,146	$ 8,042	

- <u>Open Pit Mining Costs</u>

For the optimization, mining costs for the Wiluna open pit mine optimization were generated from first principles using cost estimates from the most recent Wiluna costs with indexing to 2023. The mining cost includes contract mining, grade control, load and haul and mining-related site operational staff. The costs are based on Caterpillar 777 trucks (or similar) and the associated excavator fleet. A mining cost of $4.95 /t (inclusive of all costs) was used in the optimization.

- <u>Tailings Re-mining Operating Costs</u>

The operating costs for the tailings re-mining assumes the following:

  - 2024 – 2024 Budget costs, based on 2023 operating costs
  - 2025/2025+ - Shared overhead and ancillary equipment with Open Pit mining
  - 2030/2030+ - Shared overhead in conjunction with Underground mining

The estimated costs are summarised below.

Table 34: Tailings Re-claim Operating Costs

Item	UOM	Cost
2024	$/t	$5.97
2025-2029	$/t	$2.47
2030 +	$/t	$4.95

- <u>Operating Cost Estimate</u>

The processing operating cost estimate for this PFS has been developed to a pre-feasibility study level accuracy of ±25%. The costs have adapted and incorporate existing processing operating costs at Wiluna and represent the overall processing cost for each flow sheet type. Costs have been estimated for the different flow sheets and are presented as annualised and on a respective per-tonne basis.

Summary of Estimate

The operating costs were estimated by reviewing previous:

  - Resourcing levels and current position salaries.
  - Site gas and power demand and their allocation to processing.
  - Reagent consumption and unit costs for the 2022 flotation and recent free milling campaigns.
  - Maintenance consumables costs.

A summary of the operating cost by processing type is shown below.

Table 35: Operating Costs by Processing Type

Type	Unit	Value
Tailings Retreatment (Grinding Circuit)	A$/t tailing	15.20
Free Milling	A$/t ore	22.96
Sulphide Flotation	A$/t ore	39.78
BIOX	A$/t concentrate	303.64
Tailings Retreatment (Scrubber Circuit)	A$/t tailing	5.94

In developing the operating cost estimates, the focus was on the restart of the sulphide flotation and BIOX circuits, as Free Milling is the established process onsite. However, the same methodology was also applied for Free Milling to calibrate and check the method and compare it against recent actual processing costs.

The costs to operate the tailings retreatment circuit were considered as a separate cost basis. The costs to operate the scrubber and leach/adsorption circuit were separated from the costs for the main processing plant as the scrubber circuit can be turned on and off as required.

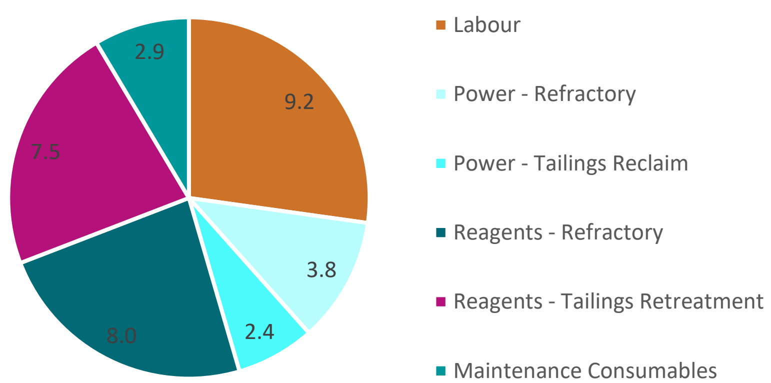
A summary of the operating cost to treat 750 ktpa of refractory sulphide ore and up to 3.2 Mtpa of tailings retreatment is shown below in table and graphical form.

The costs of reagents are the largest contributor to the processing cost, particularly the tailings retreatment, although it is noted that the tailings retreatment costs are high because of the high throughput.

Table 36: Operating Cost Estimate Summary for 0.75 Mtpa Refractory Ore and 3.2 Mtpa Tailings Retreatment

Item	Unit	Value
Labour	$M/y	14.47
Power	$M/y	12.13
Reagents & Consumables	$M/y	24.76
Maintenance Materials	$M/y	6.40
Total Processing Cost	**$M/y**	**57.76**
Unit Cost for Comminution + Flotation	$/t Feed	39.78
Unit Cost for BIOX	$/t Concentrate	303.64
Unit Cost for Tailings Retreatment	$/t Feed	5.94

Figure 27: Operating Cost Summary ($M/y)



- <u>Calcrete Cost</u>

Calcrete is a neutralising agent that can be mined on leases owned by Wiluna. Calcrete was previously used during the past BIOX operation and it is proposed to use calcrete to support the planned restart of the BIOX circuit.

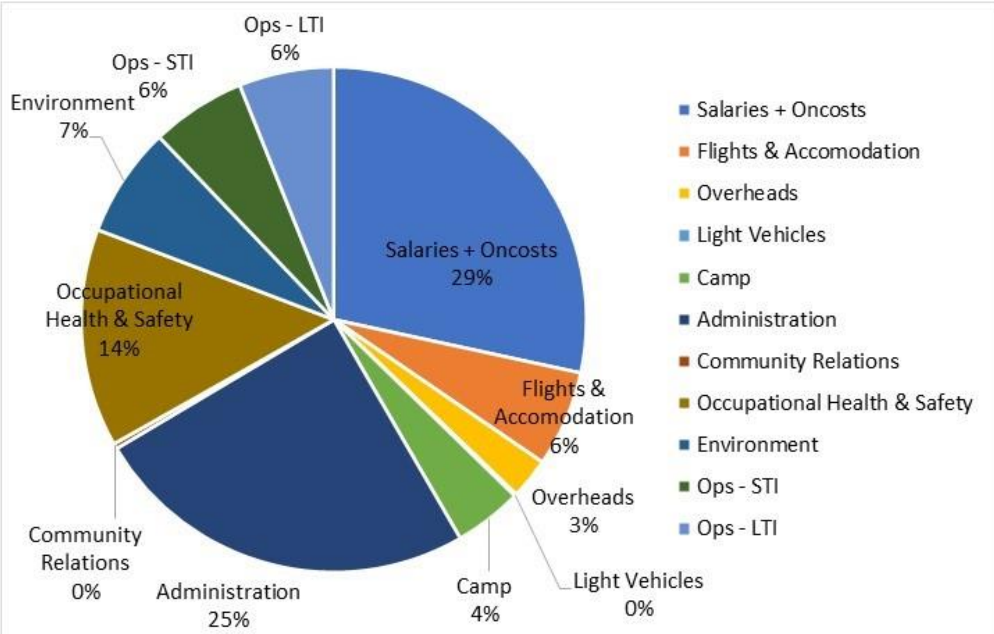
The cost of calcrete was estimated as $20/t as follows:

  - Ripping Cost - $2.5/t
  - Crushing & Screening cost - $15/t
  - Hauling - $2.50/t
  - Total $20/t

- <u>Overall Operating Cost comments</u>

The G&A cost is based on the actual G&A cost for Wiluna with tailings operation only in 2023. A forecast G&A was calculated when open pit mining commences with flotation and BIOX. The G&A breakdown is summarised in Figure 24 below.

Figure 28: G&A Cost Breakdown During OP Mining



Operating costs are summarised in Table 37 below.

Mining Costs	Variable Cost	Fixed Cost (per annum)
Wiltails prior to open pit operation	$5.97/t	-
Wiltails marginal cost	$2.47/t	-
Wiltails only post Open pit mining	$4.95/t	-
Open Pit	$4.95/t	-
Open Pit Stockpile rehandle	$2.77/t	-
Calcrete mining cost	$20.00/t calcrete	-
Underground mining contractor cost	-	$2,881,237
Underground bogging	$9.26/t material	
Underground hauling	Varies by t.km	
Underground mine services	$4.30/t ore	
Underground stope drilling	$89.30/m drilled	
Underground mining development cost	$4,656/m	-
Processing Costs	**Variable Cost**	**Fixed Cost**
Wiltails – marginal cost	$5.94/t	$6,148,000
Wiltails – tailings only cost	$8.65	-
Free milling – oxide	$15.72/t	-
Free milling – trans	$18.65/t	-
Flotation	$28.05/t	$8,782,000
BIOX	$303.64/t concentrate	-
G&A Costs	**Variable Cost**	**Fixed Cost**
Site-based G&A 2024 (tailings only)	-	$8,950,000
Site based G&A UG/OP pit mining	-	$12,793,000
Site based G&A (no mining, tailings only)	-	$8,950,000

Economics

Economic evaluation for Wiluna has been undertaken to explore the relative value of mining and processing options for the Wiluna assets. The options considered were open pit and underground mining with free milling ore treated by CIL and fresh ore by BIOX at up to 750 ktpa to produce concentrate and doré. The total treatment rate is 3.2 Mtpa, including flotation tailings by CIL and retreatment of tailings from historic TSFs. A Production Target case was developed, as described below:

- Open pit mining starting in early 2025. Open pit mining proceeds for six quarters with oxide and transition material, followed by fresh material. Open pit material is supplemented by tailings retreatment of historic tailings through CIL. Flotation tailings are treated through CIL when fresh material is processed.
- BIOX production to produce gold doré from the flotation concentrate commences in Q3 2026, aligning with the processing of fresh material from the open pits.
- Underground mining commences at the end of 2028 and continues for five years. Underground fresh material is supplemented by open pit fresh material to maximise the throughput of the flotation plant.
- Mining and processing of historic tailings continues throughput the operation to maximise utilisation and value from the CIL plant.
- Untreated open pit oxide and transition material is stockpiled until fresh ore is no longer available. Oxide and transition material are treated through the same comminution circuit as fresh, but at a higher rate.

The economic modelling was conducted in Australian dollars (AUD, A$) in real terms. The years are calendar years. The focus of the modelling was to maximise the value of the operation.

Table 38: Economic Assumptions

Item	UOM	Rate
Discount Rate	%	8.0
Foreign Exchange Rate	AUD:USD	0.67
Royalties	%	6.10

The discount rate is an industry standard rate applicable to the Australian Mining Industry and was agreed upon with the client. The foreign exchange rate was provided by the client. Both discount rate and foreign exchange rate were tested with sensitivity analysis. Royalties are based on actual royalties payable by the Wiluna operation and are taken from the Stage 2/3 PFS model from 2022.

- Metal Price and Recovery

Metal-specific assumptions are given in Table 38. The gold price was agreed between Mining One and FTI consulting in Australian dollar terms. The cash flow model used a USD gold price, which allowed sensitivity analysis on both the gold price and the exchange rate.

Table 39: Metal Prices and Assumptions

Item	Rate
Gold price	AUD2,880/oz
Silver price	USD21/oz

- Results

Summary cashflow modelling results are given below for the Production Target case.

This cashflow forecast is derived from the production target set out in page 16 of this announcement, and remains subject to a number of assumptions (including those on which the production target is based). This production target must be read in conjunction with the cautionary statement that there is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

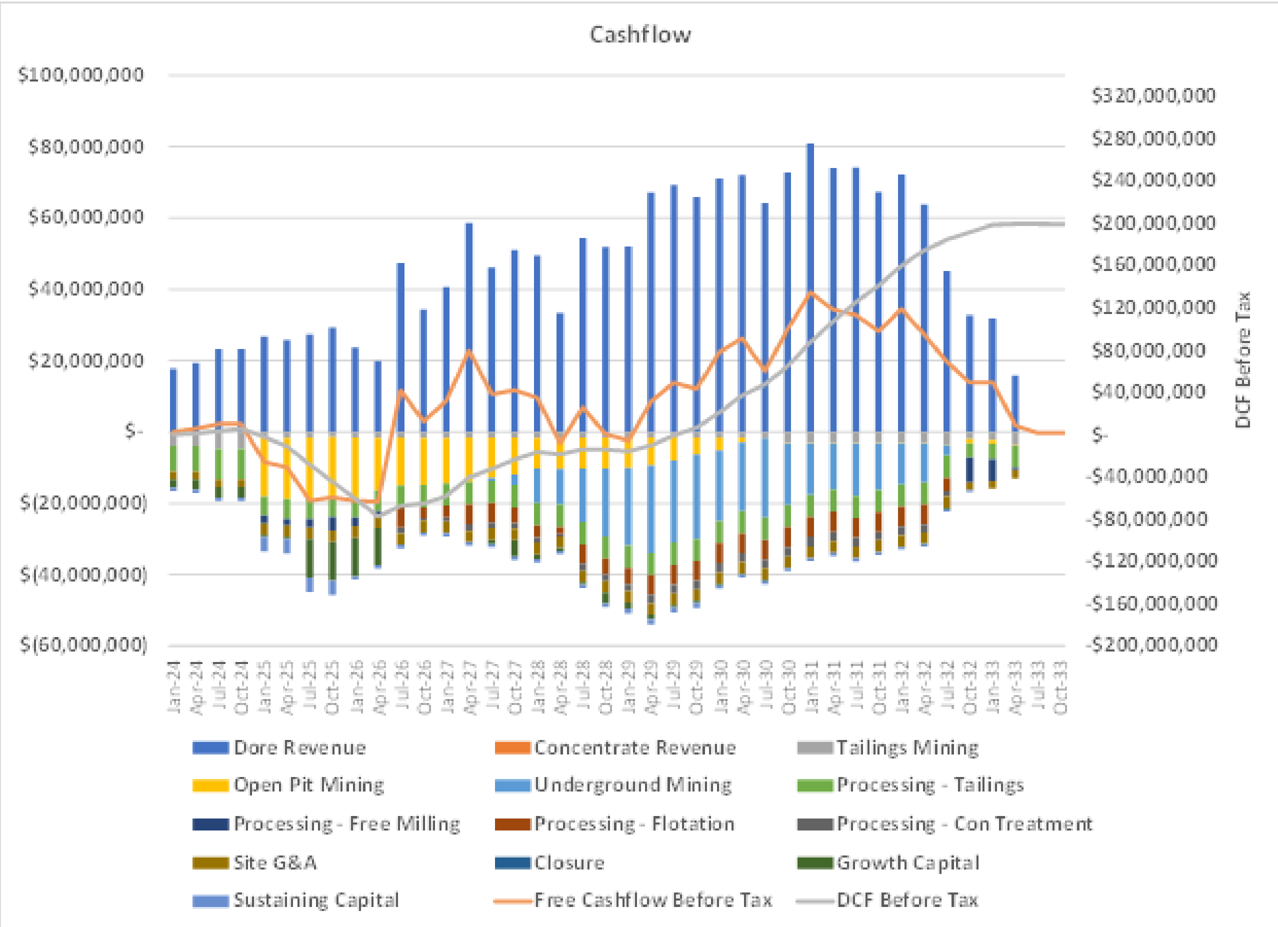
Table 40: Summary Cashflow Modelling Results

Gold Price	A$2880/oz	A$3084/oz[1]
Gross Cash Surplus	$436M	$607M
Less Growth CAPEX (including BIOX refurb)	$73M	$73M
Net Cash Surplus	$364M	$488M
NPV_8	$198.6M	$282M
IRR	53%	112%
CER	2.7	3.85
Payback (years)	5.5	3.75
AISC	$2,015	$2015
Operational Efficiency	0.75	0.7
Oz Produced (koz)	641.7	641.7

[1]Gold price at the time of writing.
[2]Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.
[3]Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.
[4]Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

The cashflow distribution is shown below. Revenue is entirely from doré production, with no direct concentrate sale.

Figure 29: Production Target Cashflow at A$2,880/oz

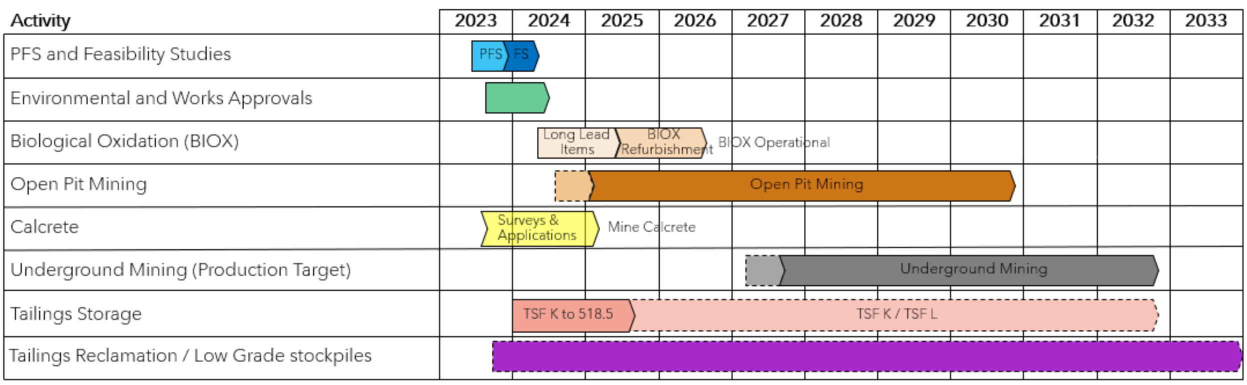


The Production Target has a maximum cumulative negative cash flow (MCNCF) of -$82.6M which represents the financing required. FTI Consulting advised this was a key performance measure, along with NPV and undiscounted cash flow.

Timelines

The study also investigated the timeline and requirements for environmental, heritage and mining approvals needed for mining the Wiluna deposit, as well as tailings disposal options. The project timelines for both the PFS and the Production Target are summarised below.

Figure 30: Project Timeline



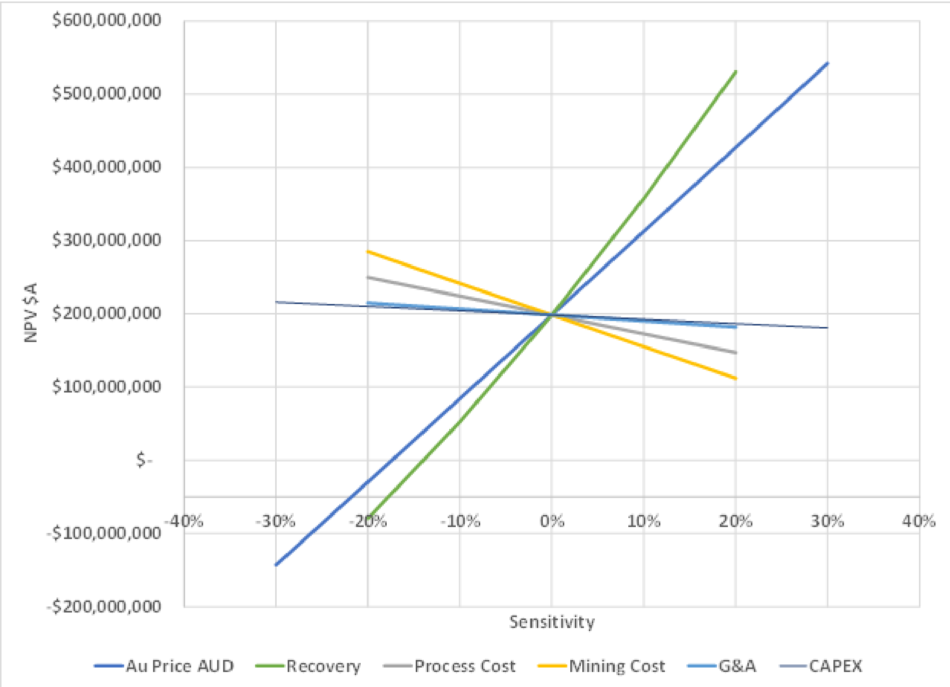
Sensitivity Analysis

- <u>All Parameters</u>

A sensitivity analysis was performed and is presented for the Production Target below.

The sensitivity analysis shows the project is most sensitive to recovery. The recovery for the various processes are aggregated in this analysis. Following recovery, the NPV is sensitive to gold price and the exchange rate. The exchange rate sensitivity is mainly because the metal price is nominated in US$ terms. The project is relatively insensitive to mining cost, process cost, G&A and CAPEX (in that order).

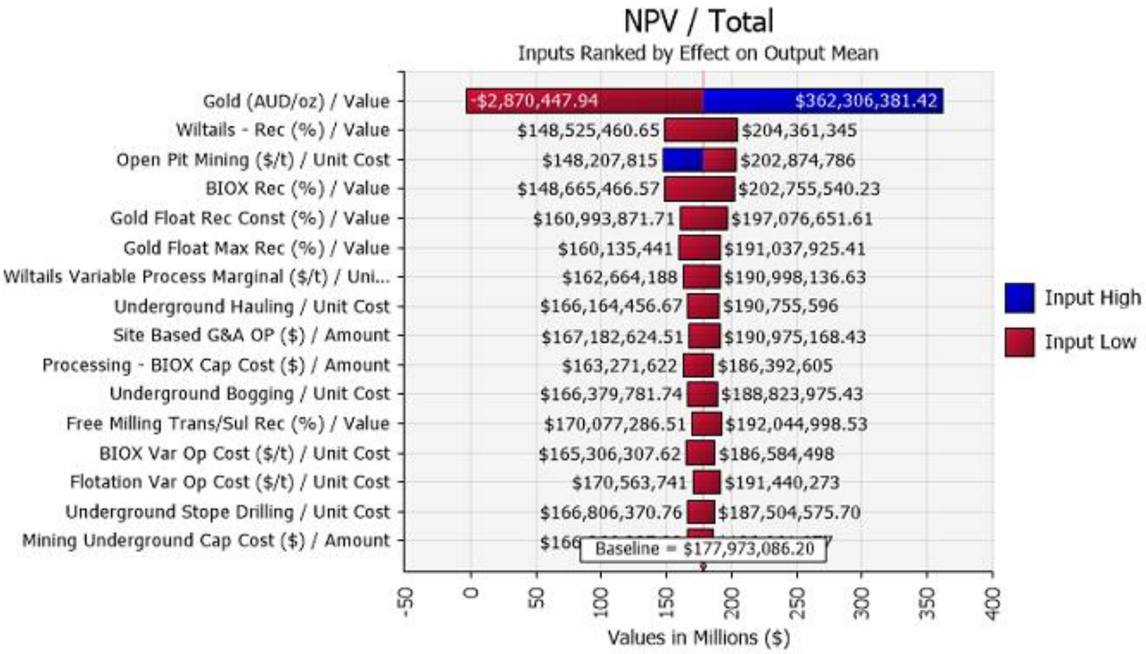
Figure 31: Production Target Sensitivity Analysis at A$2880/oz



Additional probabilistic modelling was performed on the Production Target case. A range for inputs with uncertainty was developed and used to perform Monte Carlo simulation modelling using @Risk software.

The Tornado diagram of the NPV is given shown below. The NPV_8 is most sensitive to gold price. The probabilistic modelling gives increased definition of the recovery sensitivity, with the Wiltails recovery the second most sensitive parameter and gold BIOX recovery the fourth most sensitive. This is followed by flotation recovery. Open pit mining cost was the third most sensitive parameter to NPV. Following that, the remaining parameters have a smaller effect on NPV.

Figure 32: Tornado diagram of the NPV



Permitting and Approvals

- <u>Mining Approvals</u>

Under Western Australian legislation, Mining Approvals issued by the Department of Mines, Industry Regulation and Safety (DMIRS) are required for all mining activities being carried out at a mine site. Mining Proposals are formulated and submitted for assessment by DMIRS, becoming Mining Approvals after all requirements are met (which may involve imposing conditions), which then permit mining activity to be carried out. Proposed operations under the PFS are located on existing, granted mining tenements.

- <u>Existing Mining Approvals</u>

Existing Mining Approvals held by Wiluna cover the following areas:

  - Tailings mining from Western Cell, adjacent to TSF C.
  - Reclamation of material from heap leach dump.
  - Construction and commissioning (commissioning includes operation for up to 6 months) of Wiltails processing up to 2.2Mtpa, including crushing, grinding, CIL leaching, flotation plant operation, and tailings deposition in TSF K.
  - TSF K Stage 2 construction to 518.5mRL.
  - Underground mining operations at Bulletin and Happy Jack.
  - Calcrete mining of a re-allocated area granted in 1998 (due to poor quality of material encountered in the original approved area), a portion of which has not been disturbed. Confirmation correspondence from DMIRS has been received that this reallocation was granted and remains in effect. Registered Heritage Sites cover large portions of the approved calcrete mining area.

To re-commence underground mining at Bulletin and Happy Jack it will be necessary to submit a Mining Operation Notification – Re-start of Operations to the DMIRS Safety Inspectorate. This is a simple online process, and the Inspectorate will be requiring an updated Ground Control Management Plan and other safety-related information and documentation.

- <u>Mining Proposals</u>

For the works which are planned within the Pre-feasibility Study, separate Mining Proposals are being developed covering:

- <u>General Mining and Treatment to 3.2Mtpa</u>

The works covered under this Mining Proposal are:

  - Open pit mining of West Lode cutback.
  - Open pit mining of Bulletin Pit cutback.

- Mining of tailings from TSF C and TSF H.
- Tailings and ore treatment to 3.2Mtpa.
- Refurbishment and operation of BIOX plant.
- Operation of flotation treatment circuit.
- Various upgrades within the processing facility.
- TSF K Stage 3 construction and deposition.

East Lode cutback is excluded from this Mining Proposal due to concerns over delays to the approval timeframe associated with demonstrating compliance to current geotechnical guidelines regarding the proximity of the cutback to TSF H and TSF J. East Lode cutback will therefore be the subject of a subsequent Mining Proposal, which should be actively pursued to permit concurrent mining of East Lode with the West Lode and Bulletin Pit Cutbacks.

The Mining Proposal was submitted to DMIRS in late 2023.

- Additional Mining Approvals

Additional Mining Approvals which will be required later are:

- Bulletin underground mining operations beyond the existing approval envelope.
- Happy Jack underground mining operations beyond the existing approval envelope.
- East Lode North underground mining operations, accessed from Happy Jack underground.
- Open pit mining of East

- Calcrete Mining

Correspondence approving the re-allocation of the calcrete mining area under the existing Supplementary Notice of Intent from 1998 has been received from DMIRS, which remains in full effect. A request has been made to the site to establish if any calcrete of suitable quality remains to be mined in this approved area and can be mined prior to BIOX treatment commencing.

- Water

The Eastern Borefield is an existing borefield ~10km east of the site and is a good quality water source for sulphide ore treatment and reverse osmosis of site potable water.

Works Approval was granted for the drilling, construction, and commissioning of additional bores in the Eastern Borefield as part of risk management for water supply continuity. Installation and operation of bore pumps in these additional bore locations, and extension of overhead powerlines (OHL) and discharge pipelines to these locations, is required under a separate Mining Proposal.

Heritage clearance remains outstanding, which is being actively pursued under existing agreements with TMPAC.

- Water Abstraction

The DWER water abstraction licences for the site were issued in 2014 and are due to expire on 5/06/2024. One of these abstraction licences is being undertaken.

- Tenement Standing

Currently the Chief Geologist on site is monitoring and managing the standing of tenements.
As mining activity resumes and the Chief Geologist's time and focus is required more for operational matters, responsibility for monitoring and managing tenements in good standing should be delegated to a person dedicated to that purpose.

- Camp Expansion and Rejuvenation

Included in the primary Mining Proposal is an upgrade and rejuvenation of the camp. In addition to DMIRS approval of the Mining Proposal, building approval from the Shire of Wiluna will be required.

No difficulties are anticipated by site management in obtaining Shire of Wiluna approval for these works. Approval timeframe would need to be incorporated into the timeframe for installation, as well as transition arrangements during demolition and replacement.

- Works Approval and Clearing Permits

With Mining Approval in place, Works Approval and Native Vegetation Clearing Permits will be required for all surface mining works.

- Heritage – Traditional Owners

The operations the subject of the PFS are proposed on mining tenements that are covered by existing agreements with Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC). TMPAC is the registered native title body corporate for the native title holders in the broader area, where native title is not extinguished.

WMC is working within those existing agreements to progress the operation, including through heritage processes. WMC is also re-engaging with TMPAC about a new exploration agreement that will apply beyond the operations the subject of the PFS. While Wiluna's relationship with TMPAC has had difficulties during a period of personnel changes within WMC, the relationship has improved following Wiluna's recent engagement.

Care and concerted consistent effort to build and maintain credibility and good relations are considered a matter of priority. Additional dedicated resources will be needed to maintain and progress the relationship with TMPAC and implement agreements. This will provide the foundation for managing operational and approval risks associated with the operations the subject of the PFS.

- Project Management Plan

An approved Project Management Plan (PMP) exists which covers the existing mining operations, including:

  - Open pit mining operations.
  - Underground mining operations.
  - Tailings reclamation from Western Cell.
  - Conventional processing to 2.2Mtpa, including crushing and grinding, CIL leaching, and flotation.
  - Deposition and storage of tailings in TSF K to 518.5mRL.
  - BIOX operations.
  - Camp operation.
  - Associated miscellaneous work.

Activities which lie outside the scope of the existing approved PMP will need to be covered by an updated or amended PMP. Review of planned activities outside of scope should commence immediately so that an amended PMP can be in place on a timely basis for these planned activities.

- Mine Closure Plan

Where there is a material change to the nature or extent of approved mining, processing, and associated activities on site, it is a requirement that an updated Mine Closure be formulated and submitted.

The existing approved Mine Closure Plan will require updating to reflect what is proposed under the current three Mining Proposals being formulated for submission (mining and treatment to 3.2Mtpa, calcrete mining, Eastern Borefield).

- Adverse Materials

In the Wiluna Mining Environmental Management Plan (WMX-HSE-PLA-09-11001, Adverse Materials (Waste Rock Management), both dispersive materials and PAF are identified as requiring Management.

- Wiluna Airstrip Upgrade

The current airstrip is limited in the size of aircraft that are rated for its use. The Shire of Wiluna, as an airport operator, has plans for upgrading the airstrip by way of a runway extension from 1800m to 2000m and a wider taxiway and apron area to accommodate larger aircraft. Federal funding is being sought for this upgrade, with any approvals required to be sought and arranged by the Shire of Wiluna as operator.

Forward-looking Statements

This announcement includes certain statements that may be deemed 'forward looking statements'. All statements that refer to any future production, Resources or Reserves, exploration results and events or production that Wiluna Mining Corporation Ltd (Subject to Deed of Company Arrangement) expects to occur are forward looking statements. Although the Company believes that the expectations in those forward-looking statements are based upon reasonable assumptions, such statements are not a guarantee of future performance and actual results, or developments may differ materially from the outcomes. This may be due to several factors, including market prices, exploration and exploitation success, and the continued availability of capital and financing, plus general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance, and actual results or performance may differ materially from those projected in the forward-looking statements. The Company does not assume any obligation to update or revise its forward-looking statements, whether because of new information, future events or otherwise.

Competent Persons Statements

Competent Person Statements – Mineral Resources
The Company confirms it is not aware of any new information or data that materially affects the information included in the 29 August 2023 JORC Resource Estimate announced to the ASX and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed when referring to its resource announcement made on 29 August 2023.

Competent Person Statements – Ore Reserves – Open Pit Mining
The information in this report relating to Open Pit Ore Reserves is based on, and fairly represents, information compiled by Marcus Jacobs a Competent Person who is a member of The Australian Institute of Mining and Metallurgy (AUSIMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Jacobs is employed by Mining One Consultants Pty Ltd. Mr Jacobs consents to the inclusion in the document of the information in the form and context in which it appears.

Competent Person Statements – Ore Reserves – Underground Mining, Tailings Mining
The information in this report relating to Underground and Tailings Ore Reserves is based on, and fairly represents, information compiled by Gary Davison a Competent Person who is a member of The Australian Institute of Mining and Metallurgy (AUSIMM) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking, to qualify as Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Davison is employed by Mining One Consultants Pty Ltd. Mr Davison consents to the inclusion in the document of the information in the form and context in which it appears.

PERSON / COMPANY	AREA OF EXPERTISE
Stuart Hutchin, Principal Geologist, Mining One Pty Ltd	Resource Estimation
Marcus Jacobs, Principal Mining Engineer, Mining One Pty Ltd	Open Pit Mining
Gary Davison, Principal Mining Engineer, Mining One Pty Ltd	Underground Mining, Tailings Mining

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The release of this announcement has been approved by the Deed Administrators.

*Michael Ryan, Kathryn Warwick, Daniel Woodhouse and Ian Francis, all Senior Managing Directors of FTI Consulting, were appointed as Deed Administrators on 28 July 2023.

Appendix – JORC Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections).

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Wiluna Mining has used i) reverse circulation drilling (RC) to obtain 1m samples from which ~3kg samples were collected using a cone splitter connected to the rig, ii) HQ or NQ2 (DDH) with ½ core sampling, or iii) LTK60 with full core sampling. Historical core in this report is either NQ2 or LTK60, predominantly drilled in the mid to late 2000's by Agincourt Resources and Apex Minerals. Apex Minerals alone drilled 1,024 diamond holes for 222,170m, with selective sampling, during their 2007 to 2013 tenure. • Wiluna Mining's sampling procedures are in line with standard industry practice to ensure sample representivity. Core samples are routinely taken from the right-hand-side of the cut line. For Wiluna Mining's RC drilling, the drill rig (and cone splitter) is always jacked up so that it is level with the earth to ensure even splitting of the sample. Face samples are taken across the face, with sample intervals matched to varying intensity of mineralisation as indicated by shearing and sulphides. • Historically (pre-Wiluna Mining), drill samples were taken at predominantly 1m intervals in RC holes, or as 2m or 4m composites in AC holes. Historical core sampling is at various intervals, indicating that sampling was based on geological observations at intervals determined by the logging geologist. • Wiluna Mining analysed RC and DDH samples using ALS laboratories in Perth. Analytical method was Fire Assay with a 50g charge and AAS finish. Golden Age and Lennon DDH grade control holes were also analysed at the Wiluna Mine site laboratory for preliminary results, pulverized in an LM5 bowl to produce a 30g charge for assay by Fire Assay with AAS finish. • At the laboratory, samples are weighed and then jaw crushed to 70% passing 6mm. Samples >3kg were 50:50 riffle split to become <3kg. The <3kg splits were crushed to <2mm in a Boyd crusher and pulverized via LM5 to 90% passing 75µm to produce a 50g charge for fire assay. Historical assays were obtained using either aqua regia digest or fire assay, with AAS readings. • Historical core samples were assayed at independent external laboratories Genalysis and ALS in Perth, using the same preparation method described above with either 30g or 50g charge. Analytical procedures associated with data generated by Apex and Agincourt are consistent with current industry practice and are considered acceptable for the style of mineralisation identified at Wiluna.

Criteria	JORC Code Explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	• Wiluna Mining data reported herein is RC 5.5" diameter holes. Diamond drilling is oriented HQ, NQ or LTK60 core. • Historical drilling data contained in this report includes RC, AC, RAB and DD core samples. RC sampling utilized face-sampling hammer of 4.5" to 5.5" diameter, AC and RAB sampling utilized open-hole blade or hammer sampling, and DD sampling utilized LTK 60 and NQ2 half core samples. It is unknown if core was orientated, though it is not material to this report. All Wiluna Mining RC drilling used a face-sampling bit.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• For Wiluna Mining RC drilling, chip sample recovery is visually estimated by volume for each 1m bulk sample bag and recorded digitally in the sample database. For DD drilling, recovery is measured by the drillers and Wiluna Mining geotechnicians and recorded into the digital database. Recoveries were typically 100% except for the non-mineralised upper 3 or 4m in RC holes, and the weathered upper 50 to 80m of DD holes that is generally more broken and fractured. For historical drilling, most core is in fresh competent rock and recoveries appear to be generally excellent. For DD drilling, sample recovery is maximised in weathered and broken zones by the use of short drill runs (typically 1.5m). For historical drilling, recovery data for drill holes contained in this report has not been located or assessed, owing to incomplete data records. Database compilation is ongoing. • For Wiluna Mining RC drilling, sample recovery is maximized by pulling back the drill hammer and blowing the entire sample through the rod string at the end of each metre. Where composite samples are taken, the sample spear is inserted diagonally through the sample bag from top to bottom to ensure a full cross-section of the sample is collected. To minimize contamination and ensure an even split, the cone splitter is cleaned with compressed air at the end of each rod, and the cyclone is cleaned every 50m and at the end of hole, and more often when wet samples are encountered. Historical practices are not known, though it is assumed similar industry-standard procedures were adopted by each operator. For historical drilling with dry samples it is unknown what methods were used to ensure sample recovery, though it is assumed that industry-standard protocols were used to maximize the representative nature of the samples, including dust-suppression and rod pull-back after each drilled interval. For wet samples, it is noted these were • collected in polyweave bags to allow excess water to escape; this is standard practice though can lead to biased loss of sample material into the suspended fine sample fraction. For DD drilling, sample recovery is maximised by the use of short drill runs (typically 1.5m). For Wiluna Mining drilling, no such relationship was evaluated as sample recoveries were generally excellent.

Criteria	JORC Code Explanation	Commentary
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• Drill samples have been logged for geology, alteration, mineralisation, weathering, geotechnical properties and other features to a level of detail considered appropriate for geological and resource modelling. • Logging of geology and colour for example are interpretative and qualitative, whereas logging of mineral percentages is quantitative. • All holes were logged in full. Check-logging was completed on historical intervals retrieved, with only minor edits required to historical logs. • Core photography was taken for WMC diamond drilling.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• For core samples, Wiluna Mining uses half core cut with an automatic core saw. Samples have a minimum sample length of 0.3m and maximum of 1.5m, though typically 1m intervals were selected. A cut line is routinely drawn at an angle 10 degrees to the right of the orientation line. Where no orientation line can be drawn, where possible samples are cut down the axis of planar features such as veins, such that the two halves of core are mirror images. • For historical drilling sampling techniques and preparation are not known. Historical core in storage is generally half core, with some quarter core remaining; it is assumed that half core was routinely analysed, with quarter core perhaps having been used for check assays or other studies. Holes have been selectively sampled (visibly barren zones not sampled, though some quartz vein intervals have been left un-sampled), with a minimum sample width of 0.3m and maximum of 1.2m, though typically 1m intervals were selected. • RC sampling with cone splitting with 1m samples collected, or in the hangingwall 4m scoop composites compiled from individual 1m samples. RC sampling with riffle or cone splitting and spear compositing is considered standard industry practice. • For historical samples the method of splitting the RC samples is not known. However, there is no evidence of bias in the results. • Wiluna Mining drilling, 1m RC samples were split using a cone splitter. Most samples were dry; the moisture content data was logged and digitally captured. Where it proved impossible to maintain dry samples, at most three consecutive wet samples were obtained before drilling was abandoned, as per procedure. AC samples were 4m composites. • Jaw crushing and splitting is considered to be standard industry practice; each sample particle has an equal chance of entering the split chute. At the laboratory, >3kg samples are split so they can fit into a LM5

Criteria	JORC Code Explanation	Commentary
		pulveriser bowl. At the laboratory, >3kg samples are split 50:50 using a riffle splitter so they can fit into a LM5 pulveriser bowl. • Field duplicates were collected approximately every 20m down hole for Wiluna Mining holes. With a minimum of one duplicate sample per hole. Analysis of results indicated good correlation between primary and duplicate samples. RC duplicates are taken using the secondary sample chute on the cone splitter. AC duplicates were scooped in the field. It is not clear how the historical field duplicates were taken for RC drilling. • Riffle splitting and half-core splitting are industry-standard techniques and considered to be appropriate. Where sampling occurred through 'stope' intervals, these samples don't represent the pre-mined grade in localized areas. • For historical drilling, field duplicates, blank samples and certified reference standards were collected and inserted from at least the early 2000's. Investigation revealed sufficient quality control performance. No field duplicate data has been located or evaluated in earlier drilling. Field duplicates were collected every 20m down hole for Wiluna Mining holes. Analysis of results indicated good correlation between primary and duplicate samples. • Sample sizes are considered appropriate for these rock types and style of mineralisation and are in line with standard industry practice.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Fire assay is a total digestion method. The lower detection limits of 0.01ppm is considered fit for purpose. For Wiluna Mining Exploration drilling, ALS completed the analyses using industry best- practice protocols. ALS is globally-recognized and highly-regarded in the industry. Historical assaying was undertaken at Amdel, SGS, and KalAssay laboratories, and by the on-site laboratory. The predominant assay method was by Fire Assay with AAS finish. The lower detection limit of 0.01ppm Au used is considered fit for purpose. Samples analysed at ALS and with Au > 0.3g/t are also assayed for As, S and Sb using ICPAES analysis ("ME-ICP41"). Apex analysed samples at ALS (four-acid digest with ME-ICP finish for S, As, Fe, Pb, Zn, Sb, Bi, Te, and AAS finish for Au), and at Genalysis (four-acid digest with ICP-OES or ICP-EOES finish for S, As, Fe, Pb, Zn, Sb, Bi, Te, and AAS finish for Au, and additional leachwell with tail analysis for Au done on quartz reef samples. • No geophysical tools were required as the assays directly measure gold mineralisation. For Wiluna Mining drilling, down-hole survey tools were checked for calibration at the start of the drilling programme and every two weeks. • For Wiluna Mining drilling certified reference material, blanks and duplicates were submitted at 1:20 ratios. Check samples are routinely submitted to an umpire lab at 1:20 ratio. Analysis of results confirms the

Criteria	JORC Code Explanation	Commentary
		accuracy and precision of the assay data. Duplicates show good correlation between original and repeat analyses with very few samples plotting outside acceptable ranges (+/- 20%). Blanks and quartz flushes are inserted after logged high grade core samples to minimise and check for smearing, analyses of these results typically shows no smearing has occurred. It is understood that previous explorers great Central Mines, Normandy and Agincourt employed QAQC sampling, though historical QAQC data have not been assessed. During the period of 2007- 2013 under Apex Minerals' ownership of the Wiluna project, QAQC procedures were undertaken on diamond drilling (DD) sample batches. QAQC samples including CRM and blank material were submitted with original sample batches for laboratory assay. CRMs and blanks were inserted at a rate of approximately 1 in 20. Re-assay of historical samples and assay of umpire batches were also undertaken during this period. Additionally, a procedure for routine insertion of blank material and quartz flushes after samples where visible gold was logged in core was also in place. The Apex QAQC was not previously included in the project database until 2021, when following a review of original Apex DD sample sheets and original laboratory reports, 2709 QAQC samples from 214 DD holes drilled in this period were able to be loaded into the drilling database.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative Company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Wiluna Mining's significant intercepts have been verified by several Company personnel, including the database manager and geologists. • Wiluna Mining drilled 31 RC and DDH holes to twin historical RC and DDH holes drilled by a variety of previous operators at various resource zones across Wiluna. Correlation between intercepts was generally poor when intercepts were greater than 20m apart reflecting the shortrange variability expected in gold deposits of this style. • Wiluna data represents a portion of a large drilling database compiled since the 1930's by various project owners. • Data is stored in Datashed SQL database. Internal Datashed validations and validations upon importing into Micromine were completed, as were checks on data location, logging and assay data completeness and down-hole survey information. QAQC and data validation protocols are contained within Wiluna Mining's manual "Wiluna Mining Geology Manual 2021". Historical procedures are not documented. • The only adjustment of assay data is the conversion of lab non-numeric code to numeric for estimation.

Criteria	JORC Code Explanation	Commentary
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All historical holes appear to have been accurately surveyed to centimetre accuracy. Wiluna Mining's drill collars are routinely surveyed using a DGPS with centimetre accuracy. • Grid systems used in this report are GDA 94 Zone 51 S. Drilling collars were originally surveyed in either MGA grid or Mine Grid Wiluna 10 and converted in Datashed to MGA grid. • An accurate topographical model covering the mine site has been obtained, drill collar surveys are closely aligned with this. Away from the mine infrastructure, drill hole collar surveys provide adequate topographical control. • WMC drillholes are routinely surveyed using continuous north-seeking gyro at the end of hole, with 'sighter' surveys conducted while drilling. Historical diamond drill holes were surveyed downhole at close regular spacing using a Reflex or Eastman camera attached to a 6m aluminium extension to minimise magnetic interference, at 15m, 50m and every 50m thereafter. A selection of holes were subsequently gyro surveyed to confirm the single shot method has not been significantly affected by magnetic rocks. • Down-hole survey tools are calibrated weekly.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Wiluna Mining's exploration holes are generally drilled 25m or 50m apart on sections spaced 25m apart along strike. • Historical drill hole spacing is typically 50m x 25m of 25m x 25m in Indicated Resource areas and 50m x 50m in Inferred areas. • The mineralisation lodes show sufficient continuity of both geology and grade between holes to support the estimation of resources which comply with the 2012 JORC guidelines • Samples have been composited only where mineralisation was not anticipated. Where composite samples returned significant gold values, the 1m samples were submitted for analysis and these results were prioritized over the 4m composite values.

Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Orientation of drilling to mineralisation ranges from 45 to 90 degrees to the strike of the lodes and 20 to 90 degrees to the dip of the lodes. • RC drill holes were generally orientated perpendicular to targets to intersect predominantly steeply-dipping north-south or northeast-southwest striking mineralisation, though underground DD holes were in places drilled obliquely; true widths are shown in the significant intercepts table. • The perpendicular orientation of the drill holes to the structures minimises the potential for sample bias.
Sample security	• *The measures taken to ensure sample security.*	• It is not known what measures were taken historically. For Wiluna Mining drilling, samples are stored in a gated yard until transported by truck to the laboratory in Perth. In Perth the samples are likewise held in a secure compound.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audit has been completed for this resource estimate. For Wiluna Mining drilling, data has been validated in Datashed and upon import into Micromine. QAQC data has been evaluated and found to be satisfactory.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	• The drilling is located wholly within M53/6, M53/30, M53/40, M53/44, M53/95, M53/69, M53/468, M53/200 and M53/32. The tenements are owned 100% by Wiluna Operations Pty Ltd., a wholly owned subsidiary of Wiluna Mining Corporation Ltd, except for M53/30 which is owned 94/96 by Wiluna Operations Pty Ltd and 2/96 by Mr James Murray Jackson. • The tenements are in good standing and no impediments exist. • Franco Nevada have royalty rights over the Wiluna leases of 3.6% of net gold revenue.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Modern exploration has been conducted on the tenement intermittently since the mid-1980's by various parties as tenure changed hands many times. This work has included mapping and rock chip sampling, geophysical surveys and extensive RAB, RC and core drilling for exploration, resource definition and grade control purposes. This exploration is considered to have been successful as it led to the eventual economic exploitation of several open pits during the late 1980's / early 1990's, and underground mining to the present day. The deposits remain 'open' in various locations and opportunities remain to find extensions to the known potentially economic mineralisation.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The gold deposits are categorized as orogenic gold deposits, with similarities to most other gold deposits in the Yilgarn region. The deposits are hosted within the Wiluna Domain of the Wiluna greenstone belt.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole*	• Exploration results are not reported in this report for the first time. The reader is referred to numerous separate ASX releases concerning exploration results.

Criteria	JORC Code Explanation	Commentary
	○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Significant intercepts are reported as length-weighted averages. For Wiluna: above a 1.0g/t cut- off and > 2.0 gram x metre cut off (to include narrow higher-grade zones) using a maximum 2m contiguous internal dilution. • In places, broad widths of lower grade mineralisation are identified where the mineralised shear zone is wider and comprises multiple higher-grade zones within a broadly mineralised envelope, which may ultimately upon the completion of relevant mining studies (in progress) be amenable to bulk underground mining methods with lower cost and lower economic cut-off grades. Where this style of mineralisation exists, broad 'halo' intercepts are calculated by allowing no limit to internal dilution and no internal lower cut-off grade. E.g. BUUD0102 = 62.54m @ 1.76g/t from 0m (broad intercept), comprising 7.11m @ 4.57g/t from 0m, 0.3m @ 6.32g/t from 10.28m, • 14.05m @ 4.09g/t, and 6.81m @ 2.34g/t. • High-grade internal zones are reported above a 5g/t envelope, e.g. BUUD0102 contains 7.11m @ 4.57g/t from 0m including 1.25m @ 15.08g/t and 0.68m @ 6.44g/t. Ultra-high grades zones of >30g/t are additionally reported. No metal equivalent grades are reported because only Au is of economic interest.

Criteria	JORC Code Explanation	Commentary
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Lode geometries at Wiluna are generally steeply east or steeply west dipping. Generally the lodes strike north-northeast to northwest-southeast. Historical drilling was oriented vertically or at - 60° west, the latter being close to optimal for the predominant steeply-east dipping orientation. At Golden Age, the lode strikes NW-SE, with drilling from underground oriented at various angles depending on available drill sites. Drill holes reported herein have been drilled as closed to perpendicular to mineralisation as possible. In some cases due to the difficulty in positioning the rig close to remnant mineralisation around open pits this is not possible. True widths are always included in the significant intercepts table when results are reported for the first time.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Exploration results are not reported in this report for the first time. The reader is referred to separate ASX releases with details provided in the body of this report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• For Wiluna Mining drilling, either all significant assay results are reported or the hole is listed as 'no significant intercepts'. Full reporting of the historical drill hole database of over 80,000 holes is not feasible.

Criteria	JORC Code Explanation	Commentary
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Other exploration tests are not the subject of this report.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Follow-up resource definition drilling is likely, as mineralisation is interpreted to remain open in various directions. • Exploration results are not reported in this report for the first time. The reader is referred to separate ASX releases with details provided in the body of this report.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The WMC corporate geological database is located on a dedicated Microsoft SQL2008R server. The database itself utilises the Maxwell Geoservices 'DataShed' architecture, and is a fully relational system, with strong validation, triggers and stored procedures, as well as a normalised system to store analysis data. The database itself is accessed and managed in house using the DataShed front end, whilst routine data capture and upload is managed using Maxwell's LogChief data capture software. This provides a data entry environment which applies most of the validation rules as they are directly within the master database, ensuring only correct and valid data can be input in the field. Data is synced to the master database directly from this software, and once data has been included, it can no longer be edited or removed by LogChief users. Only the company database manager and assistant have permissions allowing for modification or deletion.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person is a full time employee of Mining One Consultants and has visited the site in March 2023 for two days.

Criteria	JORC Code Explanation	Commentary
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Confidence in the geological interpretation is moderate to high. The geological and mineralogical controls at Wiluna are well understood as the deposits have been mined since the 1930's from both open pit and underground mining methods. Existing stopes and development drives have been used in conjunction with drill hole intercepts to guide the mineralisation interpretation and determine lode geometry. • The mineralisation was interpreted using drill hole data (RC chips and diamond core) drilled from surface and underground locations. Existing pit and surface mapping and underground void wireframes were used to guide the current interpretation. • Alternative lode orientations could be modelled which would alter lode dip in certain areas. This alternative interpretation would have little effect on reported grade and global tonnage. The current interpretations are based on those used historically. • An extensive suite of quality underground geology maps have been used in conjunction with in-pit mapping and observations during open pit mining to assist in the geological understanding of the controls on mineralisation. Geological logging of drill samples has been used to define oxide, transitional and fresh domains which have been used as hard boundaries within the Mineral Resource estimation. Logging of quartz veins have assisted in the interpretation of lodes. Only diamond and reverse circulation drilling samples were used in the final estimate however all available data was used in the geological assessment. • Gold mineralisation is predominantly associated with second to third order north and northeast trending brittle to brittle-ductile dextral strike-slip faults, localised at dilational bends or jogs along faults, at fault intersections, horsetail splays and in subsidiary overstepping faults. Mineralisation is predominantly shear controlled at Wiluna, although the Golden Age lodes are quartz reef hosted.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Wiluna deposits occur along a NS strike extent of greater than 3.6km from 9,220N to 12,835N (local grid) and are encompassed within a 1.6km wide corridor from 9,270E to 10,900E. Drilling extends to a vertical depth of approximately 1,600m and the mineralisation has been modelled from surface to a depth of approximately 1,200m below surface. • Lodes vary in strike between 330 and 045 degrees, with most lodes striking between 000 and 015 degrees. The dip of each lode varies from 60° to sub-vertical.

Criteria	JORC Code Explanation	Commentary
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill*	• Estimation of gold grade has been completed using Ordinary Kriging (OK) in all domains. Arsenic was estimated into the model using the regression formula 695.4*au_ok_ppm+1561. Sulphur is also estimated using a regression formula namely 1493*au_ok_ppm + 6602. Antimony is estimated using inverse distance squared. • The lode wireframes were created in Leapfrog software. The lode wireframes have been used to define the domain codes used for estimation. The drillholes have been flagged with the domain code and composited using the domain code to segregate the data. Hard boundaries have been used at all domain boundaries for the grade estimations. • Compositing has been undertaken in Leapfrog to 1 m and then imported into Surpac software. There are no residual samples • The influence of extreme gold assays has been reduced by top-cutting across selected domains. The top-cut thresholds have been determined using a combination of histograms, log-probability and mean-variance plots. Top-cuts have been reviewed and applied to the composites on a domain-by-domain basis. • Variography has been determined based on historical analysis supplied by Wiluna Mining and also verified by Mining One using the geostatistical analysis in Surpac. Where there is insufficient data to generate meaningful variograms, variograms have been grouped or borrowed from other similar domains. • The drillhole data spacing ranges from less than 10 m spacing in areas of dense data to greater than to 100 m in sparsely drilled generally deep areas. • The extrapolation distance along strike from the end points was half the drill spacing at each deposit, which generally resulted in extrapolation distances of 12.5m or 25m. Down dip extents were generally half the up dip distance of the previous mineralised intersection which resulted in distances ranging from 25m to 130m. • The block model parent block size is 10 m (X) by 10 m (Y) by 5 m (Z) and sub-blocks down to 2.50 m (X) by 1.25 m (Y) by 1.25 m (Z), with the sub-blocks estimated at the scale of the parent block. The block size is considered appropriate for the drillhole spacing throughout the deposit. • Grade estimation has been completed in three estimation passes with the requirements for filling blocks in each pass summarised as: o Pass 1 estimations have been undertaken using a minimum of 3 and a maximum of 15 composites with a dynamic search ellipsoid radius of 25m. o Pass 2 estimations have been undertaken using a minimum of 2 and a maximum of 10 composites with a dynamic search ellipsoid radius of 50m. o Pass 3 estimations have been undertaken using a minimum of 1 and a maximum of 3 composites with a dynamic search ellipsoid radius of 250m.

Criteria	JORC Code Explanation	Commentary
	hole data, and use of reconciliation data if available.	• Previous estimates have been completed across all the deposits. These were a combination of operational models for both underground and open pit, and resource models completed by external consultants. The mineralisation interpretations for the current estimate were based on those used in the previous estimate, and utilised information from active mining areas to guide lode geometry and continuity. • The Mineral Resource estimate has been validated using visual validation tools, mean grade comparisons between the block model and composite grade means, and swath plots comparing the composite grades and block model grades by Northing, Easting and RL. • No selective mining units are assumed in this estimate. • There will be no by-products recovered from the mining of the Au lodes. • Arsenic and Sulphur were estimated in the model as these are important metallurgical indicators. • The Wiluna deposits have been well drilled from surface and at numerous UG locations. Open pit GC drilling at 5m spacing has been conducted across many of the open pits such as EW Lodes and Happy Jack. The widest regular drill spacing across the Wiluna deposits is 100m NS and 25m EW. • A dynamic 'ellipsoidal' search was used to select data and was based on parameters taken from the variography. Ellipse adjustments were made to honour lode geometry for the minor lodes. • The deposit mineralisation was constrained by wireframes constructed using down hole assay results and associated lithological logging. Wireframes were used as hard boundaries in the interpolations at each deposit. Weathering surfaces were generated from drill hole logging and analysis of leach well data and these were used to code regolith types.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated on a dry basis. No moisture values were reviewed.

Criteria	JORC Code Explanation	Commentary
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Surface open pit optimisations have been evaluated using Whittle software and Mineral Resources reported above 0.35g/t for oxide and transitional and 0.70g/t for fresh rock inside $3,250 AUD/oz optimised pit shell. • Determination of the below pit cut-off grade has been calculated based on assumed typical underground mining method adopted as part of the current feasibility studies. The cut-off grade is based on a gold price of A$2750/oz and mine costs which reflect the current contract rates. The total overall operating cost of A$175/t ore and overall payable metal recovery of 91.2%. Mineral Resources are reported above 2.3g/t Au below to pit shells. • Mining One assesses the application of these technical parameters suitably reflect reasonable prospects for eventual economic extraction.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Most of the Wiluna deposits have been extensively mined using UG methods (ore development drives and stoping methods). The updated models have been estimated with the assumption that the deposits will be mined using UG methods utilising existing historical declines and access points. • Extensive open pit mining has occurred across the deposits and potential open pit cut backs will be assessed, based on current economic conditions.

Criteria	JORC Code Explanation	Commentary
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• In Wiluna fresh ore most gold occurs in either solid solution or as submicroscopic particles within fine-grained sulphides. Historically Au recovery through the Wiluna BIOX plant averaged 83%. • WMC has recently outlined a process whereby the sulphides are separated and captured from the gangue minerals through floatation and concentrated. The concentrate is then shipped overseas and the gold extracted through pressure oxidation. Recoveries are estimated to be >90%. • Oxide and transitional ore has generally been oxidised and is free milling to a depth of approximately 80m. Metallurgical analyses resulted in averaged leach recoveries, on the oxide and transitional ores, of 90.8% and 84.3% after 24 hours.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The Wiluna deposits have been mined using open pit and underground methods since the 1930's. The area is currently an active mining area with all relevant infrastructure such as tails dams already in place and well established. • No environmental, permitting, legal, taxation, socio-economic, marketing or other relevant issues are known, that may affect the estimate.

Criteria	JORC Code Explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density values were determined through analysis of rock samples and diamond core. • A total of 16,206 determinations were completed by Apex staff for every assayed interval over the course of 18 months (mid 2007 to end of 2008). The procedure works on the water immersion method and involved weighing 10cm billet of clean core (no oven drying) followed by suspending and weighing in water to determine volume. WMC has accumulated a dataset of more than 4,350 SG determinations on drill core from the Wiluna deposits since 2015. Determinations were completed at ALS Laboratory in Perth using the water immersion method, and wax coating (ALS code OA-GRA08) at a 1:5 ratio. • An average bulk density value was assigned to oxide, transitional, and fresh material based on analysis of sample results at each lode. Lodes without bulk density data have been assigned default bulk densities taken elsewhere in the mine. Waste dump and tailings material was assigned an average value of 1.8t/m^3. The backfill material has been assigned a 2.1t/m^3 density value.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). • The deposits have been classified as Measured, Indicated and Inferred Mineral Resource based on a combination of quantitative and qualitative criteria which included geological continuity and confidence in volume models, data quality, sample spacing, lode continuity, and estimation parameters (number of informing composites, estimation pass number, average distance of composites, kriging quality parameters). • The Indicated portion of the Mineral Resource was defined across the main lodes though areas that had generally been filled in the first estimation pass and blocks were estimated by informing composites at an average distance of 40m or less; the kriging efficiency and slope of regression were generally >=0.7; moderate to high confidence was observed in lode continuity (strike and thickness); and areas were defined by RC and Diamond holes on spacings of 40m or less. Digitised strings were used to form regular shapes to code these areas. • The mineralisation that has been estimated in the second or third pass that does not meet the criteria for Indicated has been classified as Inferred Mineral Resource. Unclassified material is present in some domains generally in areas filled by the final fourth pass of the interpolation. • Although comprehensive stope and void depletion solids are available, there is uncertainty as to whether voids are open, backfilled with waste, or backfilled with mineralised material. It is not clear if all pillars remain or if they were mined out. There is also a risk that not all depletion files have been located, and that material currently estimated as in-situ has been mined historically. These factors were taken into account

Criteria	JORC Code Explanation	Commentary
		when applying confidence categories to the various lodes. • The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent insitu mineralisation. The definition of mineralised zones is based on high level geological understanding from good quality sample data, producing models of continuous mineralised lodes. Validation of the block models showed good correlation of the input data to the block estimated grades. • The input data is considered reliable as WMC have implemented Quality Control measures which have confirmed the suitability of data for use in the Mineral Resource estimates. • The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Previous Mineral Resource estimates across the Wiluna deposits have been reviewed by Mining One and other consultants. The most recent previous Mineral Resource was reported November 2021. Results from those audits have been used to improve the existing models. • Mining One have completed an independent Mineral Resource model that in broad terms correlates with the 2021 estimate released by Wiluna Mining.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and*	• The Mineral Resource estimate is intended for both underground and open pit mining assessment and reports global estimates. • The Mineral Resource has been estimated with a moderate degree of confidence which has been reflected in the classification into Indicated and Inferred categories. The deposits have been mined since the 1930's by open pit and underground mining methods thus the controls on mineralisation are well understood. Recent in pit observations and grade control drilling, and historical underground face mapping and drill core logging, have verified the structural controls on mineralisation and have been used in the interpretation of the current mineralised lodes. Data quality is good and drill holes have detailed logs produced by qualified geologists. Recognised laboratories have been used to analyse drill samples and check the quality of results produced by the onsite laboratory. There is a lack of confidence in the immediate vicinity of UG stopes and drives with respect to how much insitu remnant material remains as historical documentation is incomplete. Recent diamond drilling from surface has intersected voids where anticipated which has improved confidence in the position of voids at the local scale across certain areas. This uncertainty has been captured by use of a 5m buffer around all underground voids. • The Wiluna deposits were being actively mined by open pit and underground methods up until 2022. Mineral reserves and resources were reconciled and reported monthly. The reconciliation was conducted by spatially comparing the resource and reserve models with the site grade control models, Declared Ore Mined (DOM) and stockpile balancing. The pits have achieved reasonable reconciliation to date. The UG

Criteria	JORC Code Explanation	Commentary
	confidence of the estimate should be compared with production data, where available.	lodes were historically mined with only the Golden Age lode currently being mined intermittently. Stope grades are based on weighted average of drill intersections. The UG material is blended with open pit material so is difficult to reconcile. The UG ore does not form a significant component of monthly totals. The current models have been depleted within all known voids, drives, and stopes.

Section 4 Estimation and Reporting of Ore Reserves (Open Pit / Underground)

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resource estimate used for the Wiluna Mining Centre was based on the 2023 Mining One Mineral Resource block model (wil_m1_jun23_bm.mdl) and the block model was used to develop the Ore Reserve estimate. • The Mineral Resources are reported inclusive of the Ore Reserves.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	• Marcus Jacobs, the Competent Person for Section 4 (Open pits) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023 • Gary Davison, the Competent Person for Section 4 (Underground) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023. • Both site visits did not reveal any matters that may affect the ability to declare an Ore Reserve.
Study Status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have*	• Conversion of the Mineral Resource to an Ore Reserve was on the basis of a viable mine plan and engineering design interrogating the resource model. The work was completed to a PFS level of detail and relevant material Modifying Factors have been considered. • Approved and designed TSF K option 1 is available for 21.4 Mt of the 22.9 Mt of combined tailings and open pit ore reserve, and options for the remaining 1.5 Mt are currently at a scoping study level of detail. Timelines for the design and subsequent approval of a paddock style TSF L presents is a risk to available storage capacity and needs to be addressed to minimise disruption to production. There is however some capacity for storing tailings in pit that has been done on site historically.

Criteria	JORC Code explanation	Commentary
	been considered.	
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied*	• A cut off grade assessment was completed using a AUD$2,880 gold price. The assessment included processing costs and recovery estimates for all mining areas assessed by the 2023 Wiluna Open Pit PFS. By material type the resulting cut off grades were: ○ Oxide 0.35 g/t Au ○ Transitional 0.42 g/t Au ○ Fresh (BIOX-CIL) 0.87 g/t Au Based on the mining, process and general and administrative (G&A) costs, and considering the realised gold price along with royalties, refining charges and transportation costs, the cut-off grade (COG) for mining was calculated as 2.6 g/t. I.e. at $2,880/oz, this is $241/t which for the purposes of this study, approximately covers all mining and treatment costs. This was the beginning of an iterative process. Future calculations should take into account metallurgical recoveries and any increase in gold price.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).*	• Most recent open pit mining at Wiluna was undertaken using conventional truck and excavator fleets. The 2023 PFS determined that open pit mining with this arrangement was the most appropriate method for the selected open pits. • A Whittle assessment was initially completed (Lerchs & Grossmann, 1965) and used as the basis for detailed pit designs then scheduling. • Total mining costs of $4.95/t were applied in the pit optimisation. The costs include contract mining, grade control, load and haul and mining related site operational staff costs. •

Criteria	JORC Code explanation	Commentary

	• *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.*
	• *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.*
	• *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).*
	• *The mining dilution factors used.*
	• *The mining recovery factors used.*
	• *Any minimum mining widths used.*
	• *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.*
	• *The infrastructure requirements of the selected mining methods.*
		• Based on observations and slope performance, the pit designs were based on the recommended slope parameters.
		(see table below)
		• Waste rock designs used similar parameters to existing dumps:
		  ○ Berm width – 5m
		  ○ Batter angle – 36 degrees
		  ○ Batter height – 20m
		• Grade control drilling was taken into account.
		• A minimum mining width of 20m was used in the assessment.
		• A dilution and mining recovery (ore loss) assessment was completed and a global dilution factor of 115% and a mining recovery of 95% was adopted for pit optimisations, scheduling and cashflow modelling. Historic results indicated that dilution and ore loss may be higher than the values used, and as a result the inclusion of blast movement monitoring in grade control processes has been recommended along with detailed dilution and ore loss modelling and trial mining to test estimates.
		• Inferred material was excluded from the Ore Reserves and treated as waste. Pit optimisations indicate that some areas are sensitive to the inclusion of Inferred Resources; priority will be placed on infill drilling in these areas.
		• Underground mining method is based of historical mining method of long hole open stoping, using waste fill and pillars where geotechnically required.
		• A dilution and mining recovery (ore loss) assessment was completed and a dilution factor of 0.25m on the hanging wall and footwall of the stopes. Stopes preliminarily design using MSO then altered as required. A mining recovery (ore loss) factor of 95% was used in the model.

Material	Batter face angle (°)	Berm width (m)	Batter Height (m)
Oxide	65	5	20
Transitional	55	5.5	15
Fresh	70	4	20

Criteria	JORC Code explanation	Commentary

Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*
	• *Whether the metallurgical process is well-tested technology or novel in nature.*
	• *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*
	• *Any assumptions or allowances made for deleterious elements.*
	• *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.*
	• *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*
		• The Wiluna Mining Centre operates a Carbon-In-Leach (CIL) gold processing facility that will used for processing oxide, transitional and historical tailings material to produce gold doré. Sulphide feed will be treated through the existing crushing, grinding and flotation circuits, the concentrate will be oxidised in the Biological Oxidation (BIOX) circuit and the BIOX residue leached and recovered to produce gold doré.
		• Both metallurgical processes use well tested technology and are considered the most appropriate for the style of mineralisation; the CIL process is currently used at Wiluna and the BIOX circuit has been previously used at Wiluna and will be refurbished.
		• Extensive operating data was available for assessment and included:
		  ○ Metallurgical operating data from the 2022 sulphide flotation campaign
		  ○ Data from historic BIOX operations and
		  ○ Recent Western Cell tailing reprocessing data
		• Recovery factors for each weathering domain were:
		  ○ Free milling oxide: 84.0%
		  ○ Free milling transition/sulphide: 78%
		  ○ Flotation: 87.5% and BIOX residue: 96% for 84% overall.
		• There are no deleterious elements expected for the production of gold doré.
		• The estimated operating cost for 750 ktpa of refractory sulphide and up to 3.2 Mtpa of tailings retreatment is A$58M/y. The operating costs on a per tonne basis for ore processing is below:
		
		Type / **Unit** / **Value**
		Tailings Retreatment (Grinding Circuit) / A$/t tailing / 15.20
		Free Milling / A$/t ore / 22.96
		Sulphide Flotation / A$/t ore / 39.78
		BIOX / A$/t concentrate / 303.64
		Tailings Retreatment (Scrubber Circuit) / A$/t tailing / 5.94

Environmental factors or assumptions	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status*	• The mining and processing facilities are located on granted mining leases. • Investigation into the extent and applicability of environmental studies including flora, subterranean fauna and heritage surveys will be required for the southern calcrete area to enable early submission of a Mining Proposal, and any additional calcrete mining areas.

Criteria	JORC Code explanation	Commentary
	of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	• The Eastern borefield is a good quality water source and while Works Approval has been granted for commissioning additional bores, the installation and operation of bore pumps, extension of overhead powerlines and discharge pipelines requires a separate Mining Proposal. Stygofauna surveys for the Mining Proposal have been conducted and Heritage Clearance remains outstanding. • Small pockets of material with elevated sulphur could occur across all weathering horizons, primarily in fresh rock and will require management to prevent waste from acidifying. Measures in the Wiluna Mining Environmental Management plan includes measures such as risk assessments of adverse materials and encapsulation.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• The mining and processing facilities are located on granted mining leases. An additional tailings storage facility (TSF L) would require confirmation of lease approvals, the extent and applicability of environmental studies and heritage surveys required for permitting and works approval. • Power generation at Wiluna is from a combination of gas and diesel fired generators and gas is supplied from various sources. Increased gas demand from the restarting of the BIOX circuit will require and increase in supply from about 1.8 TJ/d to about 2.2 TJ/d. • Water at Wiluna is sourced from a number of groundwater sources including the eastern borefield, Caledonian Pit and open pits and underground from Wiluna, Matilda, and Galaxy Mine Areas. Relevant water abstraction licences issued by the Department of Water and Environmental Regulation (DWER) are due to expire in early June 2024 and require renewal. • The site is close to Wiluna and the Goldfields Highway. There is a sealed runway at the Wiluna Aerodrome although the current preference is to use facilities at Mt Keith operations close to 90 km south. • Accommodation is currently available at the existing Wiluna Mine Village and while some blocks require rejuvenation a significant expansion is not required.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.*	• Capital costs for the process plant capital cost estimate was developed within the scope and defined limits to an AACE Class 4 estimate with an accuracy level of ±25%. The estimate was in AUD and does not include or allow for foreign exchange fluctuations.

Criteria	JORC Code explanation	Commentary
	• *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	• Capital costs for tailings storage facility options used a cost of AUD$20/m³, which is comparable with some of the previous TSF J lifts. • Gold doré transport and TC/RC's were obtained from industry benchmarks and freight charges were actual values from 2022. • Open Pit Mining costs were based on the most recent Wiluna costs for contract mining and owner's costs and were updated to reflect current expected market conditions. The average mining cost including both fixed and variable costs was $4.95/t. • Underground Mining costs were based on the most recent Wiluna costs for contract mining and owner's costs and were updated to reflect current expected market conditions. The average mining cost including both fixed and variable costs was $173/t. • The Western Australia State Government royalty of 2.5% metal product and a Franco Nevada royalty of 3.6% for 6.1% was applied to gold produced.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• The head grade is derived from interrogating the Mineral Resource model with the proposed mine design. Mining factors were applied to account for recovery and dilution. • The economic evaluation was based on a gold price of A$2,880/oz. Doré transport and refining costs were applied at A$8.01/oz and A$2.84/oz respectively. • The cashflow has been modelled in real terms and no price or cost escalations were applied.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.*	• Gold is a precious metal and is subject to fluctuations in supply and demand. • Gold is planned to be sold to Perth Mint at spot price. • There are no hedging arrangements currently in place.

Criteria	JORC Code explanation	Commentary
	• *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• A discount rate of 8.0% was used in the analysis of the Ore Reserve estimate NPV. • The project demonstrates a positive NPV based on the inputs and assumptions used in the evaluation. • The NPV is most sensitive to recovery and closely followed by gold price and exchange rate. NPV is less sensitive to processing cost, mining cost and G&A cost respectively.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• Stakeholder engagement is ongoing and is required to ensure effective communication and engagement and minimise risks to the project. While the relationship with the Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC) has had difficulties during a period of personnel changes within WMC, the relationship has improved following recent engagement. WMC is working within its existing agreements with TMPAC that apply to the operations the subject of the PFS and is re-engaging with TMPAC about a new exploration agreement that will apply beyond the operations the subject of the PFS. This and additional resourcing will provide the foundation for managing related operational and approval risks.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.*	• Mining Proposals are required for the mining of open pits (initially Bulletin and West Lode, and later East Lode), mining of tailings from TSF C and TSF H, and ongoing treatment of tailings and open pit ore. • Engagement with regulators has commenced, and compilation of a Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities.

Criteria	JORC Code explanation	Commentary
	• *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent*	• The Wiluna Mining Corporation is currently subject to Deed of Company Arrangement (DOCA). • Approvals for bore pumps and extension of overhead powerlines and discharge pipelines at the Eastern borefields, require a Mining Proposal and Heritage Clearance remains outstanding. • Timing is a risk for the design and permitting of a new TSF for some TSF options, although this is expected to be needed only later in the project.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• Only Indicated resources at Bulletin, East Lode and West Lode have been assessed for estimation of Ore Reserves. Indicated resources above cut off and within the PFS designs have been classified as Probable Ore Reserves. • It is the Competent Person's view that the methods used for the purpose of Ore Reserve estimation provide a fair and reasonable estimate of the mineable parts of the Mineral Resources as it is currently understood.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates*	• No external audit has been completed.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure*	• The Ore Reserves are based on a PFS completed to a level of detail that is typically expected for the scale of the Mineral Resource currently understood. No statistical procedures were carried out to quantify the accuracy of the estimate. • This statement relates to global estimates of tonnes and grade.

Criteria	JORC Code explanation	Commentary
	deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Key risks to the Ore Reserve value are: gold price, grade tonnage distribution, production rate, mining recovery and dilution, metallurgical recovery and mining costs.

Section 4 Estimation and Reporting of Ore Reserves (Tailings Retreatment)

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resource estimate used as the basis for conversion to an Ore Reserve is "wiltails_m1_model_10_11_23.mdl". • The Mineral Resources are reported inclusive of Ore Reserves
Site Visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• Gary Davison, the Competent Person for Section 4 (Tailing Re-treatment) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023. The site visit did not reveal any matters that may affect the ability to declare an Ore Reserve.
Study Status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	**Current Production:** • Wiluna is currently re-mining and re-treating the tailings from the Western Extension TSF. • Prior Studies • Prior to the commencement of tailings retreatment, a number of studies had been completed to establish the feasibility of tailings retreatment. These include a PFS (Blackham, 2019). • The re-mining of tailings has been shown to be technically achievable. • The current tailings re-treatment is achieving a cash positive position. The planned tailings re-treatment is NPV positive, satisfying the requirement to be economically viable.
Cut-off parameters	▪ *The basis of the cut-off grade(s) or quality parameters applied*	• No cut-off has been applied to the re-mining of the tailings. All material able to be mined within the selected TSF's is planned to be processed.

Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	**Mining Method:** • Re-mining of the tailings at Wiluna is currently being undertaken by conventional 50t and 80t backhoe configured excavators with a fleet of 7 x 40t Bell/Hitachi articulated haul trucks. This fleet is planned to carry on the re-mining. An ancillary fleet of 1 x Dozer, 1 x Grader and 1x Water Cart are also engaged in supporting the primary mining equipment. • Mining is undertaken in 2.5m horizontal flitches. • To assist with drying out of the tailings, each flitch is ripped by a dozer in advance of mining where required. • The outer walls are de-stacked as mining progresses. The walls adjacent to existing TSF's are left intact to preserve their integrity. For TSF H, this ensures that TSF J south wall integrity is maintained. For Western Cell TSF, the west wall of TSF C remains intact until such time as the upper portion is mined in line with the LOM plan. • Loaded trucks haul the tailings to the scrubbing plant where they are stockpiled before loading into a hopper. • Site has previous history of rehandling reclaimed tailings, such as lifting the walls on TSF J. **Geotechnical:** • As per recommendations from Knight Piesold (2021), where the TSF H and Western Cell TSF's are mined against TSF J and TSF C respectively, a buttress of tailings is left to ensure the stability of the adjacent structure (TSF). • A trafficability study was undertaken by Knight Piesold (2022) by conducting a load bearing assessment of the TSF's (TSF H and Western Cell). For most locations and depths, the FOS were >1.9, well above 1.5 FOS requirement. Where the in-situ undrained shear strength falls below FOS 1.5, strategies have been recommended for the wheeled equipment (Trucks, grader, FEL). **Mining Modifying Factors:** • Recovery – 100% of the tailings are planned to be recovered. • The TSF's were constructed using tailings for the lifts, therefore, the only likely dilutant material is tailings themselves (at the same grade as the material came from within the same tailings mass). On this basis, no dilution factors have been applied. • Minimum mining widths – there are no specified minimum mining widths. The bases of the historical TSF's are relatively large (several hundred metres across) with the truck fleet highly manoeuvrable and the excavators able to mine to tight tolerances. **Mine Plan:** • The re-mining of the tailings has been sequenced and scheduled using MineSched™ software. The production rate required from the historical TSF's is The plan is to mine the TSF's in the following order:

- Western Extension TSF;
- TSF H;
- TSF C (upper); and
- TSF C (lower).

- Inferred Mineral Resources – There are no Inferred Mineral Resources planned to be mined in the mine plan. All material scheduled has been classified as Indicated Mineral resources.
- Infrastructure requirements – No additional mining infrastructure is required to re-mine the tailings. A Scrubbing Trommel and associated materials handling has recently been constructed and commissioned which pre-treats the tailings ahead of the CIL plant.

Metallurgical factors or assumptions

- *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.*
- *Whether the metallurgical process is well-tested technology or novel in nature.*
- *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.*
- *Any assumptions or allowances made for deleterious elements.*
- *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.*
- *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*

- Metallurgical Processes – The Wiluna Mining Centre operates a Carbon-In-Leach (CIL) gold processing facility that will used for processing oxide, transitional and historical tailings material to produce gold doré.
- Maturity Level – The current method of treatment via CIL is a well understood method in the mining industry, and commonly used in Australia. Recent Western Cell tailing reprocessing data was available for assessment to support the Ore Reserve.
- Test work was undertaken as part of previous studies (e.g., Blackham, 2019). This informed the decision to commence re-treatment in March 2023. Since that time, the CIL plant has performed to expectations. The testwork was domained by TSF and by sub regions in each TSF where appropriate. TSF C has been subdivided into upper and lower on the basis of grade, metallurgical recovery and material type. The upper portion of TSF C is included in the LOM plan, while the lower portion is excluded.
- Gold is recovered to Doré for Tailings re-treatment and no deleterious elements are recovered using the processes described.
- For the purposes of this PFS, the mining of two x 2.5m flitches for a total of 275kt tonnes (~1% of the Ore Reserve) is considered more than adequate to establish the technical viability of the process.
- Reconciled mill production for the period March-May 2023 (inclusive) was as follows:

Month	Head Grade (Au, g/t)	Met. Recovery (%)	Processed (t, wet)	Processed (t, dry)	Moisture (%)
March 2023	0.92	48.0%	112,527	99,910	11.2%
April 2023	0.80	48.8%	95,376	78,742	17.4%
May 2023	0.89	47.5%	112,802	95,953	14.9%

		Total 0.87 48.1% 320,705 274,605 14.3% This is result is well in advance of the grade expected from the top of the dam, in the range 0.60-0.65 g/t Au.
Environmental factors or assumptions	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• Acid Mine Drainage analysis of the historical tailings material was undertaken as part of the previous PFS (Blackham, 2019), with each master composite subject to analysis. Results obtained indicate Net Acid Potentials ranging from -172 kg H_2SO_4/t to -116 kg H_2SO_4/t with all composites characterised as non-Acid forming.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	• All the infrastructure required to mine and process the historic tailings dam facilities is currently in place. The current TSF (TSF K) has sufficient volume to support the Ore Reserve.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	**Capital costs** • There are no additional up front capital cost requirements for the mining and re-processing of tailings. • Sustaining capital of 5% of mining operating cost has been applied to cover mining equipment costs. **Mining** • Mining costs for the Ore Reserve assume tailings re-mining concurrent with open pit, underground tailings re-mining. This allows shared overhead and fixed costs. Where open pit mining ceases, an extra allowance for re-mining has been applied. • LOM Minng costs associated with tailings re-treatment are based on a first principles estimate based on the current operating costs. **Processing** • Processing costs associated with tailings re-treatment are based on a first principles estimate based on the current operating costs.

		G&A • The current G&A costs support the re-mining and re-treatment of tailings. In the Ore Reserve case, costs are increased and are shared between open pit, underground and tailings re-mining.
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• The head grade is derived from interrogating the Mineral Resource model with the proposed mine design. • The economic evaluation was based on a gold price of A$2,880/oz. Doré transport and refining costs were applied at A$8.01/oz and A$2.84/oz respectively. • The cashflow has been modelled in real terms and no price or cost escalations were applied.
Market assessment	▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	▪ Gold Doré is the product produced for sale. Gold is a freely traded commodity on the open market and is subject to the forces of supply and demand. ▪ Gold is planned to be sold to Perth Mint at spot price. ▪ There are no hedging arrangements currently in place. ▪ A customer and competitor analysis is not required as there are no product sales contracts.
Economic	▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	▪ Discounted Cash Flow (DCF) methods have been applied to generate a Net Present Value (NPV) for the tailings re-treatment component of the Wiluna Mining Centre. The gold price assumed to generate the Ore Reserve is AUD$2,880/oz A pre-tax Discount rate of 8% (Real) has been applied. ▪ Inflation and escalation are not considered as all cash flows are conducted in real terms, based on estimates prepared which represent current pricing. ▪ The tailings re-treatment plan has been tested at the planned production rate of 3.2Mtpa. Positive cashflows and a positive NPV were generated for the mining plan.

Social	▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	▪ Stakeholder engagement is ongoing and is required to ensure effective communication and engagement and minimise risks to the project.

Other	▪ *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*
	▪ *Any identified material naturally occurring risks.*
	▪ *The status of material legal agreements and marketing arrangements.*
	▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent*
		▪ Mining of the Western Cell TSF has received government approval.
		▪ An approved Project Management Plan (PMP) exists which covers the existing mining operations, including:
		  ▪ Tailings reclamation from the Western Cell TSF
		  ▪ Conventional Processing to 2.2Mtpa
		  ▪ Deposition and storage of tailings in TSF K to 518.5mRL.
		▪ Mining Proposals are required for the mining of tailings from TSF C and TSF H, and ongoing treatment of tailings.
		▪ Engagement with regulators has commenced, and compilation of a Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities. This proposal includes an increase in production rate from 2.2 to 3.2Mtpa.
		▪ The Wiluna Mining Corporation is currently subject to Deed of Company Arrangement (DOCA).
		▪ Approvals for bore pumps and extension of overhead powerlines and discharge pipelines at the Eastern borefields, require a Mining Proposal and Heritage Clearance remains outstanding.

Classification	▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	▪ Probable Ore Reserves have been derived from Indicated Mineral Resources with appropriate modifying factors applied. ▪ The Wiluna Tailings Re-treatment Ore Reserve estimate appropriately reflects the Competent Person's views. ▪ None of the Probable Ore Reserves have been derived from Measured Mineral Resources.
Audits or reviews	▪ *The results of any audits or reviews of Ore Reserve estimates*	▪ The Ore Reserve estimate has not undergone any external audits.

Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	▪ The Ore Reserves are based on a PFS completed to a level of detail that is typically expected for the scale of the Mineral Resource currently understood. No statistical procedures were carried out to quantify the accuracy of the estimate. ▪ This statement relates to global estimates of tonnes and grade. ▪ Key risks to the Ore Reserve value are predominantly gold price, with metallurgical recovery and mining costs as lesser risks.

WILUNA PREFEASIBILITY STUDY

For

WILUNA MINING CORPORATION

(SUBJECT TO DOCA)

Job No.	5362_M
Doc No.	5362_M_7767_FINAL 20240224
Date:	February 2024
Prepared by:	Mining One

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1 COMPETENT PERSONS AND SUBJECT MATTER EXPERTS

The Competent Persons have relied upon a number of subject matter experts (SME) who have been consulted and relied upon in the development of the PFS that supports the ore reserve for the Wiluna Mining Centre. The Competent Persons and contributing SME professionals and area of contribution of each are detailed below.

Table 1-1: Competent Persons - Wiluna Mining Centre

PERSON / COMPANY	AREA OF EXPERTISE
Stuart Hutchin, Principal Geologist, Mining One Pty Ltd	Resource Estimation
Marcus Jacobs, Principal Mining Engineer, Mining One Pty Ltd	Open Pit Mining
Gary Davison, Principal Mining Engineer, Mining One Pty Ltd	Underground Mining, Tailings Mining

Table 1-2: Subject Matter Experts - Wiluna Mining Centre

PERSON / COMPANY	AREA OF EXPERTISE
Cameron Bain, Managing Director, Mincore Pty Ltd	Plant Engineering Costs
Sharon Arena, Director/Principal Environmental Advisor, BPL Environmental	Environment and Approvals
Kevin Rees, Principal Metallurgist, Mining One Pty Ltd	Processing /Infrastructure / Commercial (G&A, Selling Costs)
Rogan Werder-Bigham, WSP	Tailings Storage (TSF K)
Craig Stewart, Principal Mining Consultant, Mining One Pty Ltd	Tailings Mining
James French, Principal Geotechnical Engineer, Mining One Pty Ltd.	Geotechnical Open Pit
Peter Cepuritis, Principal Geotechnical Engineer, Mining One Pty Ltd	Geotechnical Underground

EXECUTIVE SUMMARY

Cautionary Statement

This report ("Report") has been prepared by Mining One Pty Ltd and is provided on the basis that none of the Company nor its respective officers, shareholders, related bodies corporate, partners, affiliates, employees, representatives and advisers make any representation or warranty (express or implied) as to the accuracy, reliability, relevance or completeness of the material contained in the Report and nothing contained in the Report is, or may be relied upon as a promise, representation or warranty, whether as to the past or the future. The Company hereby exclude all warranties that can be excluded by law.

Some statements in this report regarding estimates or future events are forward-looking statements, including prospective financial material which is predictive in nature. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "scheduled", "intends", "anticipates", "believes", "potential", "could", "nominal", "conceptual" and similar expressions. Forward-looking statements, opinions and estimates included in this report are based on assumptions and contingencies which may be inaccurate, and are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance.

Forward-looking statements may be affected by a range of variables that could cause actual results to differ from estimated results and may cause the Company's actual performance and financial results in future periods to materially differ from any projections of future performance or results expressed or implied by such forward-looking statements. These risks and uncertainties include but are not limited to liabilities inherent in mine development and production, geological, mining and processing technical problems, the inability to obtain mine licenses, permits and other regulatory approvals required in connection with mining and processing operations, competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel, incorrect assessments of the value of acquisitions, changes in commodity prices and exchange rate, currency and interest rate fluctuations, various events which could disrupt operations and/or the transportation of products, including labour stoppages and severe weather conditions, the demand for and availability of transportation services, the ability to secure adequate financing and management's ability to anticipate and manage the foregoing factors and risks. There can be no assurance that forward-looking statements will prove to be correct. Statements regarding plans with respect to the Company's mineral properties may contain forward-looking statements in relation to future matters that can only be made where the Company has a reasonable basis for making those statements.

The Company has concluded that it has a reasonable basis for providing forward looking statements included in this announcement. All material assumptions on which the forward-looking statements are based are set out in this document. The information in the Report is in summary form only and does not contain all the information necessary to fully evaluate any transaction or investment.

Summary

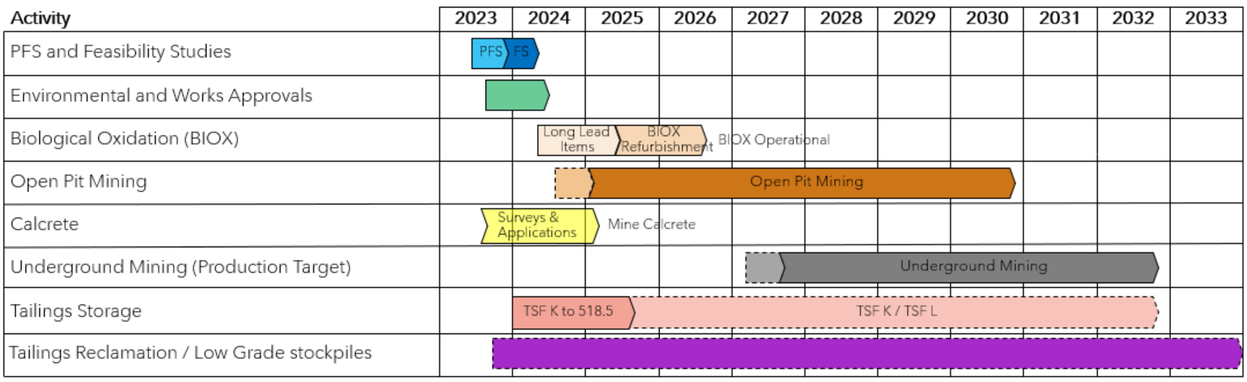
Mining One Pty Ltd (Mining One) was engaged by FTI Consulting to complete a Pre-Feasibility Study (PFS) for the Wiluna Mining Corporation (Subject to Deed of Company Arrangement) (or Wiluna).

The Wiluna deposit encompasses pits along a 4 km strike distance and includes both sulphide and free milling (quartz reef) ore. Historical mining exploited both sulphide and free milling ore, however the current study targets sulphide material. Where free milling material is encountered it will initially be processed until sulphide ore processing starts and then stockpiled for processing at an opportune time in the processing schedule.

The Wiluna operation currently has the capacity to process free milling ore in conjunction with tailings material via the Wiltails repulping trommel and linear screen, as well as the ability to process sulphide ore in the float plant, producing sulphide concentrate. However, due to poor payability and marketing challenges associated with the concentrate, a Biological Oxidation (BIOX) processing facility is proposed to be refurbished to treat the sulphide ore. The PFS targets approximately 3.2 Mt of feed from open pit mining, which is then supplemented by underground mining in the Production Target case.

When the BIOX plant is not operating, the Carbon In Leach (CIL) processing facility is available for processing oxide at 1.7 Mtpa and transitional material at 1.3 Mtpa; tailings retreatment through the Wiltails repulper gives a total throughput of 3.2 Mtpa.

This study also investigates the timeline and requirements for environmental, heritage and mining approvals needed for mining the Wiluna deposit, as well as tailings disposal options. The project timelines for both the PFS and the Production Target are summarised below.



Project Timeline

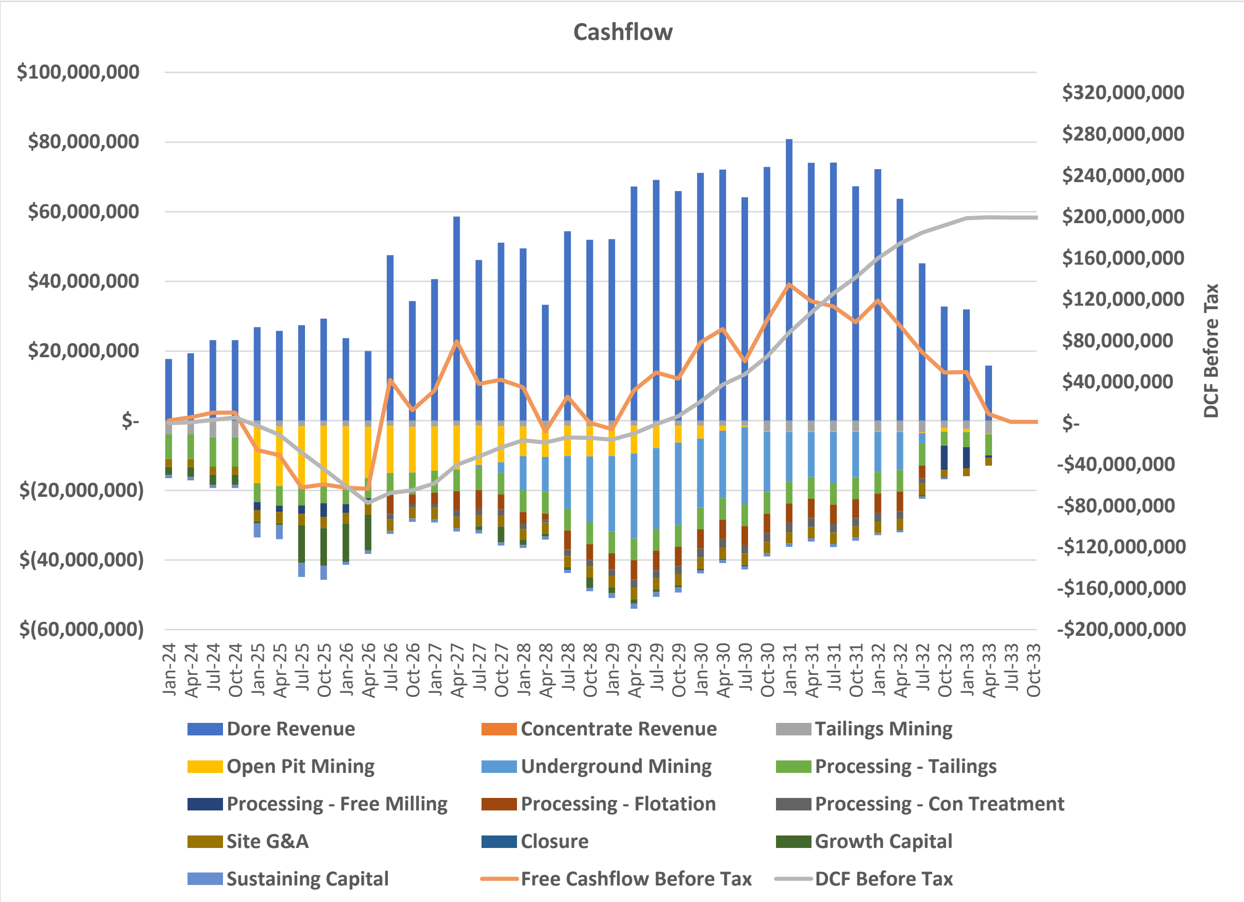
The purpose of the study was to develop an operational foundation based on a prudent mining and processing strategy, limiting mining to high margin areas and to provide robust economic returns and establish critical life of mine infrastructure.

Financial modelling for the study was performed in Australia dollars, with no escalation in prices or inflation. The gold price used was A$2,880 per ounce.

Mining One has generated Ore Reserve estimates and a Production Target. The Ore Reserves are based on Measured and Indicated Mineral Resources only. Open Pit, Underground and Tailings Reclamation are included in the Ore Reserve estimate. The Production Target builds on the Ore Reserve case including Inferred Mineral Resources as follows:

- Open Pit – an additional 9% Inferred Mineral Resources.
- Underground - an additional 18% Inferred Mineral Resources.
- Tailings reclaim – an additional Indicated Mineral Resources.

The final Production Target case presented is expected to generate a cash flow of $364M with an NPV_8 of $198.6M over a 9.5 year mine life. Total gold production is 641k ounces.



Production Target Cashflow

Geology

The Mining One Consultants Pre-Feasibility work program included a review of the previous Mineral Resource models completed by Wiluna namely the 2018 Local Uniform Conditioning (LUC) and the 2021 Ordinary Kriging (OK) Models. The 2018 LUC model was created with a focus on open pit mining scenarios whereas the 2021 OK model was focused on potential underground mining scenarios. The Mining One review determined that the updated Mineral Resource model should be suitable for use in both open pit and underground mining scenarios.

The 2023 Mining One Mineral Resource model was therefore created using low grade (<2 ppm Au) and high grade domains (>2 ppm Au) throughout the entire Wiluna Central Mine area deposit. These domains were constructed in Leapfrog software. The new Mineral Resource estimate used Ordinary Kriging for the gold grade estimation and inverse distance and regression equations for the deleterious elements.

Open pit Mineral Resources were reported within a $3,250 AUD/oz reasonable prospect for economic extraction (RPEE) pit shell and underground Mineral Resources were reported below this pit. Cut-off grades range between 0.35 ppm and 2.3 ppm Au due to recovery factors of oxide, transition and fresh material in addition to economic factors relating to open pit and underground mining scenarios. These updated Mineral Resource estimates are summarized below.

Mining One have not re-estimated or re-classified the satellite deposits, stockpiles and tailings deposits. These are included as reported by Wiluna Mining Corporation in the 17th November 2021 ASX announcement[1], however have been depleted as of June 2023. The supporting information provided in the announcement continues to apply and has not materially changed.

There is uncertainty that following evaluation, that the historical estimates from 2021 will be reported as ore reserves in accordance with the JORC Code.

The 2023 Open Pit and Underground Mineral Resources estimated by Mining One Consultants in addition to the satellite deposits, stockpile and tailings Mineral Resources reported in 2021 are summarised in the following tables.

Wiluna Mining Corporation Mineral Resource Summary as of 24th August 2023*												
Mining Centre	MINERAL RESOURCES											
	Measured			Indicated			Inferred			Total 100%		
	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	**Mt**	**g/t Au**	**koz Au**
AUGUST 2023 MINING ONE MINERAL RESOURCES – WILUNA CENTRAL MINE AREA												
Wiluna – Open Pit	0.13	2.45	11	12.16	2.15	839	4.04	2.35	305	**16.33**	**2.20**	**1,156**
Wiluna – UG	1.70	4.79	261	4.99	4.73	760	21.58	4.41	3,059	**28.27**	**4.50**	**4,080**
SUB TOTAL	**1.83**	**4.35**	**272**	**17.15**	**2.90**	**1,599**	**25.62**	**4.09**	**3,364**	**44.60**	**3.66**	**5,236**

Wiluna Mining Corporation Total Mineral Resources as of 24th August 2023

***An update to the table was made following the release 24 August 2023 to correct a minor error.**

Wiluna Mining Corporation Mineral Satellite Deposit Resource Summary as at 21st November 2021												
Mining Centre	MINERAL RESOURCES											
	Measured			Indicated			Inferred			Total 100%		
	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	**Mt**	**g/t Au**	**koz Au**
NOVEMBER 2021 WMC REPORTED MINERAL RESOURCES – SATELLITE DEPOSITS												
Matilda	0.03	2.18	2	1.24	1.72	68	0.88	2.71	76	**2.14**	**2.13**	**147**
Lake Way	0.27	1.73	15	0.68	2.27	50	2.11	1.56	106	**3.06**	**1.74**	**171**
Galaxy	0.01	1.87	1	0.03	2.24	2	0.11	3.35	12	**0.15**	**3.02**	**15**
SUB TOTAL	**0.31**	**1.78**	**18**	**1.95**	**1.92**	**120**	**3.10**	**1.95**	**194**	**5.35**	**1.93**	**333**

Wiluna Mining Corporation Satellite Deposits November 2021

Wiluna Mining Corporation Mineral Resource Summary as of 24th August 2023												
Mining Centre	MINERAL RESOURCES											
	Measured			Indicated			Inferred			Total 100%		
	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	Mt	g/t Au	koz Au	**Mt**	**g/t Au**	**koz Au**
DEPLETED NOVEMBER 2021 WMC MINERAL RESOURCES -TAILINGS & STOCKPILES												
Tailings	-	-	-	33.2	0.57	611	-	-	-	**33.2**	**0.57**	**611**
Stockpiles	-	-	-	3.03	0.50	49	-	-	-	**3.03**	**0.50**	**49**
SUB TOTAL	**-**	**-**	**-**	**36.2**	**0.57**	**660**	**-**	**-**	**-**	**36.23**	**0.57**	**660**

Wiluna Mining Corporation Depleted Stockpile and Tailings Resources 24th August 2023

Notes:

1.Tonnes are reported as million tonnes (Mt) and rounded to three significant figures; gold (Au) ounces are reported as thousands rounded to the nearest 1,000.

2.Data is rounded to reflect appropriate precision in the estimate which may result in apparent summation differences between tonnes, grade, and contained metal content.

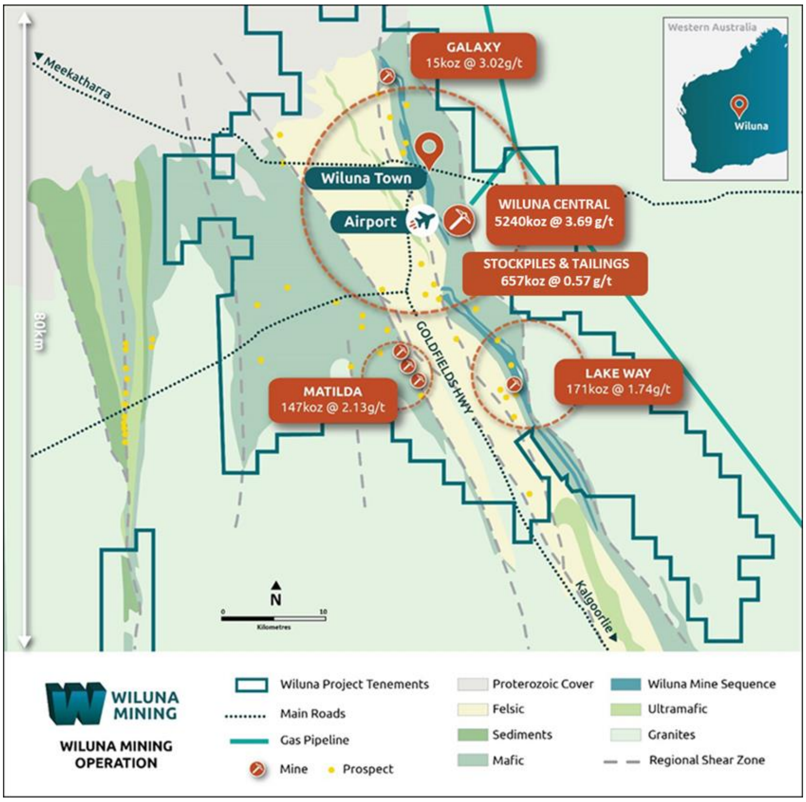
3.Mineral Resource at the Wiluna Central Mine area reported at cut-offs related to material type inside A$3,250 optimised pit shells (> 0.35 g/t for oxide and transitional material, and >0.70 g/t for fresh rock), and >2.3 g/t below the pit shells. The 2021 Mineral Resources for the satellite deposits were run within an optimised pit shell using a A$2,750 gold price.

4. Resource update work completed by Mining One Consultants was only completed over the Wiluna Central Mine area. The satellite deposits, stockpiles and tailings Mineral Resources are reported as released by Wiluna Mining Corporation in the 21 November 2021 ASX announcement[1].

[1] https://wcsecure.weblink.com.au/pdf/WMC/02453149.pdf

5. The stockpile and tailings Mineral Resources have been depleted by 870kt since the November 2021 state

The updated Mineral Resources relate to the Wiluna Central Mining area. This area is shown in relation to the satellite deposits in the Figure below.



Wiluna Central Mine Area and Satellite Deposits

Future Geological work will include:

- Further work on modelling the weathering surfaces is recommended prior to completion of a Feasibility level study. This will involve re-analysis of the weathering data contained within the Wiluna drilling database and updating of the current weathering surface profiles.
- Plan and complete Resource infill drilling in areas within the early mine plan particularly where inferred blocks are located close the proposed mining area to assist with Resource to Reserve conversion.
- Continued studies on Satellite deposits to identify if it is beneficial to bring these Resources into the mine plan. Follow-up on oxide potential targets located within the tenement holdings.

Geotechnical

The key open pit mining areas were inspected during July 2023 and no significant failures were observed. The slope conditions within East Lode, especially along the east slope within more weathered material, remain stable and of good condition, even after flooding of pit and subsequent dewatering.

Based on the performance of observed slopes, and preliminary back-analyses to verify updated material parameters, it is considered that the existing slope configurations are suitable for a PFS level of study.

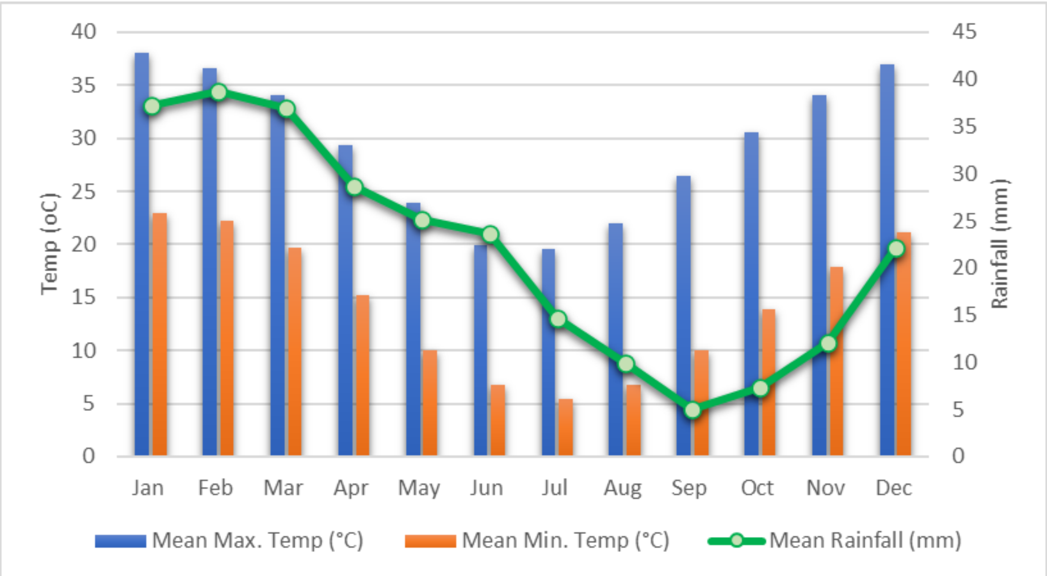
Future geotechnical work will require verification of assumed material parameters and confirmation that the observed materials in the existing pits correspond to those for all proposed PFS slopes across all the deposits.

Hydrogeology and Hydrology

The climate of the Wiluna area is semi-arid to arid, with an average annual rainfall of approximately 260 mm. The rainfall tends to be sporadic and varies markedly from year to year.

Within the Wiluna region there are a string of semi-terminal and terminal lakes. Drainage across the region is ephemeral and disorganised with no well-defined rivers. With evaporation exceeding precipitation, surface water runoff typically flows into salt lakes and evaporates while infiltration is limited.

The groundwater system underlying Wiluna Operations forms part of a regional phreatic regolith aquifer of the northern part of the Yilgarn Craton of Western Australia. Regional groundwater flow is controlled by the extremely low southward topographic gradient towards Lake Way-Lake Violet palaeochannel system. The regional groundwater body is saline to hypersaline (2000 mg/L to 200,000(+) mg/L) with lower salinity water (500 mg/L to 2000 mg/L) restricted to isolated recharge cells.



Rainfall and temperature averages from BoM Wiluna Station (BOM, 013012)

Mining

The Wiluna historically has been mined using both open pit and more recently underground mining methods. The pits are along a 4 km strike distance and includes both sulphide and free milling (quartz reef) ore. Historically mining exploited both sulphide and free milling ore, however the focus of this study is sulphide material. Where free milling material is encountered it is planned to be processed in the currently operating CIL circuit. The current plan allows sufficient sulphide stockpiles to be generated to ensure continuous operation of the concentrate circuit prior to recommencing sulphide processing.

Wiluna currently has the capacity to process free milling ore in conjunction with tailings material via the Wiltails repulping trommel and linear screen, as well as the ability to process sulphide ore in the float plant, producing sulphide concentrate. However, due to poor payability and marketing challenges, a BIOX processing facility is proposed for the sulphide ore. This study targets 4 years of continuous sulphide feed from the open pit at 750ktpa. The CIL processing facility is also available for processing oxide and transitional material when the BIOX plant is not processing material. When processing oxide or transitional material, the plant has a capacity of 1.7 Mtpa when processing oxide and 1.3 Mtpa when processing transitional material. Tailings retreatment through the Wiltails repulper gives a total throughput of 3.2 Mtpa.

Underground operations are planned to begin prior to the depletion of the open pit sulphide ore. Early works can be undertaken underground, such as diamond drilling, dewatering and rehabilitation of access development, whilst the open pits are in operation, this should allow a seamless transition from open pit ore to underground ore.

This study also investigates the timeline for environmental, heritage and mining approvals for mining the Wiluna deposit.

Wiluna Mining Centre Open Pit Ore Reserve estimate

Wiluna Mining Corporation Open Pit Ore Reserve Summary as of 1st November 2023										
Wiluna Mining Centre Open Pit	Cut-off	CONTAINED ORE RESERVES								
		Proved			Probable			Total		
	g/t Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au
NOVEMBER 2023 MINING ONE MINERAL RESERVES – WILUNA CENTRAL MINE AREA										
Bulletin Oxide	0.35				32.3	0.70	0.7	**32.3**	**0.70**	**0.7**
Bulletin Trans	0.42				182.7	1.13	6.7	**182.7**	**1.13**	**6.7**
Bulletin Fresh	0.87				230.8	2.47	18.3	**230.8**	**2.47**	**18.3**
West Lode Oxide	0.35				154.5	0.61	3.1	**154.5**	**0.61**	**3.1**
West Lode Trans	0.42				422.7	0.86	11.7	**422.7**	**0.86**	**11.7**
West Lode Fresh	0.87				1,159.1	2.77	103.2	**1,159.1**	**2.77**	**103.2**
East Lode Oxide	0.35				138.0	0.50	2.2	**138.0**	**0.50**	**2.2**
East Lode Trans	0.42				332.2	1.08	11.5	**332.2**	**1.08**	**11.5**
East Lode Fresh	0.87				544.0	2.51	43.9	**544.0**	**2.51**	**43.9**
Total Oxide	0.35				325.4	0.57	6.0	**325.4**	**0.57**	**6.0**
Total Trans	0.42				937.6	0.99	29.9	**937.6**	**0.99**	**29.9**
Total Fresh	0.87				1,933.8	2.66	165.4	**1,933.8**	**2.66**	**165.4**
Total OP	n/a				**3,196.8**	**1.96**	**201.3**	**3,196.8**	**1.96**	**201.3**

Wiluna Mining Corporation Underground Ore Reserve Summary as of 1st November 2023										
Wiluna Mining Underground Reserves	Cut-off	CONTAINED ORE RESERVES								
		Proved			Probable			Total		
	g/t Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au
NOVEMBER 2023 MINING ONE MINERAL RESERVES – WILUNA CENTRAL MINE AREA										
Total UG	2.6	895.8	4.43	127.7.0	513.0	3.88	64	**1,408.7**	**4.23**	**191.7**

Wiluna Mining Corporation Tailings Ore Reserve Summary as of 1st November 2023										
Wiluna Mining Tailings Reserves	Cut-off	CONTAINED ORE RESERVES								
		Proved			Probable			Total		
	g/t Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au	kt	g/t Au	koz Au
NOVEMBER 2023 MINING ONE MINERAL RESERVES – WILUNA CENTRAL MINE AREA										
Total Tailings	**-**	-	-	-	22,962.0	0.56	410.8	22,962.0	0.56	410.8

Processing

The feed to the processing plant will be a combination of free milling oxide/transition/sulphide, refractory sulphide and historic tailings. The free milling ore and tailings will be processed by the current leach operation, and the tailings reclaimed using the newly constructed scrubber circuit. For refractory sulphide ore, the BIOX circuit will be refurbished to enable onsite processing of the concentrate to produce gold doré. The refractory sulphide ore will be processed at 750 ktpa through the existing crushing, grinding and flotation circuits, the concentrate oxidised in the BIOX circuit, and the BIOX residue leached and recovered to produce gold doré. Each campaign will be supplemented by tailings reclaim through the scrubber circuit for a total throughput of 3.2 Mtpa.

The estimated capital cost to refurbish the BIOX circuit and three additional thickeners is approximately A$40M. The estimate was developed to Class 4 (±25%). The additional thickeners are required for the water balance and manage concentrate storage, and include a new flotation tailings thickener, a new neutralisation discharge thickener and refurbishing the unused oxide/grinding thickener as a final tailings thickener.

The estimated operating cost for 750 ktpa of refractory sulphide and up to 3.2 Mtpa of tailings retreatment is A$58M/y. The operating costs on a per tonne basis for the different ore processing are below.

Type	Unit	Value
Tailings Retreatment (Grinding Circuit)	A$/t tailing	15.20
Free Milling	A$/t ore	22.96
Sulphide Flotation	A$/t ore	39.78
BIOX	A$/t concentrate	303.64
Tailings Retreatment (Scrubber Circuit)	A$/t tailing	5.94

Tailings

The current tailings storage facility, TSF K, is expected to reach capacity of the approved crest height of 518.5 mRL by Q3 2025 based on the current planned throughput. As of the start of November 2023, there is approximately 5.1 Mt remaining to 518.0 mRL.

The final approved crest height for TSF K is 537 mRL, however, there is insufficient storage capacity for TSF K to sustain throughput at 3.2 Mtpa and store the Life of Mine (LOM) tailings for the Production Target Case. Another TSF is therefore required to supplement TSF K for the Production Target Case. A preferred location, design and cost for a new TSF (TSF L) were developed. The capital cost for the crest lifts on TSF K and the construction of TSF L was estimated to be $38M over the LOM.

Infrastructure

An upgrade of part of the Wiluna village is planned to replace some of the accommodation blocks. The upgrade includes demolition of a number of the existing blocks and installation of 25 four-room modules as a replacement. The estimated capital cost is approximately $8M.

A centralised wastewater treatment facility is also planned at a cost of $1.5M. This would allow treatment of site wastewater, whereas currently the wastewater is collected and disposed of by tanker or evaporated from ponds. Tanker removal is an ongoing expense, and licensing of these types of facilities is expected to become more difficult over time.

The site power demand is expected to increase to approximately 12.2 MW with restart of the BIOX circuit and underground operations, which is within the capacity of the power plant facility onsite. The contracted gas supply and transportation agreements will need to be increased.

Water from the eastern borefield will be used for the grinding, flotation, BIOX process, village, TSF decant return and mine dewatering water will be used for tailings retreatment. While recent abstraction rates from the eastern borefield has not sustained the 1.5 GL/y license limit, upgrades are planned to increase abstraction levels to the licenced limit. For tailings retreatment, the unused oxide/grinding thickener will be refurbished to increase the recycle of water within the processing plant, to supplement the TSF decant return and mine dewatering water and will sustain operation at 3.2 Mtpa.

Heritage, Environment and Permitting

Wiltails processing construction, commissioning and mining of the Western Cell tailings for treatment have existing Mining Approval. New Mining Approval will be required for ongoing Wiltails and ore treatment, as well as open pit mining at Bulletin and West Lode cutbacks, and mining of tailings from TSF C and TSF H. Refurbishment and operation of the BIOX plant should also be incorporated in this Mining Proposal. Mining Approval will also be required for open pit mining of East Lode cutback.

There is existing Mining Approval and DWER abstraction licence for the Eastern Borefield, which provides good quality water for the treatment plant. Additional bores have been constructed in this area, and Mining Approval is required for construction of the pipeline and overhead powerline and for ongoing operation of the expanded borefield under existing abstraction limits. Renewal of water abstraction licences will be required early in 2024 under normal renewal processes.

Existing Mining Approval covers a small area for mining of calcrete material for use in pH balancing associated with BIOX treatment. Registered Heritage sites cover some calcrete mining areas, which will need to be resolved by December 2025 to excise parts of this area under s18 Heritage Act provisions. Other calcrete mining areas will require proper identification for suitability of quantity and quality and new Mining Approval to enable calcrete mining by December 2025, in preparation for commissioning and operation of the refurbished BIOX plant.

With the BIOX operation scheduled for commissioning mid-2026 the calcrete Mining Approvals will be required in advance of this time.

For the Production Target case, existing Mining Approval covers underground mining at Bulletin and Happy Jack mines and associated ore treatment, which can be resumed with notification of resumption being provided to the Mines Safety Inspectorate.

Economic Evaluation

A range of open pit and underground mining options in conjunction with tailings reprocessing were evaluated to explore their relative value for the Wiluna assets. Both open pit and underground mining were used to provide a minimum six years of flotation feed to produce gold doré via BIOX.

Oxide and transition ore are treated by CIL when available and flotation tailings are also treated through the CIL plant. Tailings reprocessing is used to increase the throughput to a total 3.2 Mtpa to maximise utilisation of the plant.

The preferred case presented is the Production Target case, which has BIOX production commencing in July 2026 using open pit ore. Prior to this oxide and transition material from the open pits are treated through CIL, along with historic tailings. Underground mining fresh material commences in October 2027 to supplement production of fresh material from open pits.

This production target must be read in conjunction with the cautionary statement that there is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

The Production Target physicals include the following:

Material Source	Mt	Au (g/t)
Open Pit	3.84	2.09
Underground	1.95	4.29
Tailings Remining	24.3	0.55

The Production Target case has the following metrics:

Gold Price	A$2880/oz	A$3084/oz[1]
Gross Cash Surplus	$435M	$558M
Less Growth CAPEX (including BIOX refurb)	$73M	$73M
Net Cash Surplus	$364M	$488M
NPV_8	$198.6M	$282.0M
IRR	53%	112%
CER	2.7	3.85
Operational Efficiency	0.75	0.70
Payback	5.5	3.8
AISC	$2,015	$2,015
MCNCF	-$82.6M	-$66.4
Gold Produced (koz)	641.7	641.7

[1]Gold price at time of writing.

[2]Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.

[3]Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.

[4]Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

The Production Target has a maximum cumulative negative cash flow (MCNCF) of -$82.6M which represents the financing required. FTI Consulting advised this was a key performance measure, along with NPV and undiscounted cash flow.

The Production Target has been developed as part of the PFS. Further work is underway to progress the study to Feasibility Study (FS).

The following is recommended:

Short term

- Progress studies for BIOX refurbishment, tailings storage, permitting, environmental approvals, and other critical work to progress the PFS and Feasibility Studies (FS).

Long term

- Expand process and mining to optimum throughput with tailings remining and fresh ore production to doré via BIOX.

Next steps

Further work to progress the study to a FS level of detail is recommended.

2 INTRODUCTION

Mining One Pty Ltd (Mining One) was engaged by FTI Consulting to complete a Pre-Feasibility Study (PFS) for the Wiluna Mining Operation, part of the Wiluna Mining Corporation Limited (WMC). The Wiluna Mining Operation is located at the northern end of the Western Australian goldfields approximately 530 north of Kalgoorlie (Figure 2-1).

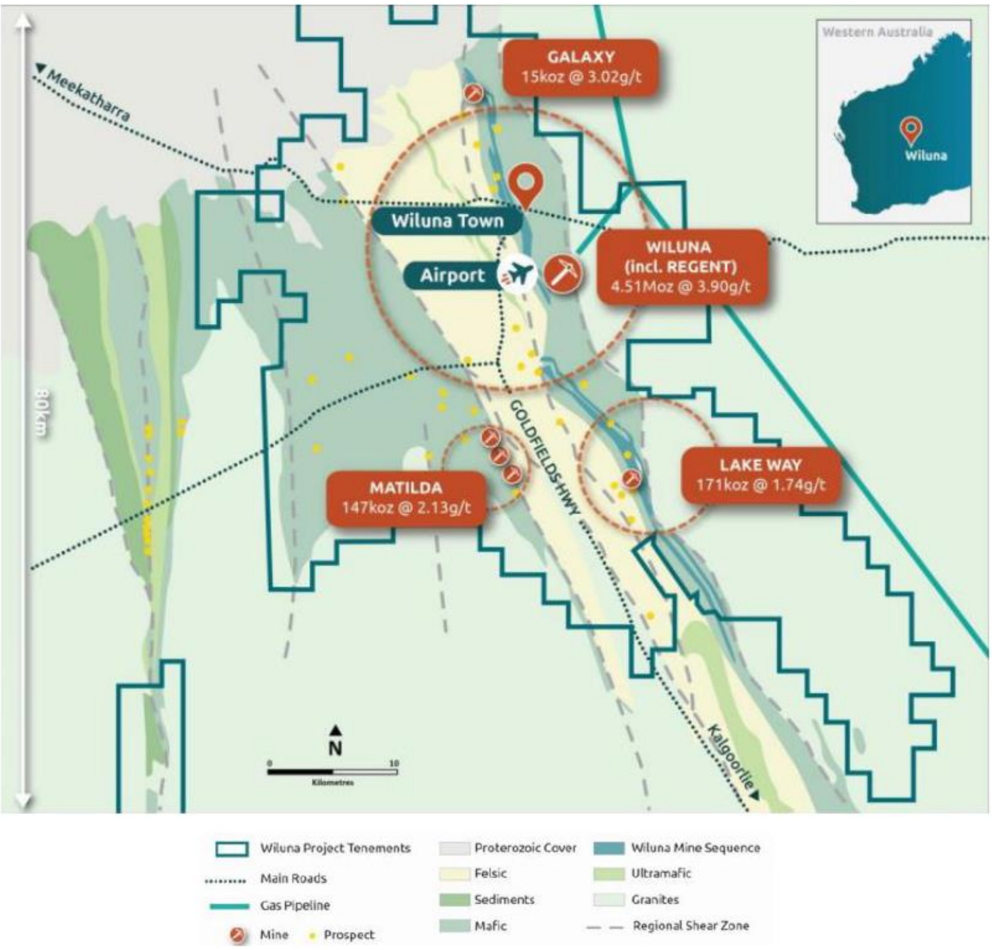


Figure 2-1: Wiluna Site Location in Western Australia

Wiluna Mining Corporation (WMC) owns and operates the Wiluna Gold Plant, village, bore fields, tailings storage facilities (TSFs) and tenements associated with the operation. The gold deposits are:

- Matilda Deposit within M53/034 and M53/041.
- Williamson Deposit within M53/797.
- Wiluna Gold Deposits within mining leases M53/30, M53/200, M53/32, M53/40, M53/44, M53/468, M53/96 and M53/50 (and other peripheral and miscellaneous leases).

The Wiluna gold deposits are located within the Wiluna Goldfield, close to the town of Wiluna in Western Australia. The nearest capital city is Perth, 750 km to the southeast. The closest regional centres are Kalgoorlie, 540 km to the south and Meekatharra, 183 km to the west.

FTI Consulting were appointed as voluntary administrators of the WMC group of companies on 20 July 2022. A Deed of Company Arrangement ("DOCA") proposed by the administrators was approved by creditors on 7 July 2023.

Following appointment of the administrators, mining and processing of sulphide ore to produce saleable concentrate continued until December 2022. Production then shifted to processing stockpiled sulphides, followed by free-milling ore from stockpiles. In March 2023, a 3 month trial reprocessing tailings was performed, which confirmed recovery assumptions. From June 2023, material from the dump leach stockpile has been treated. In September 2023, the Wiltails repulper for tailing reprocessing will be commissioned, which will allow co-processing of tailings and dump leach material, or processing of tailings only at a higher rate.

Mining One were first engaged in February 2023 to review and investigate the geology, geotechnical, mining (open pit and underground) and processing of Wiluna material and develop value opportunities to increase the ongoing viability of the Wiluna operation.

The Value Optimisation Study was completed in April 2023. The study identified a preferred long-term development case for Wiluna based on tailings reprocessing and flotation treatment of fresh ore to produce a concentrate, which is subsequently processed to doré by BIOX. Oxide and transition ore are processed in the existing CIL circuit when sufficient stocks are available.

The following opportunities were identified during the Value Optimisation Study:

Short term

- Operate tailings reprocessing, with oxide feed when available (dump leach feed).
- Investigate options to increase tailings and oxide throughput with low capital.

Medium term

- Develop the opportunity to run sulphide ore at 750 ktpa with the current float plant and a refurbished BIOX plant, along with tailings through CIL plant at relatively low capital.

Long term

- Expand processing and mining to the optimum throughput with tailings remining and fresh ore production to doré via BIOX.

Work commenced immediately on the short term opportunities. To develop the medium term options for the site, the Value Optimisation Study progressed to a Pre-Feasibility Study. The basis of the study is:

- Develop open pit mining only options, while working on development of open pit and underground mining options.
- Refurbish the BIOX plant for treatment of sulphide concentrate to doré at 750 ktpa.
- Oxide, transition, and free milling sulphide material treated through the existing CIL facility.
- Flotation tailings treated through existing CIL.
- Tailings retreatment through Wiltails repulper to give a total throughput of 3.2 Mtpa, compared to the current maximum 2.2 Mtpa.
- Development of site water balance and tailings storage options, as well as environmental and permitting requirements.

- Integrate underground mining into the production schedule to manage project value and risk.

Wiluna's long term opportunities require more detailed studies to define and de-risk. That work will be conducted as the plan to return to underground mining is developed, along with other work to progress the study to a FS.

This PFS presents the results of the study work conducted for the restart of open pit and underground mining, refurbishment of BIOX, and tailings reprocessing to develop a low capital, high value option for Wiluna.

3 GEOLOGY

3.1 Introduction and Scope

Mining One Consultants were engaged by Wiluna Mining Corporation (Subject to Deed of Company Arrangement) to construct an independent Mineral Resource model estimate of the Wiluna Mining Centre gold deposit located in Western Australia. This estimate has been reported under the JORC 2012 guidelines.

The model was required to ensure there was a Mineral Resource estimate that was suitable for both open pit and underground potential mining scenarios. The updated model covers the South, West and North Wiluna areas of the project.

3.2 Deposit Location

The regional location of the Wiluna Gold Project is in the Mid West region of Western Australia, see Figure 3-1 and Figure 3-2 below. Is it situated on the edge of the Western Desert at the gateway to the Canning Stock Route and Gunbarrel Highway. The local town of Wiluna is the main service centre, where both the local Martu people live and fly-in/fly-out workers for the mine are based.

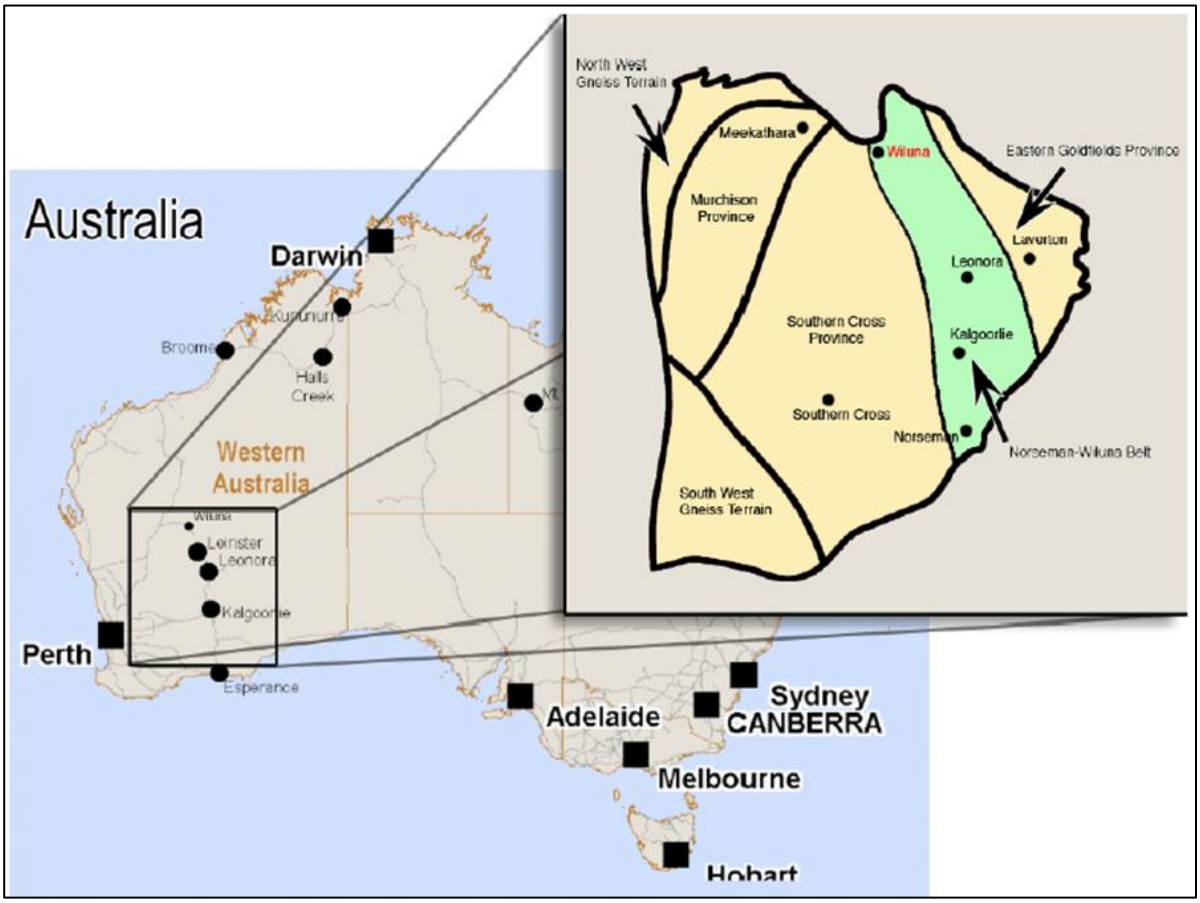


Figure 3-1: Wiluna Location Map (Lambert-Smith, n.d)

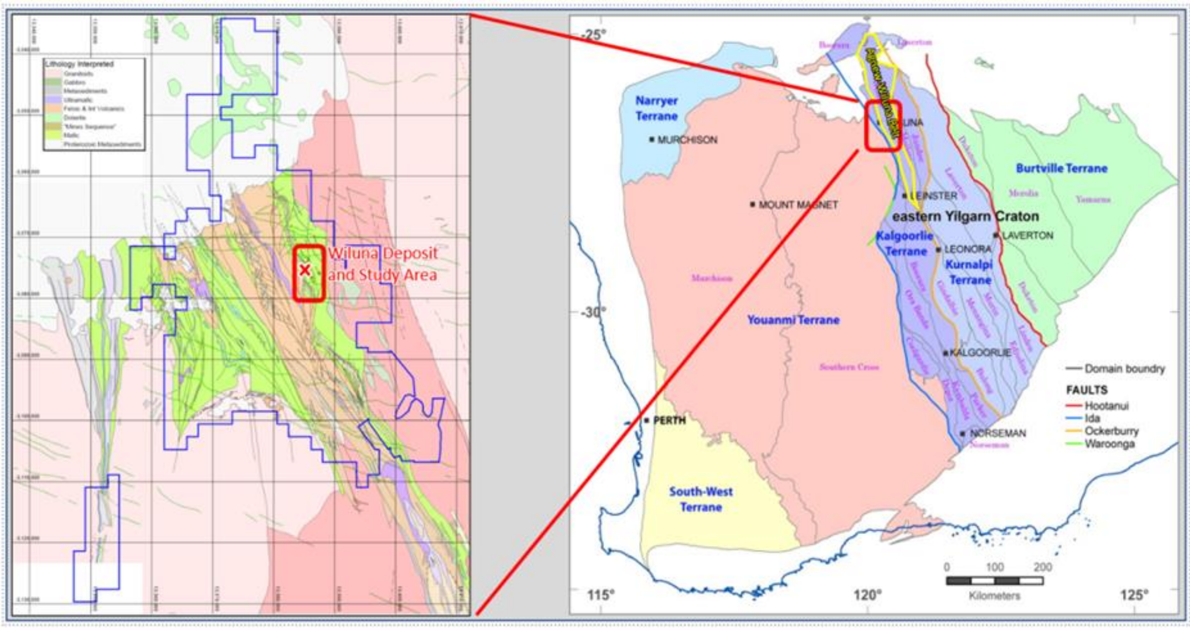


Figure 3-2: Geological Map of the Yilgarn Craton and its Terranes (Innes, 2021)

3.3 Geological Setting

The Wiluna Gold Mine is located in the northeastern Goldfields region of Western Australia. The geology of the mine consists of a complex structural regime that has resulted in multiple mineralization styles, including orogenic gold deposits.

The main mineralized structures at Wiluna include the Wiluna Main, East and Bulletin shear zones, which have been folded and faulted over time. These structures are hosted in the Archean-aged Wiluna greenstone belt, a sequence of volcanic and sedimentary rocks that formed over 2.7 billion years ago.

The Wiluna Main shear zone is the most significant mineralized structure at the mine and hosts the majority of the gold resources. It comprises a series of interrelated, east-northeast trending shears and folds that have been steeply dipping, and contain multiple generations of quartz veins and sulfide mineralization.

The East shear zone is a parallel structure to the Wiluna Main and hosts both gold and nickel mineralization. The Bulletin shear zone, located to the east of the Wiluna Main, is a broad, northeast-trending structure that contains significant gold mineralization.

Overall, the complex geological setting of the Wiluna Gold Mine has resulted in a diverse range of mineralization styles. The regional geological setting is shown in Figure 3-3 below.

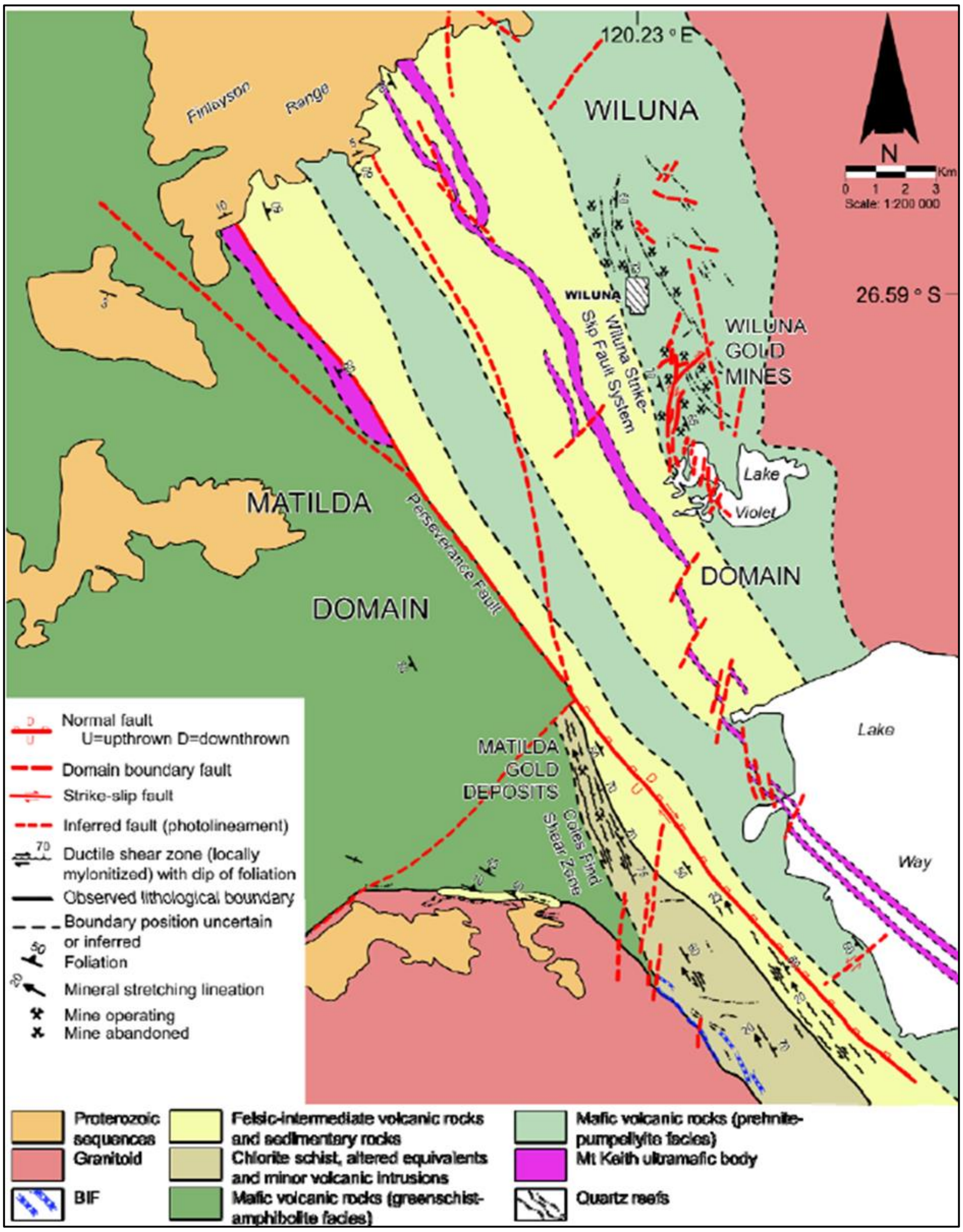


Figure 3-3: Regional Geological Map showing the Matilda and Wiluna Domains (Lambert-Smith, n.d.)

3.4 Deposit Mineralisation

Mineralization at Wiluna is both hosted and controlled by a north- and northeast-trending, steeply east and west-dipping sets of dextral strike-slip faults that runs through the area (interpreted to be a subsidiary structure of the larger Perseverance Fault). Formation of this structure may be due to the emplacement of the nearby granitoid bodies (Lambert-Smith, n.d.).

Gold mineralization is comprised of two main types. Firstly, an earlier non-refractory quartz reef hosted style and a refractory lode style. The quartz vein hosted mineralization is hosted in stratigraphic reefs emplaced along discontinuities within the stratigraphy (Apex Gold PTY LTD, 2011).

The refractory mineralization is controlled by the Wiluna Fault System. The ore shoots generally plunge to the north, within an overall trend to the south with the stratigraphy. Mineralization is localized along faults at dilational bends or jogs, fault intersections, horsetail splays and within subsidiary overstepping faults (Apex Gold PTY LTD, 2011). The wall rock is altered, along with the structural deformation and mineralization is asymmetric in relation to the main fault planes due to the dextral fault movement post mineralization. This forms a distinct sequential wall-rock alteration around the faults. Alteration assemblages can vary depending on the host rock, but two major alteration zones can be defined in general which include a distal chlorite-calcite and proximal sericite-silica-albite-dolomite/ankerite-arsenopyrite-pyrite zone. Stibnite is also present in a few deposits such as Moonlight, West Lode and Happy Jack (Apex Gold PTY LTD, 2011).

Gold occurs at sub-microscopic particles within or in solid solution with sulfide minerals such as pyrite and arsenopyrite. Gold is not particularly associated with pyrite mineralization at Wiluna and large volume percentages do not always indicate good grade.

Arsenopyrite occurs as fine-grained (<1 mm) silver coloured rhombs, which are mostly disseminated throughout the groundmass of the wall rock. It is closely associated with Au mineralization, with high Au grade generally coinciding with high arsenic (As) concentrations. Au occurs as both solid solution and as sub microscopic particulate inclusions within the crystals (Lambert-Smith, n.d.).

3.5 Exploration History

Various exploration and drilling programs have occurred at different times in the Wiluna gold region.

The East Lode has experienced surface drilling between 1999 – 2004, testing the old workings above 1200 mRL. Drill holes intersected both the hanging and footwall zones that have not been stopped by previous workings (Apex Gold PTY LTD, 2011).

The East Lode north area underwent Initial drilling between 1991 and 1997 identified numerous targets at depth throughout the Wiluna mine area. Following up drilling between 1998 – 2001 identified some of the more promising intersections. Apex Minerals started a program of resource definition on East Lode North in late 2006 from the surface.

East Lode South was discovered from surface RC drilling, which was followed up from underground. This resulted in stopes between 1200 and 1400 mRL. Further extensional drilling from 1310 level identified further mineralisation to the 1200 mRL and is open to depth (Apex Gold PTY LTD, 2011).

The West Lode seen initial surface drilling between 1991 and 1997 identifying numerous targets at depth. Further drilling is required to evaluate the extents of mineralisation and to upgrade the inferred resource to indicated.

Initial surface drilling to test the northern extensions of West Lode discovered additional significant mineralisation on another splay structure (Apex Gold PTY LTD, 2011). Additional surface drilling at the end of 2007 to mid-2008 discovered Calvert but was difficult to accomplish due to limited favourable drill positions around North Pit and the core yard.

No significant information is available about drilling of Calais. However, infill drilling during early 2009 confirmed down plunge continuation of the upper shoot mined on 750 – 800 levels, which identified significant mineralisation.

Burgundy was discovered during the brief tenure of Oxiana. Subsequent drilling by Apex Minerals uncovered extensive mineralised system that was developed over a nine-month period. Infill drilling was abandoned due to the oblique angle and distance required and ground conditions caused fine targeting to be almost impossible (Apex Gold PTY LTD, 2011). Further drilling was postponed until more suitable positions became available.

Drilling during the 1990's identified significant surface mineralisation of Essex extending at depth. Further drilling by Normandy via an exploration drive at the bottom of Happy Jack underground discovered another major mineralised zone (Apex Gold PTY LTD, 2011).

Previous drilling at Henry by Agincourt and Apex Minerals has delineated a resource between 550 and 700 mRL with an average drill spacing of 30m. Further close quarter drilling for ore development and resource definition was accomplished from within the deposit, upgrading the area between 615 – 714 mRL to an indicated classification (Apex Gold PTY LTD, 2011).

3.6 Drilling Source Data

The complete Wiluna drilling database was supplied to Mining One where a combination of diamond and reverse circulation drillholes were used to inform the updated block model. A total of 38,149 drillholes were contained within the Wiluna_MM.mdb Access database. A total of 1,098,838 discrete assay intervals are also contained within the database. Figure 3-4 and Figure 3-5 below displays the extensive drill coverage that exists across the Mineral Resource deposit area.

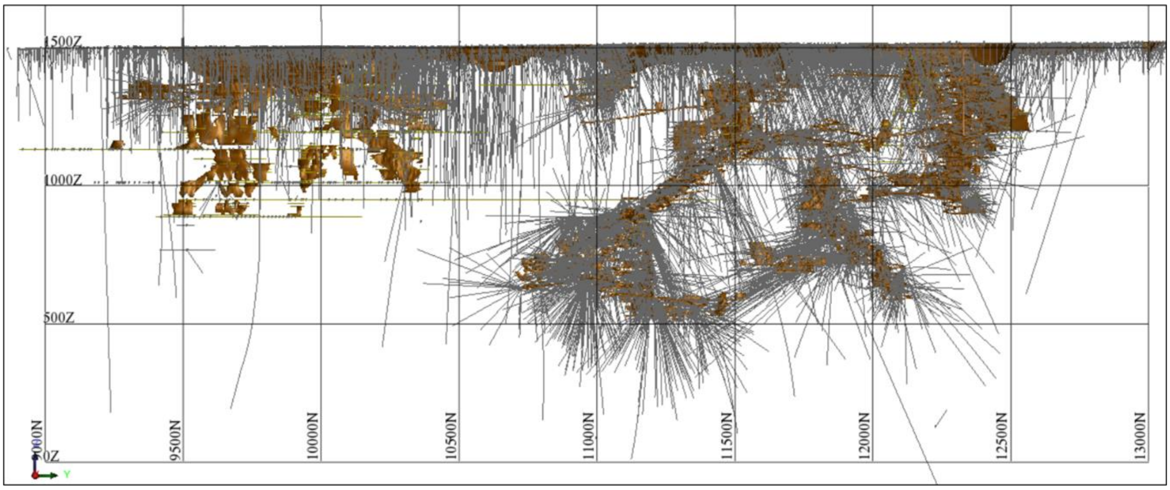


Figure 3-4: Wiluna Drilling Dataset Long Section View – Mining Centre Area

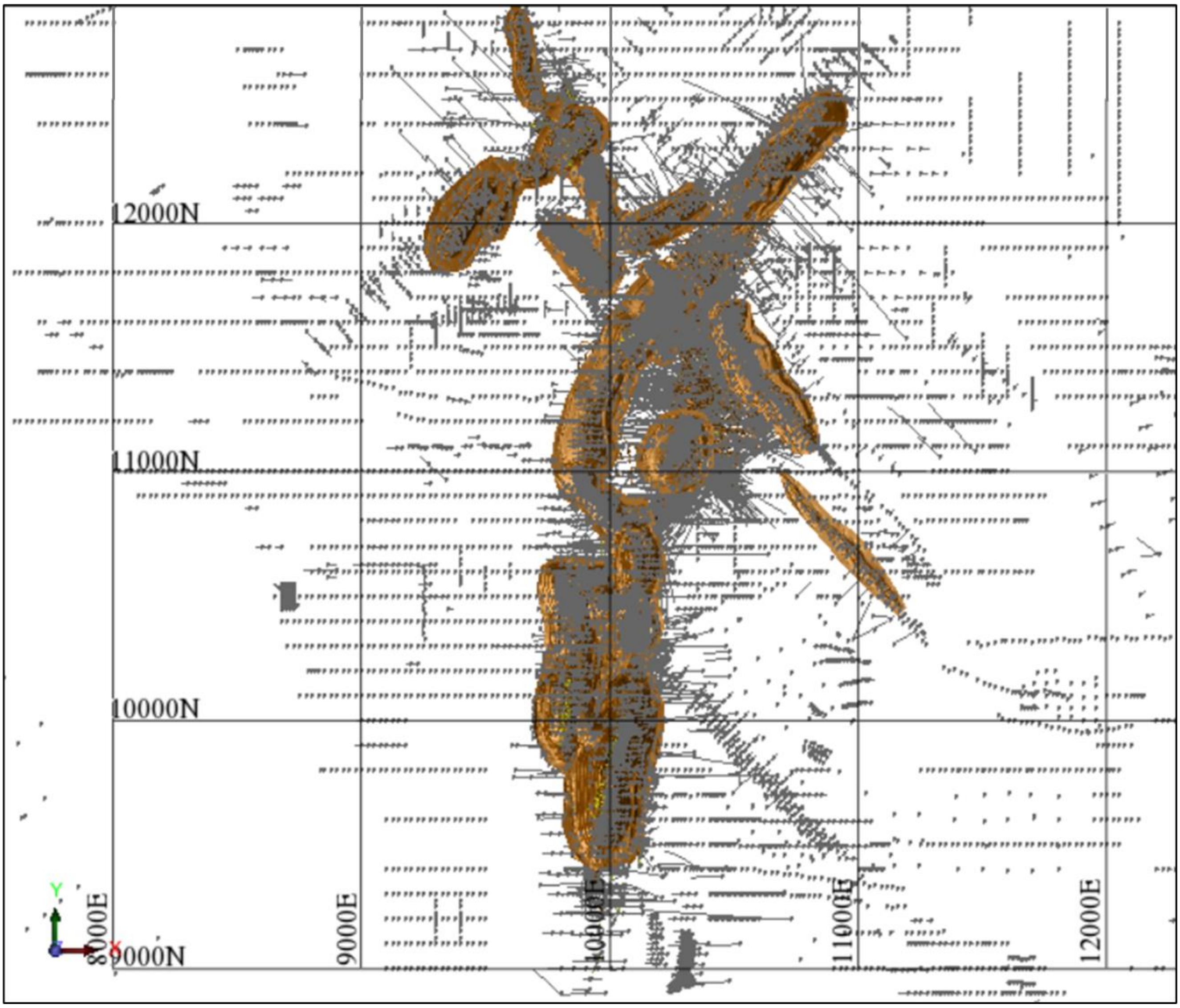


Figure 3-5: Wiluna Drilling Dataset Plan – Mining Centre Area

3.7 Sample QAQC

Wiluna Mining Corporation has an industry standard set of QA/QC procedures in place, which are relevant for reporting a gold resource. This includes crush grind checks, appropriate use of certified reference materials (CRM) in the form of blanks and standards, insertion of field duplicates, adoption of certified laboratories, and appropriate use of statistical methods to assess related data. A CRM labelling procedure, where the CRM label is stuck on the cut sheet, provides a method to ensure any CRM failures can be tracked and accounted for. Review of the QAQC results available do not indicate any fatal errors within the drilling and sampling database.

3.8 Density Data

A total of 13,942 bulk density measurements have been collected at Wiluna, of which, 3,147 are within the Wiluna North area. Wiluna South has significantly less bulk density measurements of 651 samples. While Wiluna West has the highest number of bulk density measurements with 5,313 in total. The bulk density data has been flagged utilizing the same wireframes as the assay samples and has been undertaken by domain and weathering state. Backfill material was assigned a 2.1 density value.

The average bulk densities used for the Wiluna validation model are summarized in the Table 3-1, below.

Table 3-1: Density Values used in Wiluna Validation Model

Material Type	Mineralisation	Waste
Oxide	2.00	2.19
Transition	2.50	2.52
Fresh	2.80	2.80

3.9 3D Domain Modelling

The domain models for the Wiluna deposit were created using a 0.2 ppm Au grade cut off for the low grade domains and a 2 ppm Au cut-off for the high grade domains. The domains were created in Leapfrog software with some of the high grade domains supplied by the Wiluna Geologists and the remainder independently created by Mining One. Due to the nature of the supplied high-grade wireframes from site and the inclusion of economic compositing to generate the other volumes, individual assays within the domains may be higher or lower than these thresholds. These domains are shown in Figure 3-6.

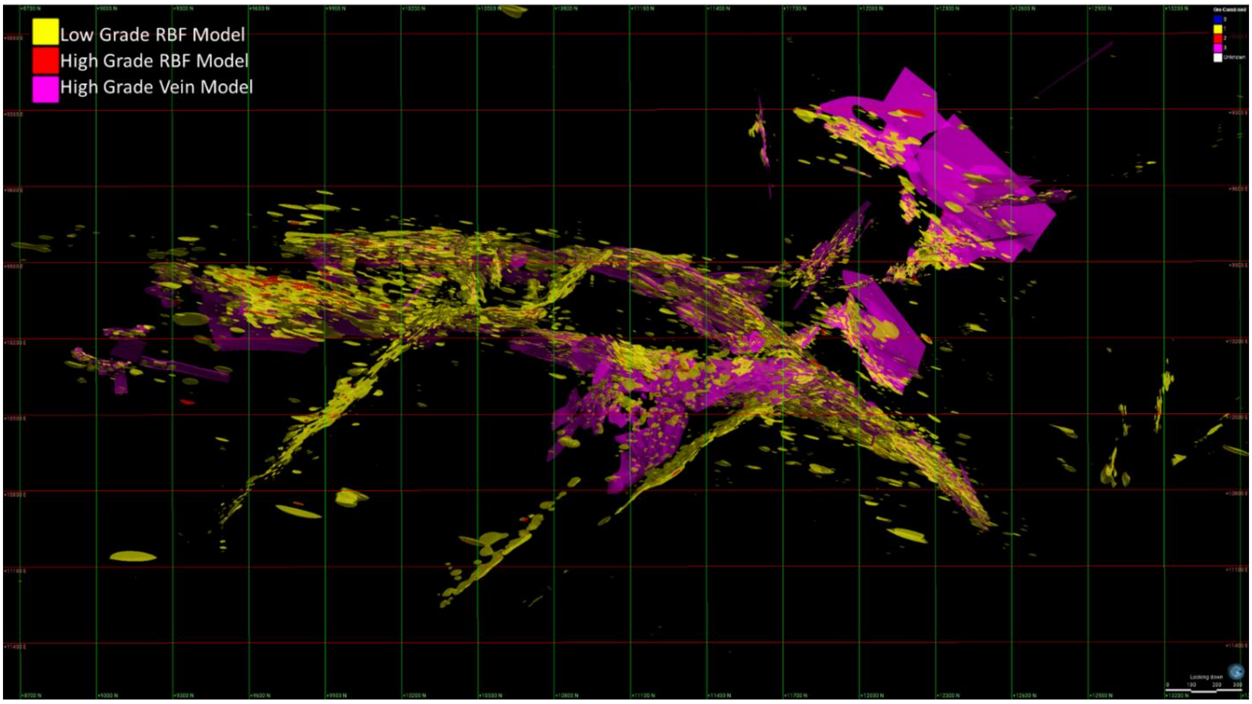


Figure 3-6: Wiluna Domain Models (North to the Right) – Plan View

3.10 Compositing and Statistical Analysis

Composites were created from the drilling dataset with a 1m composite length chosen. The average sampling interval within the assay dataset is 1m. This composite length is suitable for both open pit and underground potential mining scenarios.

The summary statistics for both the high grade and low grade domains are summarised in Table 3-2 and Table 3-3 below.

Table 3-2: Wiluna High Grade Composite Statistics

Variable	Au_ppm	As_ppm	S_pct	Sb_ppm
Number of samples	96407	26326	61811	19362
Minimum value	0.005	0.01	0	0
Maximum value	110	268560	25.16	76500
Mean	4.54683	5591.769	1.4791	74.57652
Median	2.46958	3301.6	1.164	30
Variance	51.1297	53301771	1.5246	1323611
Standard Deviation	7.1505	7300.806	1.2348	1150.483
Coefficient of variation	1.57263	1.305634	0.8348	15.42688

Table 3-3: Wiluna Low Grade Composite Statistics

Variable	Au_ppm	As_ppm	S_pct	Sb_ppm
Number of samples	266146	49092	106384	30975
Minimum value	0.005	0	0	0
Maximum value	30	27500	34.06621	13259.2
Mean	0.598352	1163.883	0.550772	29.42255
Median	0.32	500	0.37	12.7
Variance	1.328524	3507978	0.531361	44704.85
Standard Deviation	1.152616	1872.96	0.728945	211.4352
Coefficient of variation	1.926319	1.609234	1.323497	7.186162

3.11 Oxidation Modelling

The oxidation state of material within the Mineral Resource model was coded using surfaces provided by the site geologists which were created from the drilling database. Blocks were coded oxide, transition or fresh according to these surfaces. Oxidation codes assigned to the model are 1= Fresh, 2=Transition and 3=Oxide. The spatial distribution of the oxidation coding is shown in Figure 3-7 below.

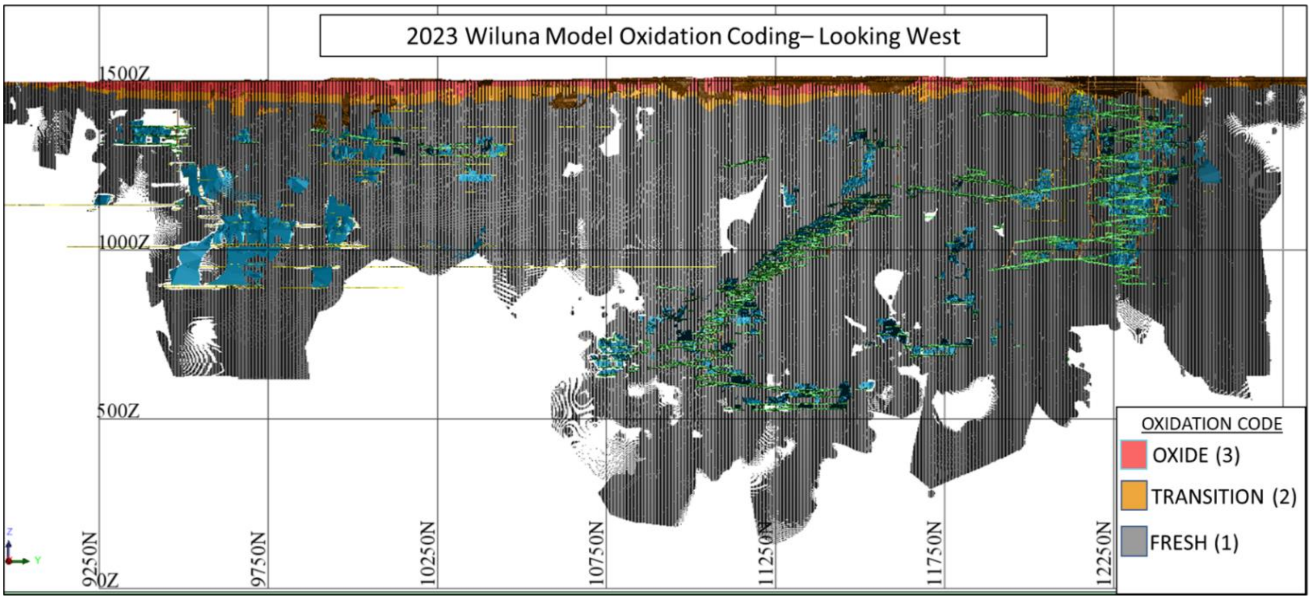


Figure 3-7: Wiluna Oxidation Coding – Looking West

3.12 Top Cuts

Analysis of the composite files indicates that top cuts located at 110 ppm Au an 30 ppm Au for the high grade and low grade domains respectively brings the Coefficient of variation closer to 1.5 for the high grade and below 2.0 for the low grade domains. The histograms for each domain are shown as follows.

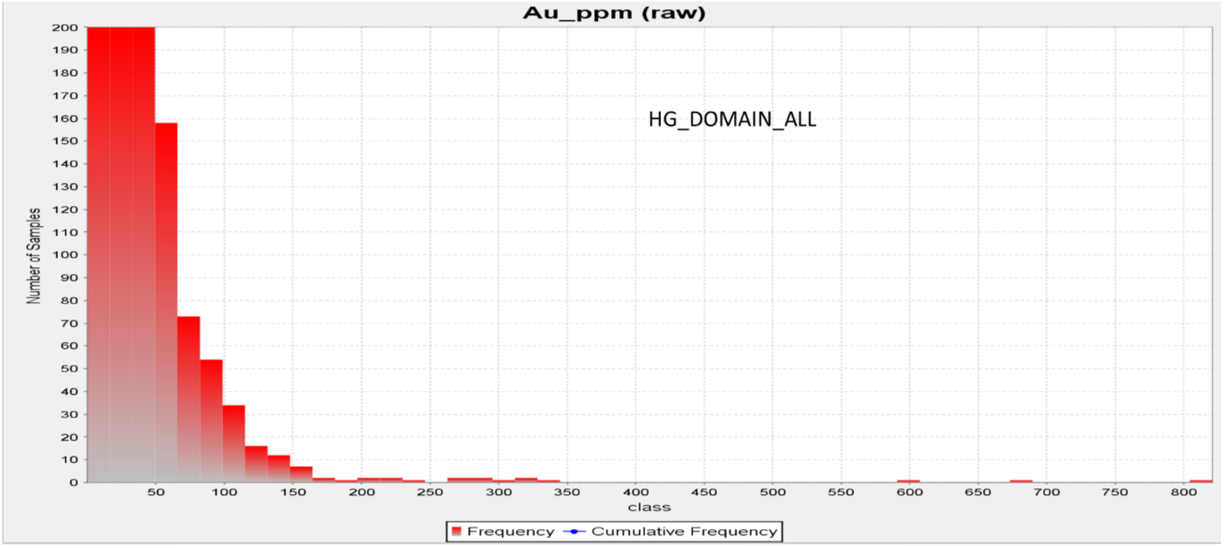


Figure 3-8: Wiluna High Grade Au ppm – Histogram

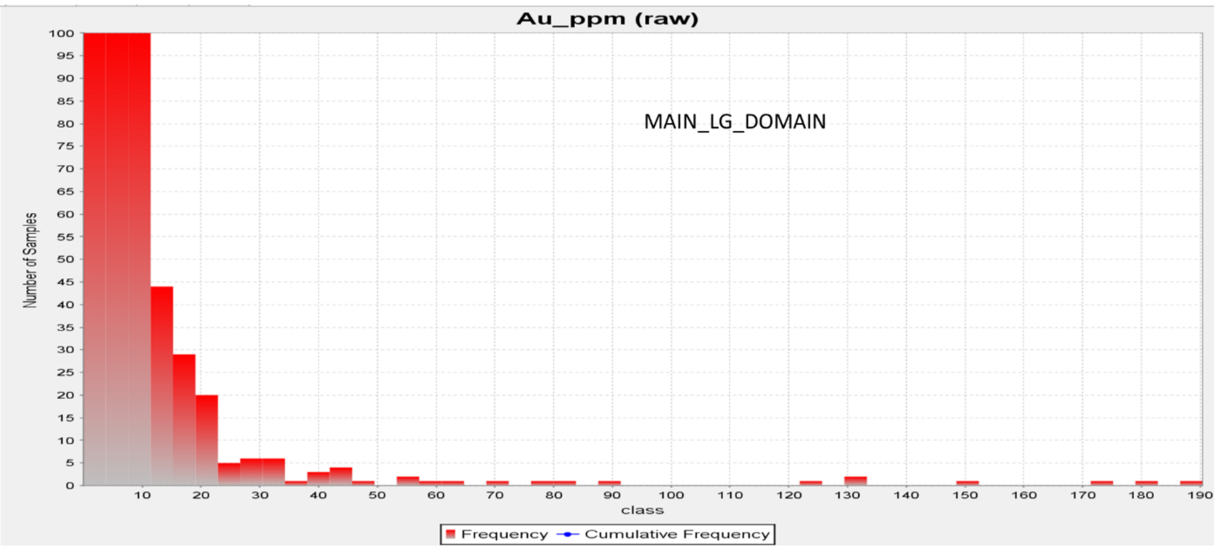


Figure 3-9: Wiluna Low Grade Au ppm – Histogram

3.13 Block Model Construction

The validation block model was constructed in Surpac with the South, West and North Wiluna deposits included in the one model file. The parent block size used was 10m (Y) by 5m (X) by 5m (Z) with sub blocking down to 2.5m (Y) by 1.25m (X) by 1.25m (Z). The block model parameters are summarised in Table 3-4, below.

Table 3-4: Wiluna Block Model Extents

Type	Y	X	Z
Minimum Coordinates	8600	8950	100
Maximum Coordinates	13700	11400	1600
User Block Size	10	5	5
Min. Block Size	2.5	1.25	1.25
Rotation	0	0	0

3.14 Block Model Attributes

The block model attributes used in the 2023 validation model are summarised in Table 3-5, below.

Table 3-5: Wiluna Validation Model Attributes

Attribute Name	Type	Description
as_ppm	Calculated	695.4*au_ok_ppm+1561
au_ok_ppm	Float	Ordinary Kriged Gold Grade
ave_dist_comps	Float	Average distance to composites from block centroid
azimuth	Float	azi
block_var	Float	block variance
density	Float	ORE: OXIDE=2.00, TRANS=2.50, FRESH=2.80 WASTE: OXIDE=2.19, TRANS=2.52, FRESH=2.8 BACKFILL=2.10
dip	Float	ellipsoid dip
dip_dir	Float	ellipsoid dip direction
dist_near_comp	Float	Distance to nearest composite from block centroid
krig_var	Float	Kriging variance
mined	Integer	1=mined, 0=insitu
num_comps	Integer	number of composites used tio inform block centroid
ore_code	Integer	1=LG, 2&3=HG, 0=Waste
ore_type	Integer	1=free milling, 2=refractory
ox_code	Integer	1=Fresh, 2=Trans, 3=Oxide (using 2020 updated surfaces)
res_cat	Integer	1+measured, 2=indicated, 3=inferred, 4=unclassified
res_pit_3250	Integer	1=above $3,250 AUD, 0=below
s_pct	Calculated	1493*au_ok_ppm+6022
sb_id2_ppm	Float	ID2 estimate for Antimony
topo	Integer	0=above topo, 1=below topo
var_zone	Integer	1=MAIN NS Zones, 2=CROSS CUTTING DOMAINS

3.15 Dynamic Anisotropy

To account for the varying orientation of the mineralised domains within the Wiluna deposit dynamic anisotropy was used to enable the search ellipsoid orientations to be modified according to the structural trends. This was done using Surpac software where a dip and azimuth is assigned to each block centroid based on the wireframe domain orientations that is then in turn used to change the ellipsoid orientation on a block by block basis.

An example of the dip and azimuth assignment of blocks is shown in Figure 3-10 below.

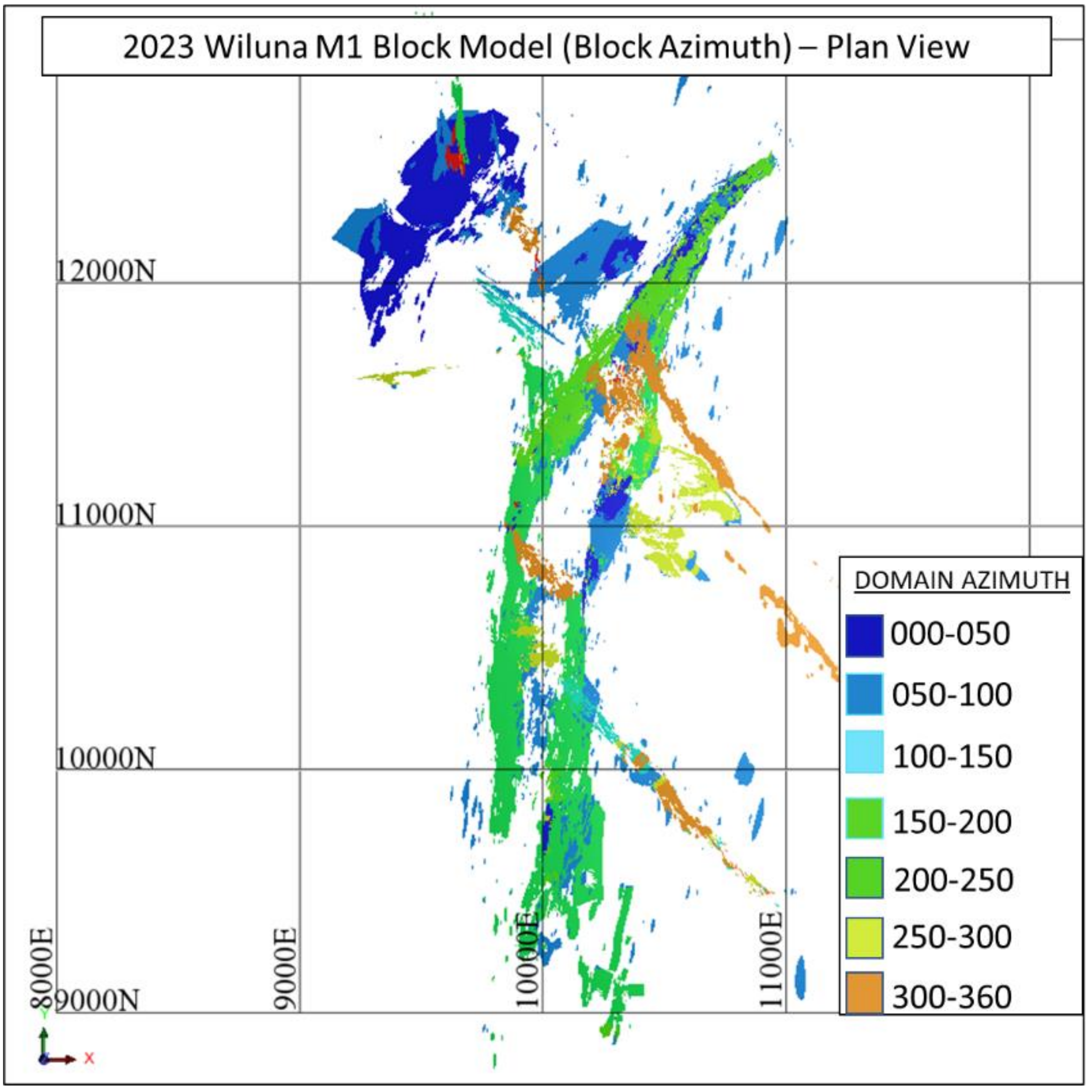


Figure 3-10: Wiluna Deposit – Dynamic Azimuth Coding

3.16 Grade Estimation

Gold and arsenic grades were estimated into the model using ordinary kriging. Sulphur and antimony grades were estimated into the model using inverse distance squared.

Three estimation passes were used with dynamic isotropy applied to account for changes in orientation of the mineralised domains. Three estimation passes were used at 25m, 50m and 250m search radii. Minimum/Maximum samples used were 3/15, 2/10 and 1/3 for each pass respectively. Variogram parameters used were in line with historical estimates for the Wiluna deposits as shown in Table 3-6, below and some example variograms are shown in Figure 3-11 and Figure 3-12.

Table 3-6: Wiluna Variogram Parameters

Deposit	Domain	c0	Spherical 1				Spherical 2			
			c1	a1	semi1	minor1	c2	a2	semi2	minor2
Cross Structures	400	0.31	0.51	17.0	3.1	1.7	0.18	66.0	2.1	4.4
	402	0.19	0.48	15.1	2.0	2.0	0.33	26.5	1.4	2.2
	403	0.29	0.37	21.7	1.4	5.2	0.34	41.3	1.2	5.2
	405	0.22	0.46	21.0	1.3	2.7	0.32	38.5	1.5	3.8
	406	0.22	0.26	25.4	1.9	3.6	0.52	33.1	1.9	3.4
WQ And Magazine	500	0.27	0.59	28.5	3.0	6.6	0.14	60.6	2.4	5.2
	507	0.24	0.42	18.3	1.5	16.6	0.34	37.4	1.7	19.7
	511	0.31	0.38	46.9	2.9	24.7	0.31	77.1	2.5	11.7
	551	0.31	0.33	36.4	4.0	30.3	0.36	71.5	4.5	29.7

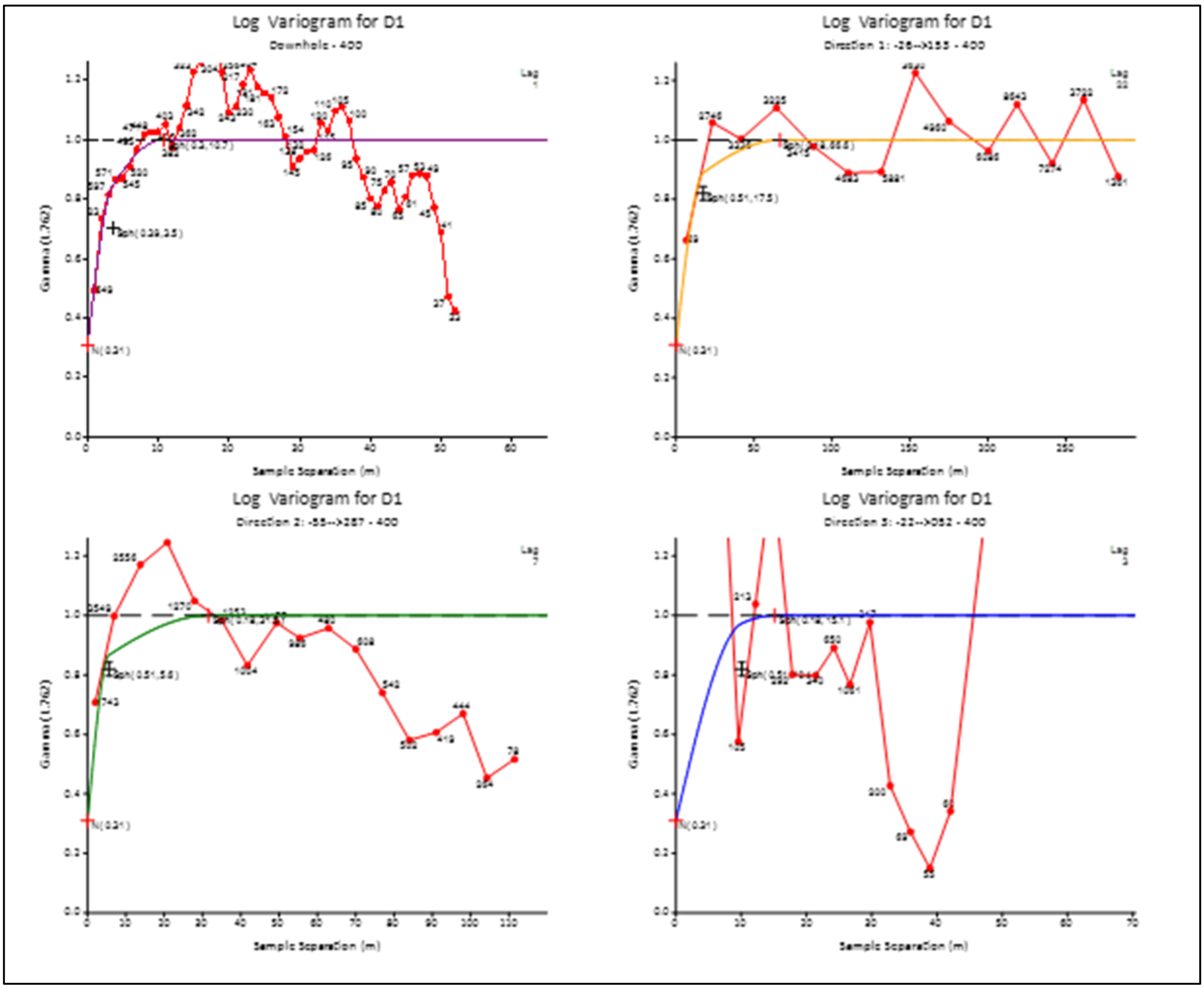


Figure 3-11: Wiluna Domain 400 Variograms (December 2020 WMC Internal Memo)

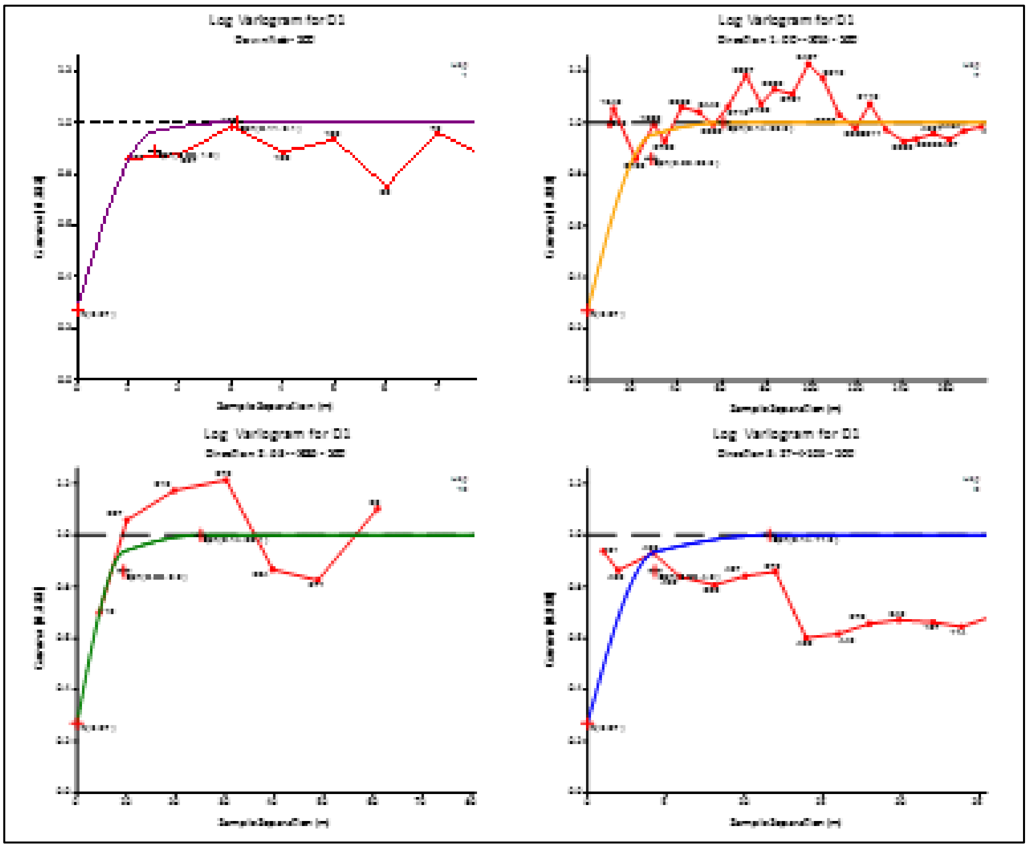


Figure 3-12: Wiluna Domain 500 Variograms (December 2020 WMC Internal Memo)

3.17 Ore Type

The Wiluna deposit contains gold mineralisation that is either free milling or refractory in nature. The refractory gold component is locked within the sulphide crystal lattice and therefore requires different processing methods than the free milling components. The free milling zones are generally related to the cross cutting domains such as Golden Age. The ore type classification is therefore based on mineralised domain orientation in conjunction with information provided by Wiluna Mining.

Free milling gold mineralisation is coded into the model ore type attribute as “1” whereas the refractory domains are coded as “2”. The spatial distribution of ore type is shown in Figure 3-13 below.

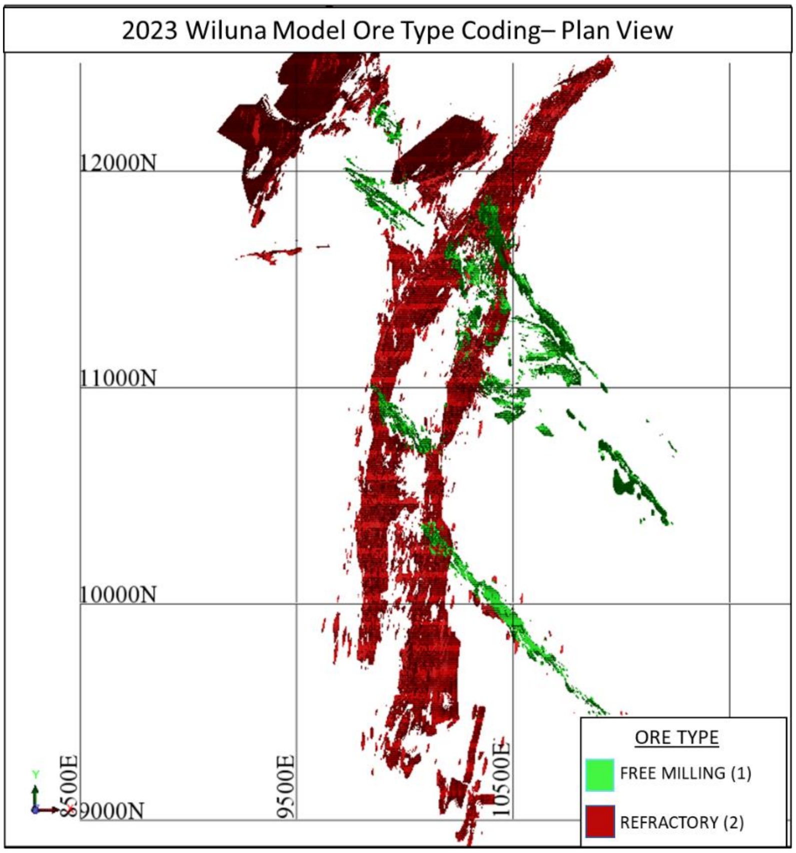


Figure 3-13: Wiluna Model Ore Type Coding – Plan View

3.18 Resource Classification

The Mineral Resource model was classified into Measured, Indicated and inferred categories. The classification was based on drill spacing and confidence in the geological continuity of the mineralised structures. Wireframes were created for the measured and indicated areas to reflect this classification and "smooth" the coding process. The distribution of the classification is shown in Figure 3-14, below. The average composite criteria for each resource category are summarised in Table 3-7, below.

Table 3-7: Wiluna Central Mining Area Resource Class Composite Criteria

Category	Measured	Indicated	Inferred
Average Distance to Composites (m)	11.78	15.81	49.49
Average Distance to Nearest Composite (m)	7	11.13	41.82
Average Number of Composites	25	21	13

The 2023 Mineral Resource contains more Inferred material than the 2020 OK Model (25.24Mt vs 8.44Mt).

The material increase in inferred Resources is largely sourced from depth extensions of the known mineralised domains. Where deeper drilling intercepts show mineralised domains continuing the 2023 model has assessed that extensions to these intercepts are valid and in line with the general geological continuity of the Wiluna mineralised system. Even with these extensions the average distance to drillhole assays is 49m within the inferred blocks, this is assessed as reasonable given the style of mineralisation and understanding of the deposit.

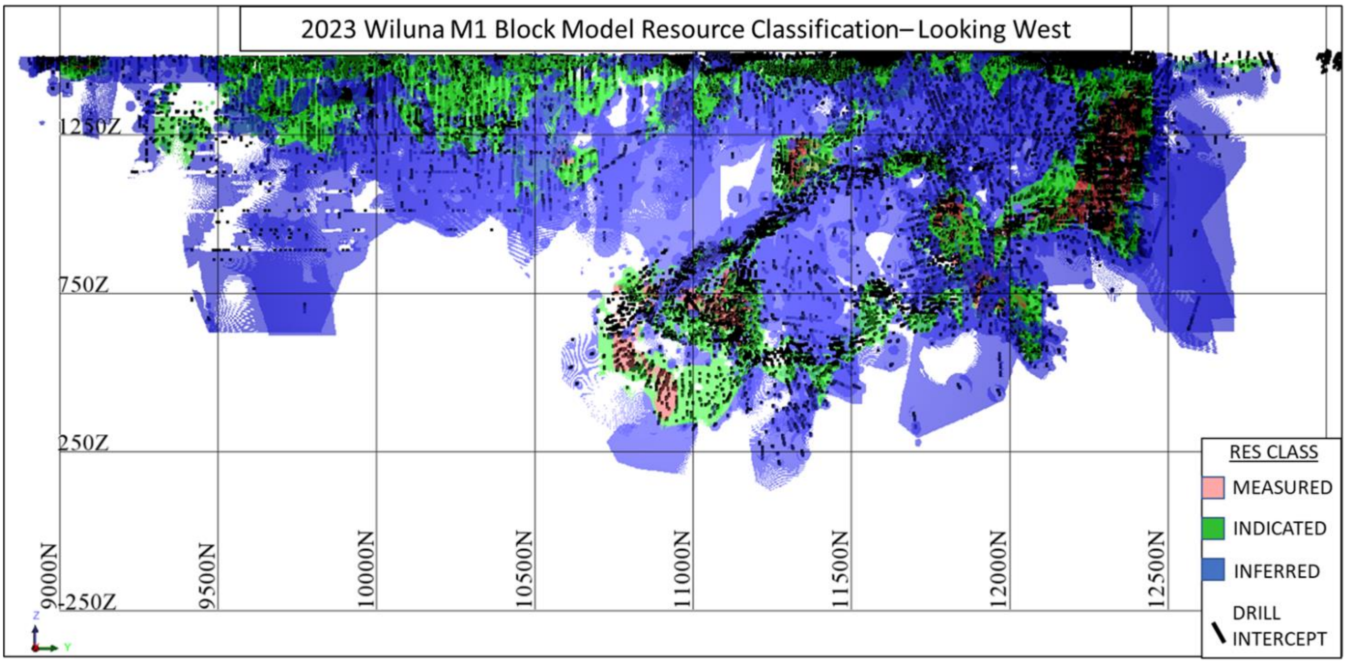


Figure 3-14: Wiluna Resource Classification – Looking West

3.19 RPEE Pit Shell

A reasonable prospect of economic extraction pit shell was run in order to report “open pit” resources from the Mineral Resource model. The pit shell was run at a $3,250 AUD/oz gold price in order to capture upside potential. Lower cut-off grades are applied within this pit shell and then higher cut-off grades in relation to requirements for underground mining were applied below the pit shell.

3.20 Void/Pit Depletion

The 2023 Mineral Resource model was depleted based on the underground void model supplied by the Wiluna Mining Company and the as mined pit surfaces. All blocks within 5m of the underground mined wireframes were coded as mined. The “mined attribute in the model was coded 1 for mined material and 0 for insitu material. The void models used to deplete the Mineral Resource are shown in Figure 3-15.

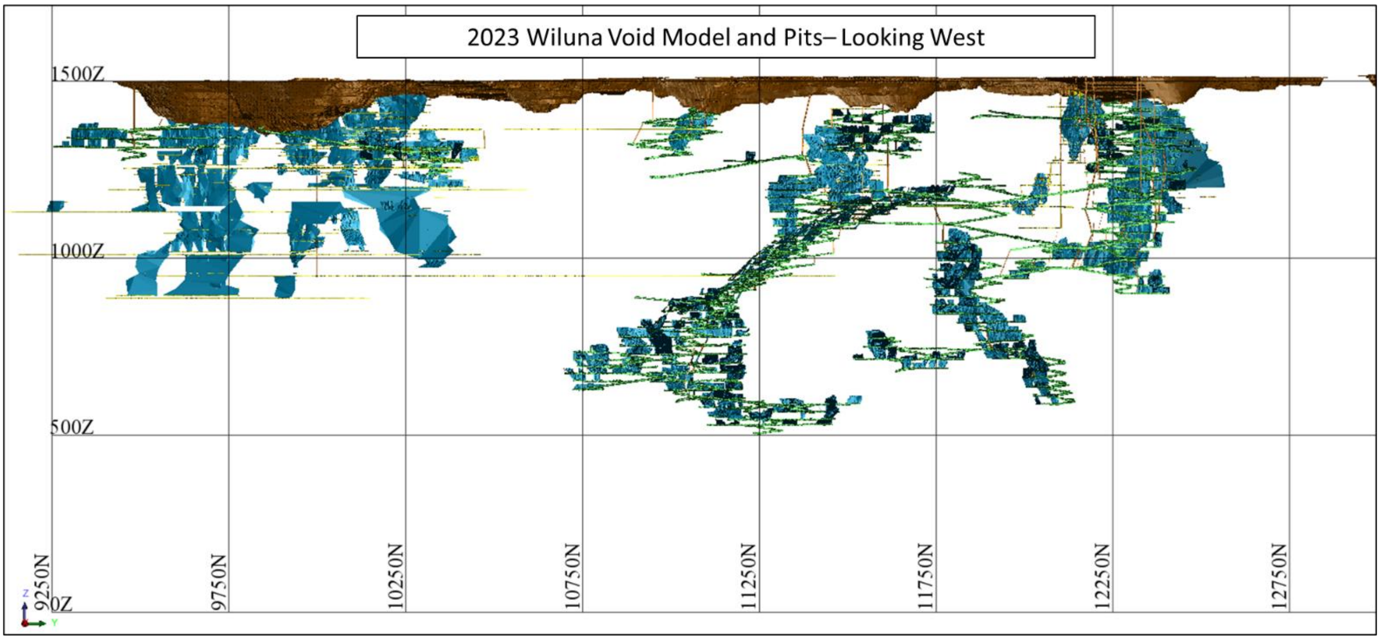


Figure 3-15: Wiluna Void and Pit Depletion Model

3.21 Pit Backfill Material

Volumes derived from the as mined surfaces combined with recent surveys were used to represent the backfill material placed within the historically mined open pits. The model was coded “2” in the mined attribute where the backfill is located. The backfill was assigned a 2.1 density value.

3.22 Wiluna Mining Centre Resource Model Results

Open pit Mineral Resources were reported within the $3,250/oz optimisation shell and above a 0.35 ppm Au and 0.7 ppm Au cut-off for oxide and sulphide mineralisation respectively. The results are summarised in Table 3-8, below. The distribution of blocks and grade tonnage curve are shown in Figure 3-16 and Figure 3-17 respectively.

Table 3-8: Wiluna Mining Centre Open Pit Model Results

M1 JUNE 2023 BLOCK MODEL - PIT RESOURCES ($3,250 AUD oz SHELL)									
Material Type	**Res Cat**	**Volume**	**Tonnes**	**Au_ppm**	**As_ppm**	**Sb_ppm**	**S_ppm**	**Au oz**	**Cut-Off**
FRESH	MEASURED	39,598	110,873	2.43	3254	79	9656	8,662	0.7 ppm
	INDICATED	2,702,391	7,566,694	2.86	3549	74	10291	695,765	
	INFERRED	757,551	2,121,142	3.38	3912	579	11069	230,503	
SUBTOTAL		3,499,539	9,798,709	2.97	3624	184	10452	935,655	
TRANSITION	MEASURED	6,633	16,582	2.54	3325	26	9810	1,354	0.35 ppm
	INDICATED	1,080,859	2,702,148	1.06	2301	43	7611	92,089	
	INFERRED	289,043	722,607	1.25	2433	97	7894	29,040	
SUBTOTAL		1,376,535	3,441,338	1.11	2334	54	7681	122,812	
OXIDE	MEASURED	3,020	6,039	2.49	3290	27	9735	483	0.35 ppm
	INDICATED	952,641	1,905,281	0.85	2155	39	7297	52,068	
	INFERRED	598,387	1,196,773	1.19	2389	77	7801	45,788	
SUBTOTAL		1,554,047	3,108,094	0.99	2248	54	7496	98,928	
GRAND TOTAL		**6,430,121**	**16,348,141**	**2.20**	**3,091**	**132**	**9,307**	**1,157,396**	

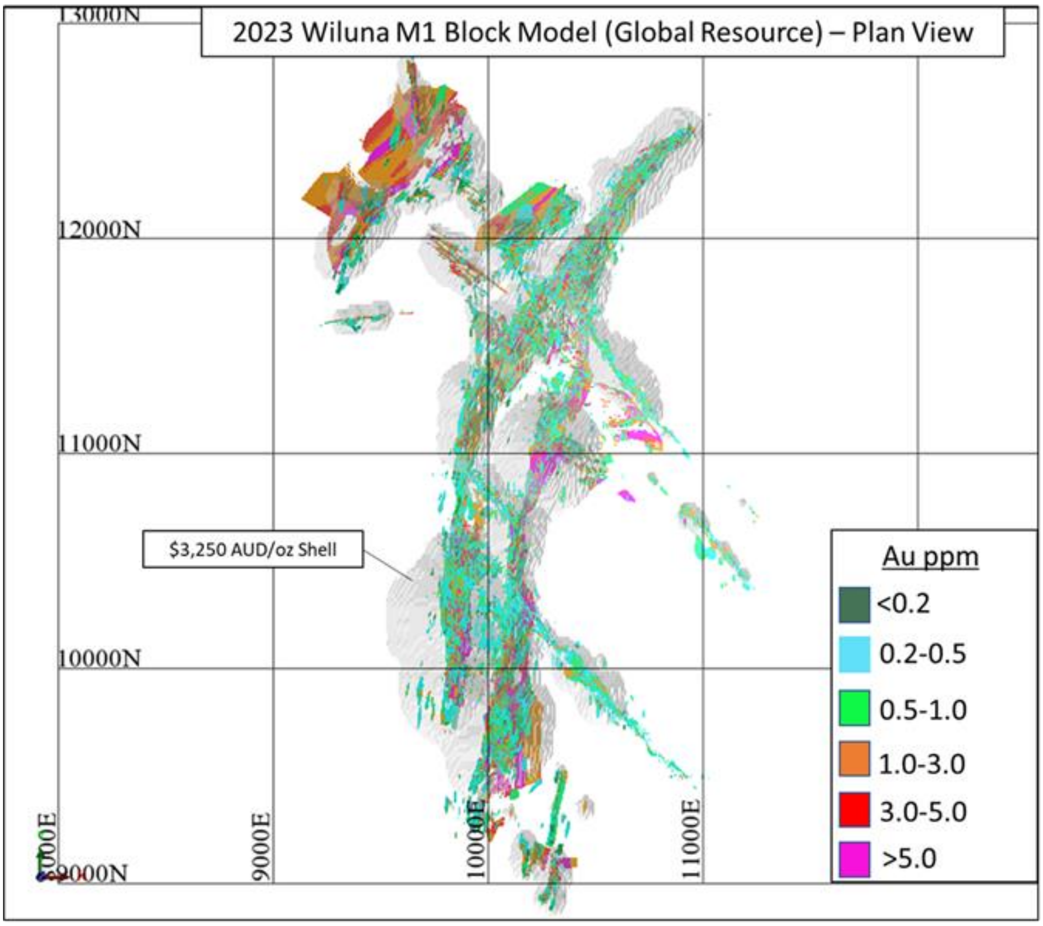


Figure 3-16: Wiluna Mining Centre Model Open Pit Material – Plan View

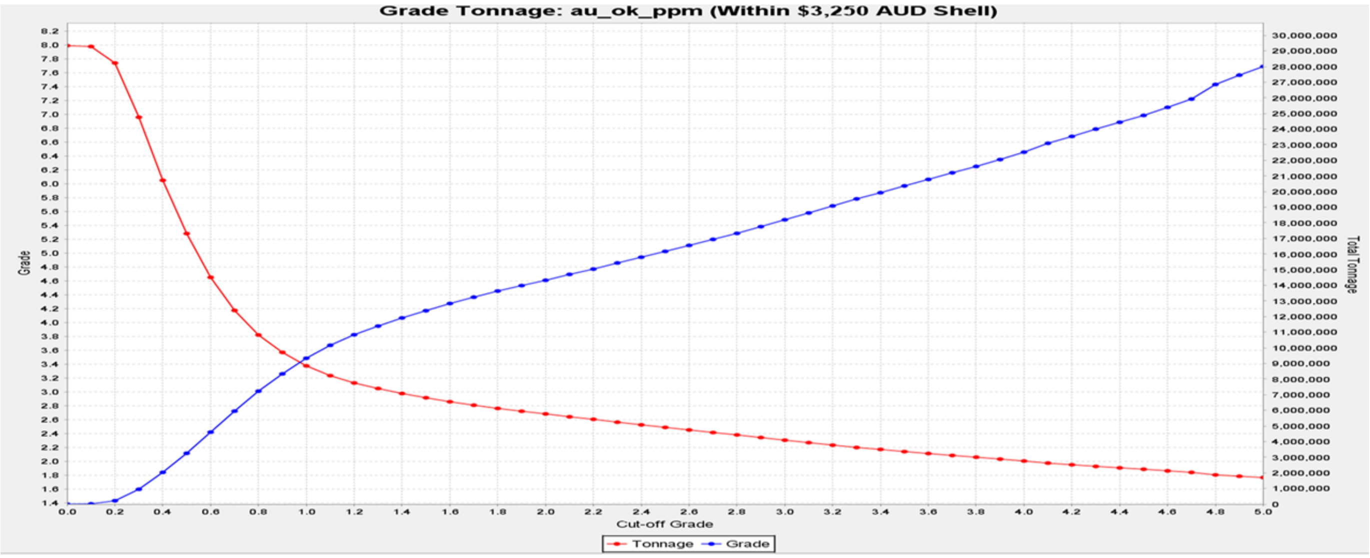


Figure 3-17: Wiluna Resource Model Open Pit Material – Grade Tonnage Curve

The Mineral Resources for the underground component were reported above a 2.3 ppm Au cut-off grade and below the $3,250/oz RPEE pit shell. These results are summarised in the Table 3-9, below.

Table 3-9: Wiluna Mining Centre Underground Model Results

M1 JUNE 2023 BLOCK MODEL - UG RESOURCES (BELOW $3,250 AUD oz SHELL)									
Material Type	**Res Cat**	**Volume**	**Tonnes**	**Au_ppm**	**As_ppm**	**Sb_ppm**	**S_ppm**	**Au oz**	**Cut-Off**
FRESH	MEASURED	794,863	2,225,617	5.45	5352	33	14160	389,976	2.3 ppm
	INDICATED	1,839,941	5,151,836	4.7	4828	29	13036	778,485	
	INFERRED	7,559,195	21,165,747	4.41	4628	66	12607	3,000,978	
SUBTOTAL		10,194,000	28,543,200	4.54	4720	57	12805	4,166,286	
TRANSITION	MEASURED							0	2.3 ppm
	INDICATED	8,234	20,586	7.63	6865	41	17410	5,050	
	INFERRED	11,809	29,521	3.86	4246	47	11786	3,664	
SUBTOTAL		20,043	50,107	5.41	5322	45	14096	8,715	
OXIDE	MEASURED							0	2.3 ppm
	INDICATED	2,223	4,445	5.55	5422	48	14312	793	
	INFERRED	2,563	5,125	3.99	4339	57	11986	657	
SUBTOTAL		4,785	9,570	4.72	4842	53	13066	1,452	
GRAND TOTAL		**10,218,828**	**28,602,877**	**4.55**	**4,722**	**57**	**12,808**	**4,176,454**	

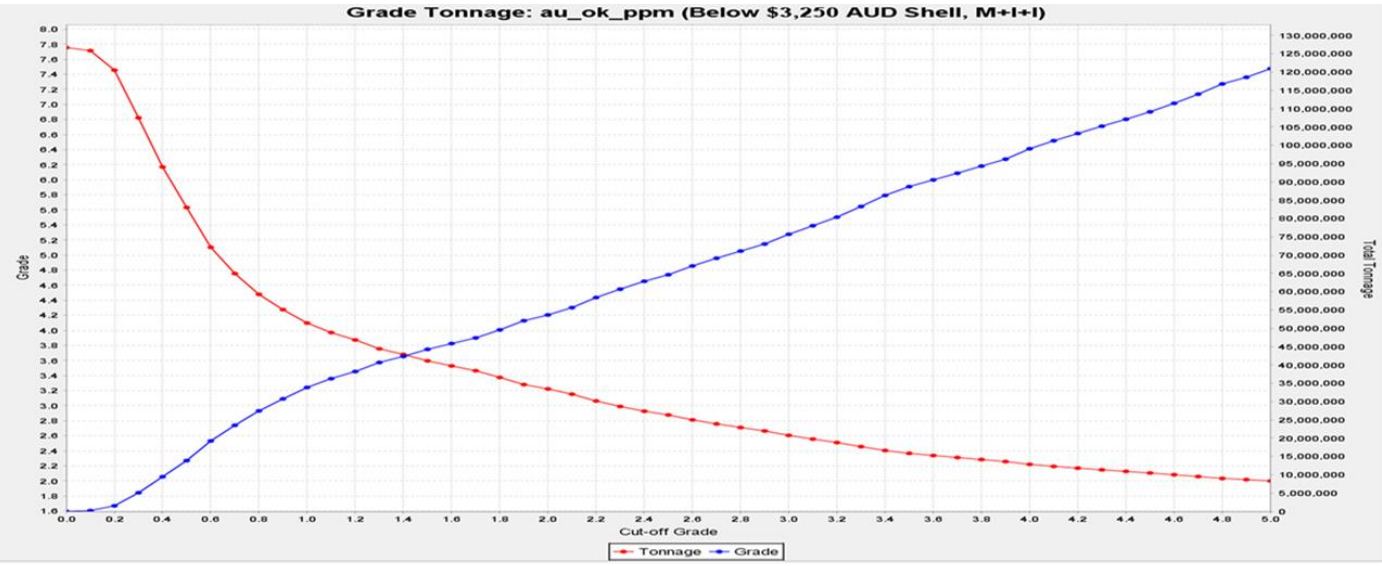


Figure 3-18: Wiluna Resource Model Underground Material – Grade Tonnage Curve

The main Wiluna deposit Mineral Resources for both the open pit and underground components are summarised in Table 3-10, below.

Table 3-10: Wiluna Mining Centre Deposit Combined Mineral Resources June 2023

	Volume	**Tonnes**	**Au_ppm**	**As_ppm**	**Sb_ppm**	**S_ppm**	**Au oz**
OPEN PIT RESOURCES TOTAL	6,430,121	16,348,141	2.20	3,091	132	9,307	1,157,396
UNDERGROUND RESOURCES TOTAL	10,218,828	28,602,877	4.55	4,722	57	12,808	4,176,454
GRAND TOTAL	**16,648,949**	**44,951,018**	**3.69**	**4,128**	**84**	**11,534**	**5,333,849**

3.23 Resource Model Verification

The 2023 Mineral Resource model was checked via visual inspection on section of raw assay values versus block estimates in addition to swath plots for both the high and low grade domains. These plots are shown in Figure 3-19 to Figure 3-22 below.

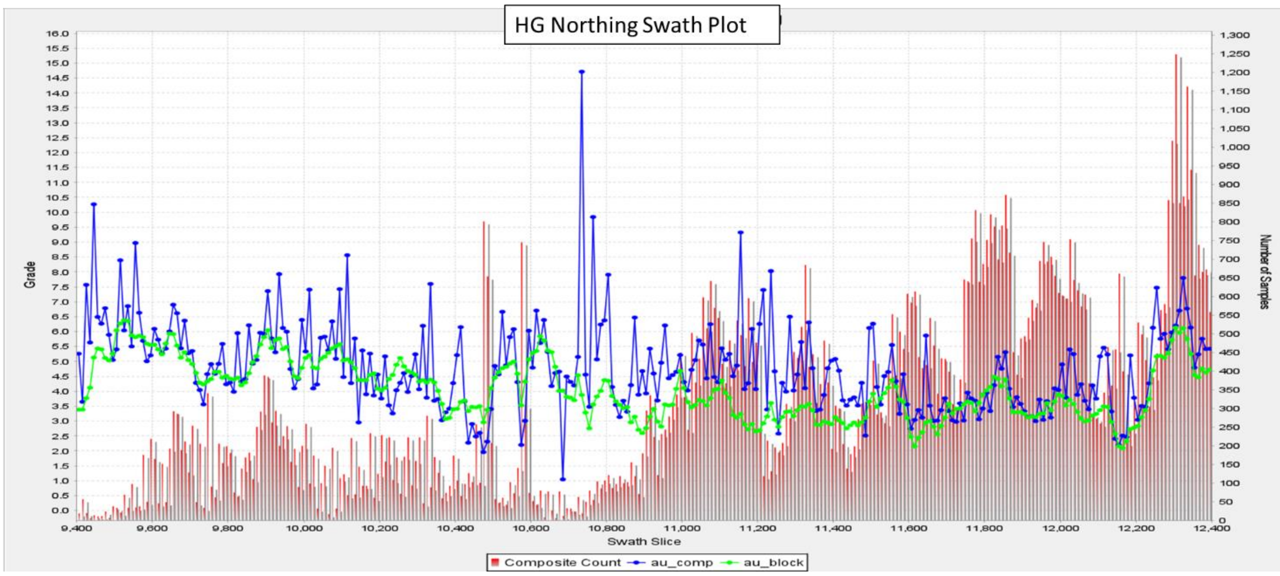


Figure 3-19: Wiluna Model High Grade Northing Swath Plot

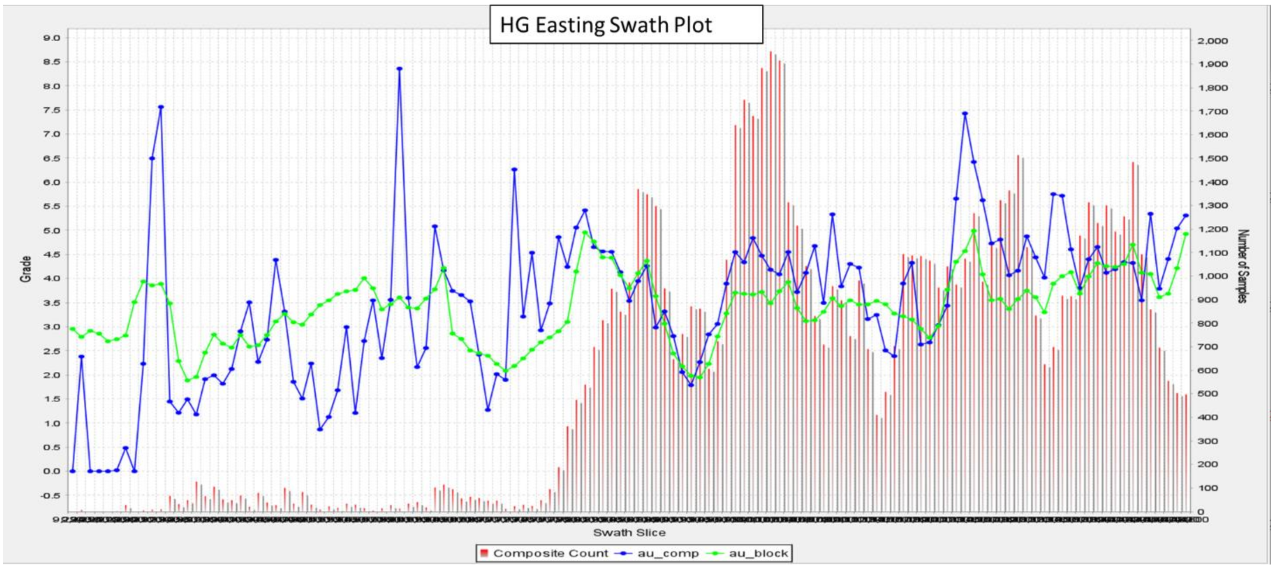


Figure 3-20: Wiluna Model High Grade Easting Swath Plot

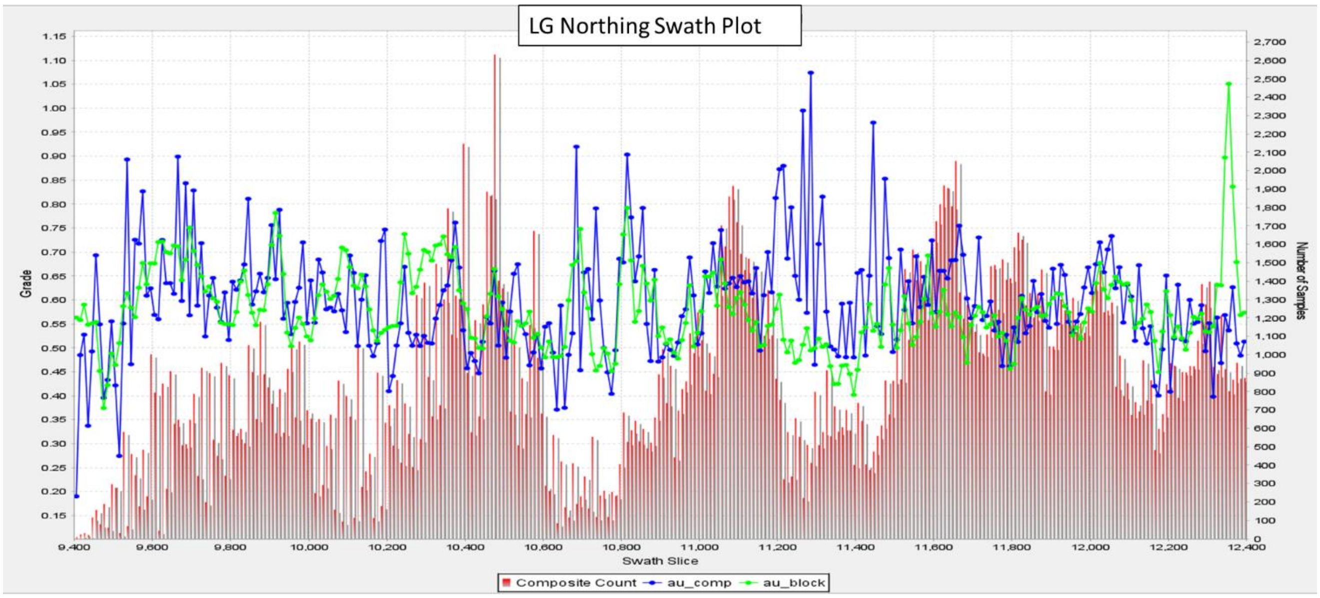


Figure 3-21: Wiluna Model Low Grade Northing Swath Plot

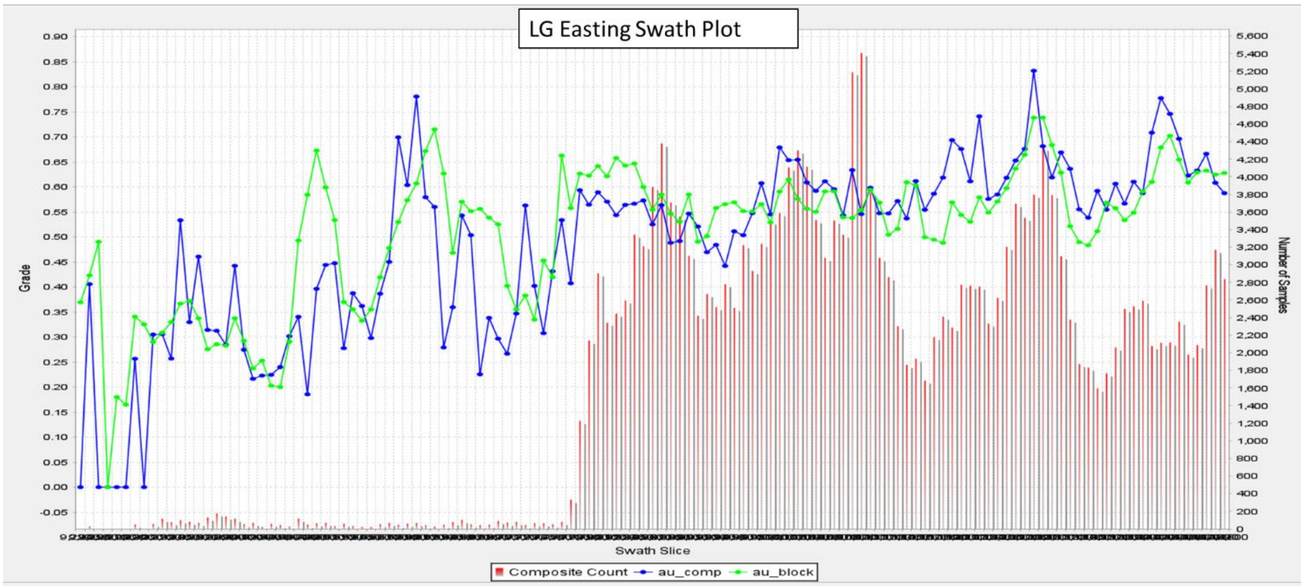


Figure 3-22: Wiluna Model Low Grade Easting Swath Plot

3.24 Model Comparisons

The Mining One Resource model was constructed for use as the basis for both open pit and underground mining scenarios. The 2018 LUC model was constructed primarily with an open pit mining scenario used as a basis, the high grade domains were not tightly constrained as seen in the cross sections shown in Figure 3-23, Figure 3-24 and Figure 3-25 below. These examples show the West lode which will potentially be a key future mining area particularly at the southern end of the deposit for any future restart plan. The 2020 OK model was constructed with a view to primarily underground mining and therefore the low grade domains (<2 ppm Au) were not modelled but rather a 50m halo or buffer was used to estimate low grade material on the margins of the modelled high grade domains.

The 2023 M1 model is shown in comparison with the 2018 LUC and 2020 OK models in the sections below. The M1 model was designed to tightly constrain the known narrow high grade zones and to also account for the low grade material by using low grade domains (>0.2 ppm Au) to constrain the estimate in these areas. Further opportunities exist to continue to define high grade zones in many areas of the mine.

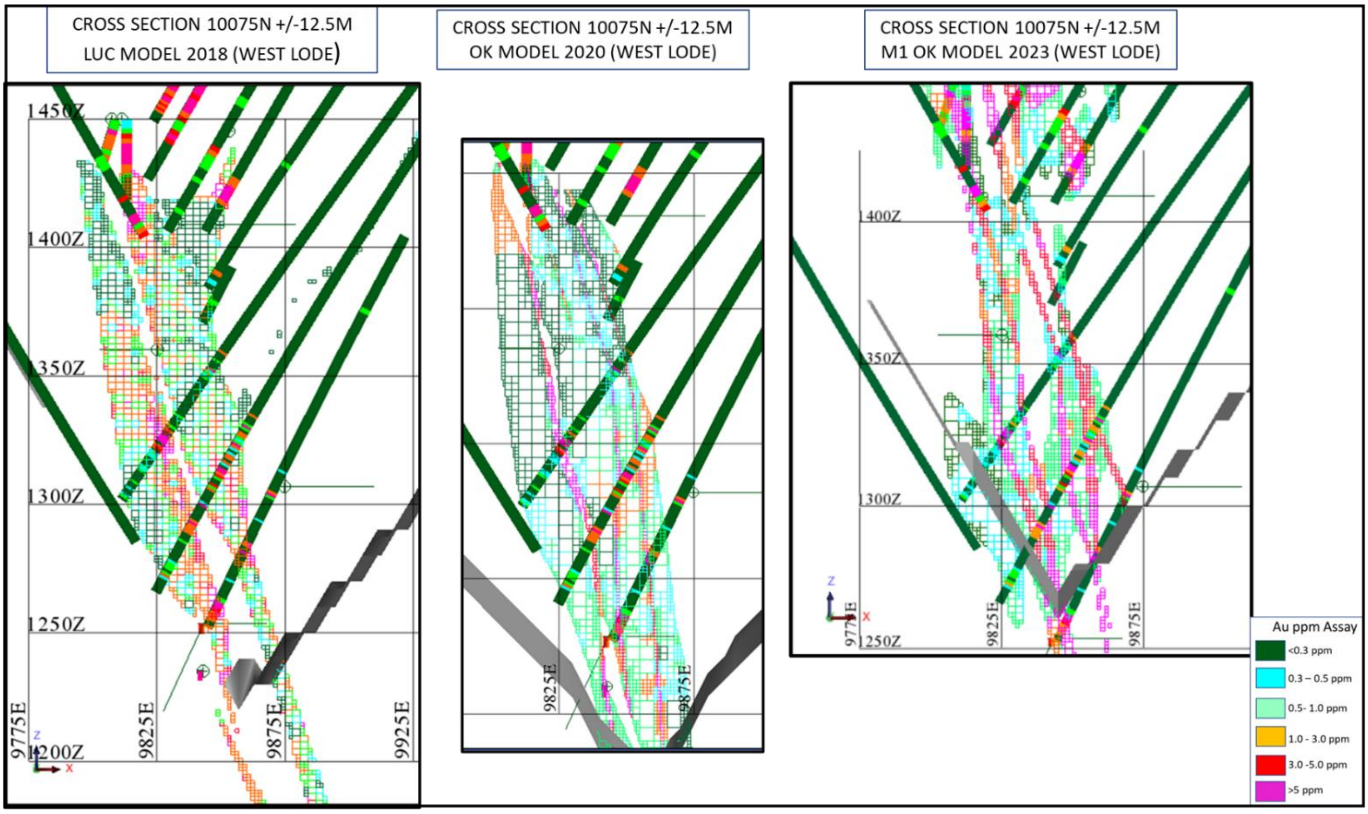


Figure 3-23: LUC vs 2020 Ok vs 2023 M1 OK Model Comparisons – Section 10075N

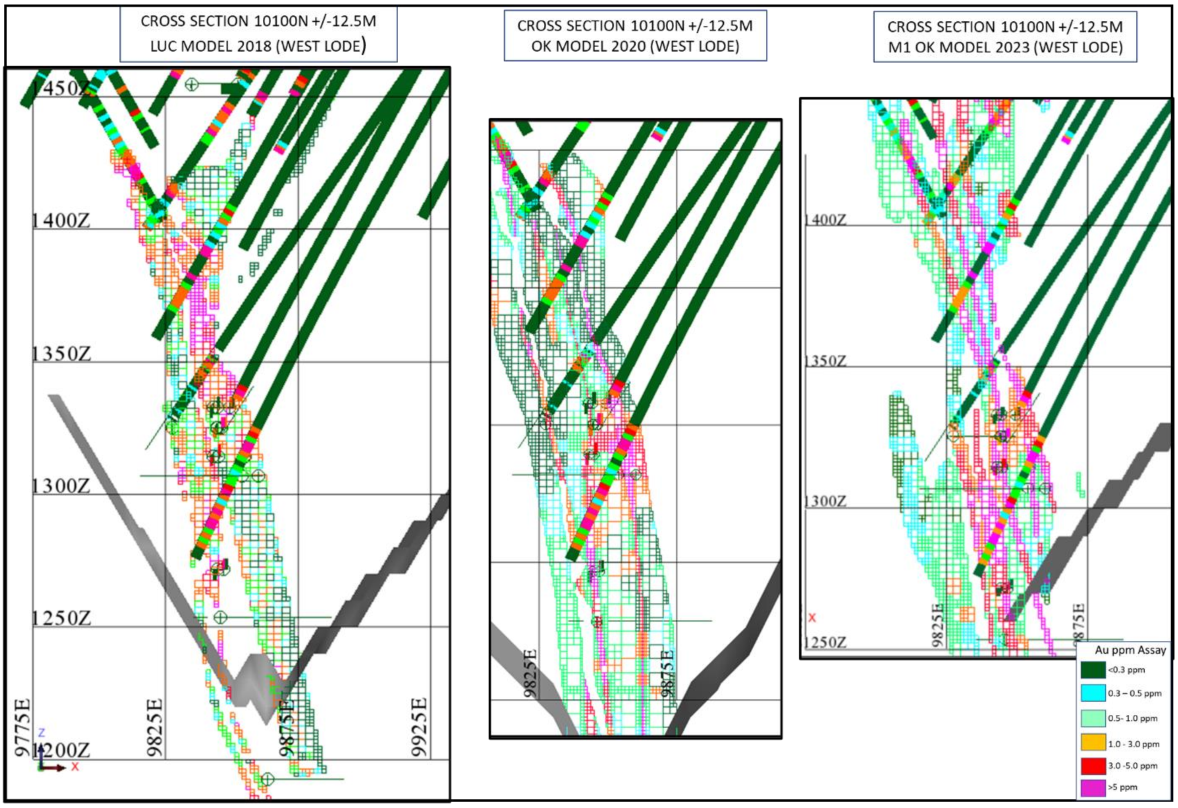


Figure 3-24: LUC vs 2020 Ok vs 2023 M1 OK Model Comparisons – Section 10100N

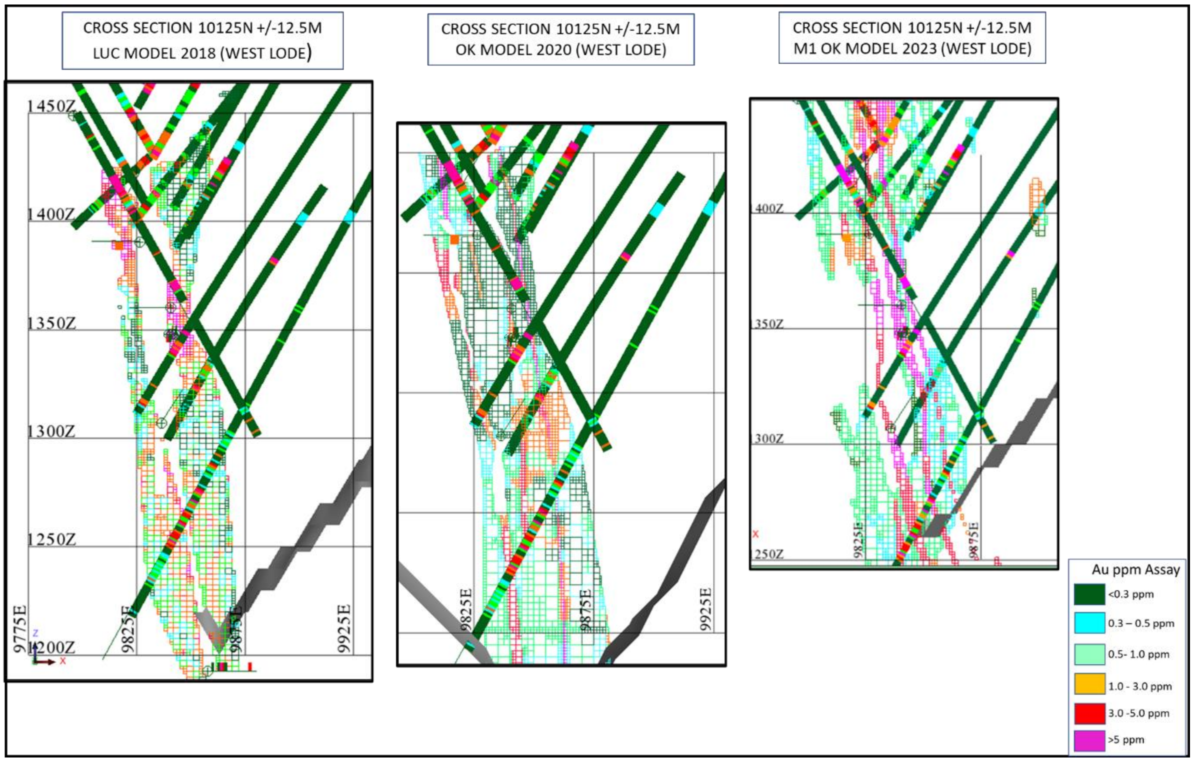


Figure 3-25: LUC vs 2020 Ok vs 2023 M1 OK Model Comparisons – Section 10125N

3.25 Satellite Deposits

The Wiluna project consists of a large tenement package that contains multiple satellite deposits, several of these have stated JORC compliant Mineral Resources including Galaxy, lake Way, Matilda and Regent. Mining One have not re-estimated these projects as yet however they are listed below. These Mineral Resources were stated in the November 2021 Mineral Resource update released to the ASX. These key Satellite deposits are shown in Figure 3-26 below in addition to the summary of the Minerals Resources shown in Table 3-11, below.

Figure 3-26: Wiluna Project – Satellite Deposits

Table 3-11: Wiluna Satellite Deposit Resources – November 2021

WILUNA SATELLITE DEPOSIT MINERAL RESOURCES NOVEMBER 2021				
DEPOSIT	**RES CLASS**	**Mt**	**Au_ppm**	**Au koz**
MATILDA	MEASURED	0.03	2.18	2
	INDICATED	1.24	1.72	68
	INFERRED	0.88	2.71	76
SUBTOTAL		**2.14**	**2.13**	**147**
LAKE WAY	MEASURED	0.27	1.73	15
	INDICATED	0.68	2.27	50
	INFERRED	2.11	1.56	106
SUBTOTAL		**3.06**	**1.74**	**171**
GALAXY	MEASURED	0.01	1.87	1
	INDICATED	0.03	2.24	2
	INFERRED	0.11	3.35	12
SUBTOTAL		**0.15**	**3.02**	**15**

3.26 Tailings Deposits

There are extensive tailings deposits located in the main Wiluna Mining centre area, these deposits are located within tailings dams and as fill within the historically mined open pits. Mining One have not re-estimated these deposits and report them here as stated in November 2021.

Table 3-12: Wiluna Tailings and Stockpile Depleted Resources – November 2021

WILUNA TAILINGS DEPOSIT MINERAL RESOURCES NOVEMBER 2021				
DEPOSIT	**RES CLASS**	**Mt**	**Au_ppm**	**Au koz**
TAILINGS	MEASURED	-	-	-
	INDICATED	33.2	0.57	611
	INFERRED	-	-	-
STOCKPILES	MEASURED			
	INDICATED	3.03	0.50	49
	INFERRED			
	TOTAL	**36.23**	**0.57**	**657**

4 GEOTECHNICAL

After a site visit was completed by Mining One in July 2023 (Ref C-6), current as-mined slopes at Wiluna were demonstrating good stability conditions upon visual inspection.

For the Bulletin, West Lode and East Lode mining areas, no significant failures were observed. The slope conditions within East Lode, especially along the east slope within more weathered material, remain stable and of good condition, even after flooding of pit and subsequent dewatering. Based on these observations and the performance of observed slopes to date, it is considered that the existing slope configurations are suitable for a PFS level of study.

The vertical weathering profile at Wiluna comprises of saprolitic material (completely oxidised), transitional material with variable weathering and fresh rock.

Conformance checks of existing as-built pit survey files were compared against the recommended slope design configurations. In key mining areas such as Bulletin, East Lode and West Lode, the measured Overall Slope Angle (OSA) of current as-mined pits for critical sections were as follows:

Key Mining Area	Recommended OSA° (Ref C-1)^	OSA° from as-mined critical slope	OSA° from initial PFS design
East Lode	-*	49.0	42.3
West Lode	-*	50.8	41.0
Bulletin	49.4	48.4	40.0

* Free Milling Project not applicable to mining area

^Based on 100m slope height scenario

The following sections highlight gaps in data and opportunities at Feasibility stage.

4.1 Open Pit Geotechnical Data Review

A desktop review of previous geotechnical studies and reports that inform the selection of slope design parameters related to the Wiluna open pits was undertaken. The following reports were reviewed:

- Technical Report: Wiluna Gold Project Geotechnical Assessment Open Pit Mining Free Milling Project July 2018. Peter O'Bryan, and Associates (Ref C-1)
- Technical Memorandum: Geotechnical Overview Wiluna Free Milling and Matilda Open Pits. February 2019. Peter O'Bryan, and Associates (Ref C-2).
- Technical Memorandum: Wiluna Gold Operations Open pit and Underground design parameters. August 2020. Peter O'Bryan, and Associates (Ref C-3).
- Technical Memorandum: Wiluna Gold Operations Surface Slope Stability Post-Abandonment. March 2021. Peter O'Bryan, and Associates (Ref C-4).

For this study, the following components from the data provided were assessed:

- Review of geotechnical drillhole data;
- Review of estimated rock strength based on laboratory testing;
- Review of available structural data; and
- Review of input parameters for slope stability assessment.

4.2 Geotechnical Data

4.2.1 Geotechnical Drilling

Two geotechnical diamond boreholes were drilled in Bulletin pit in 2017 for the 2018 Free Milling Project and details are listed in Table 4-1. There is no available geotechnical drilling data in East Lode and West Lode (i.e.: none sighted).

Table 4-1: Bulletin Put Geotechnical Drillholes (WIL 10 grid)

Hole ID	Easting	Northing	mRL	Hole Depth (m)	Azimuth (°)	Plunge (°)
WUDD0027	10803.819	12512.041	1511.951	150.1	135	-50
WUDD0029	10632.359	12361.096	1511.540	228.2	135	-60

The geotechnical drillholes were logged and empirically assessed rock quality metrics such as Rock Quality Designation (RQD), fracture frequency and Rock Mass Rating (RMR) were derived to inform slope design in Bulletin.

4.2.2 Photogrammetry

Photogrammetry mapping was previously undertaken in Bulletin and East Load during the 2018 geotechnical assessment of the Free Milling Project (Ref C-1).

No photogrammetry data/mapping is available in the West Lode as the pit had been backfilled with waste at the time of data capture.

Additional photogrammetry mapping which can be undertaken on existing as-mined slopes and can highlight indicative areas for targeted drilling in the Feasibility stage. The photogrammetry mapping data can assist with determining the orientation of larger structures i.e., faults which are deemed critical in understanding the potential for multi-bench scale instability.

4.3 Current Slope Condition and Configurations

The 2018 Free Milling Geotechnical report (Ref C-1) recommended a nominal overall slope angle (OSA) of 42° within 'Fair' transitional material in the Wiluna pits.

Subsequently, an internal Blackham Resources memo report from Aug 2019 (Ref C-5) for Happy Jack North Pit, south of Bulletin Pit, recommended to increase the nominal OSA in 'Fair' transitional material to 50° based on observed rock mass properties during mining.

The following sections detail slope conditions observed during the Mining One site visit of two of the three mining areas for the PFS: Bulletin and East Lode.

4.3.1 Bulletin

The east wall of Bulletin exposes highly weathered saprolite into highly weathered to moderately weathered transitional material (basalt) to the portal level. The berms have been filled with rilled material (detritus) on both the east and the west wall which was likely caused from either blasting or from natural weathering of batter faces.

Persistent shears/crenulations are exposed (perpendicular to slope aspect) along the east wall, to the south of the portal location but have not degraded over time. A single (<20m^3) batter failure is exposed along the west wall with the back release plane being a sub-vertical, persistent structure.

There is an exposure of a remnant working at the base of the pit, where the pit floor has interacted with an old unmapped stope.

4.3.2 East Lode

The condition of the exposed batters in East Lode is good to very good and no seepage was visible along the batter faces that were exposed above the waterline. Basalt is exposed on west wall and volcaniclastics and basalt is exposed on east wall. The top of fresh rock (TOFR) is shallower on west wall than on the east wall.

There is a localised small wedge failure along the west wall where major joint sets intersect in basalt rock. A larger narrow batter scale wedge failure of approximately 50m^3 is exposed along the north-west wall with material falling from a cross-cutting fault.

The pit floor is flooded, and a dewatering pump is located near the portal location along the south-west wall.

TSF J is located to the east of the pit and approximately 60m from crest of the pit is the toe of TSF J.

4.4 Geotechnical Model

4.4.1 Structural Model

There is limited structural data available for the key mining areas of Bulletin, East and West Lode.

Possible changes in geology and geological structure between the current as-mined pits and the PFS pits presents a knowledge gap that will need to be addressed in further studies.

4.4.2 Weathering Model

Current available weathering wireframes were reviewed and are shown to be irregular whereby the weathering wireframe profile changes significantly in depth, and laterally.

The weathering wireframes are recommended to be expanded at the FS level, as the wireframes are used to represent the material types in the slope stability analysis.

Within the saprolite, a refinement of the weathering wireframe to an upper saprolite (soil-like) and lower saprolite (stronger) may be applicable. Using one low material strength to represent the saprolite material could be deemed to be conservative.

4.5 Laboratory Testing

Previously, there was limited laboratory data to support material parameter determination. The Uniaxial Compressive Strength (UCS) data used in the 2018 Free Milling Geotechnical report (Ref C-1) was taken from a previous geotechnical assessment completed in 2000 by George Orr and Associates (Ref C-. Of the 17 samples tested, 11 samples failed through existing defects within the core sample that were chosen for testing. Only two of the valid samples were of basalt rock which is the rock type predominantly encountered at Wiluna.

Triaxial (Consolidated Undrained) testing was not completed in saprolite material to determine the shear strength of highly to extremely weathered material encountered at Wiluna.

No direct shear testing has been completed at Wiluna and conservative 'base' friction values were adopted (~25° in saprolite/transitional material and ~30 ° in moderately to slightly weathered rock) from logged defect properties reported in the 2018 Free Milling Project (Ref C-1).

4.5.1 Material Properties

The shear strength parameters used to represent the strength of each material encountered at Wiluna taken from the 2018 Free Milling Geotechnical report (Ref C-1) were based on Rock Mass Rating (RMR) values derived from drillhole logging data. In the Free Milling geotechnical assessment report, it is stated that 'experience indicates that these shear strength values are appropriately conservative' as limited laboratory data was available.

A Mohr-Coulomb strength criteria was used to represent saprolite, transitional and fresh rock material in the 2018 Free Milling Geotechnical report (Ref C-1) and this is considered a conservative approach when used to characterise strength of a stronger fractured rock-mass.

A back-analysis was done on East Lode to:

(a) correlate the current slope performance observed during the site visit in 2023; and

(b) to estimate the Factor of Safety (FoS) =1.5 slip surface line for mine closure as set out in the Ground control management in Western Australian mining operations – guideline as shown in Figure 4-1 (DMIRS, 2019).

Consequence of failure	Design FOS	Geotechnical infrastructure examples
Not serious	Not relevant	Ground (not carrying major infrastructure) where all expected potential failures can be contained within containment structures.
Moderately serious	1.2	Ground that has some potential for interaction with the workforce if safe operating procedures are not well followed.
Serious or long term	1.5	Ground carrying major mine infrastructure (e.g. TSF, main ramp) or has potential for large scale failure into workplaces; mine closure slopes that do not comply with the generic design angles provided in the Department's *Safety bund walls around abandoned open pit mines – guideline*. *Note: The guideline design angles for open pit closure are 45 degrees through fresh rock and 25 degrees through weathered rock (with a 10 metre wide buffer at the slope crest before the placement of an abandonment bund).*
Extreme or long term	2.0	Permanent pit walls or unfilled stopes near the surface that can impact on public infrastructure or land owned by other person(s) after mine closure.

Note: The use of one design approach and factor of safety over another will largely depend on the local ground conditions, the potential modes of failure, the amount, quality and variability of information available or obtainable and the likely worst case outcome. Any design criteria used must be verified and validated against these factors.

Figure 4-1: Example of design criteria using FOS taken from the 2019 DMIRS 'Ground control management in Western Australian operations.

A 2D Limit Equilibrium (LE) Slide analysis was completed at a critical section, in line with TSF-H, along the as-built east slope of East Lode pit. The material parameters used in the Slide model were taken from the 2018 Free Milling Geotechnical report (Ref C-1)

The resultant FoS = 0.81 from the back-analysis highlights the need to review the assumed material parameters as good slope performance has been noted and the slope has not experienced failure.

A forward analysis was then undertaken to estimate parameters at PFS. The material parameters used in the forward slope stability analysis were modified to match actual slope performance and these new material parameters were:

- An assumed friction angle/phi (°) for the saprolite material, increased from 20° to 26°, to match the assumed as-mined conditions:
    - Slope performance has been very good over a long period, even after the pit has been flooded and dewatered.
    - Based on these observations an assumed FoS of 1.2 has been adopted – without verification from additional data, i.e. lab testing to confirm material parameters;
    - As such, these assumed material parameters require validation in the next phase of the study.
- Modification of parameters for Transitional and Fresh rock material:
    - Generalized Hoek-Brown strength type was used which is more applicable for rock mass, instead of Mohr-Colomb strength type;
    - UCS values taken from two valid samples in the Free Milling report from 2018;

- GSI from logging data in the Free Milling report from 2018, however, there were no holes in East or West Load;
- Disturbance factor of 1 assuming production blasting practice.

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	UCS (kPa)	GSI	mi	D	Water Surface	Ru
Dump Material		20	Mohr-Coulomb	5	35					None	0
Saprolite		20	Mohr-Coulomb	100	26					None	0
Transitional		25	Generalized Hoek-Brown			100000	40	25	1	None	0
Fresh		28	Generalized Hoek-Brown			130000	60	25	1	None	0

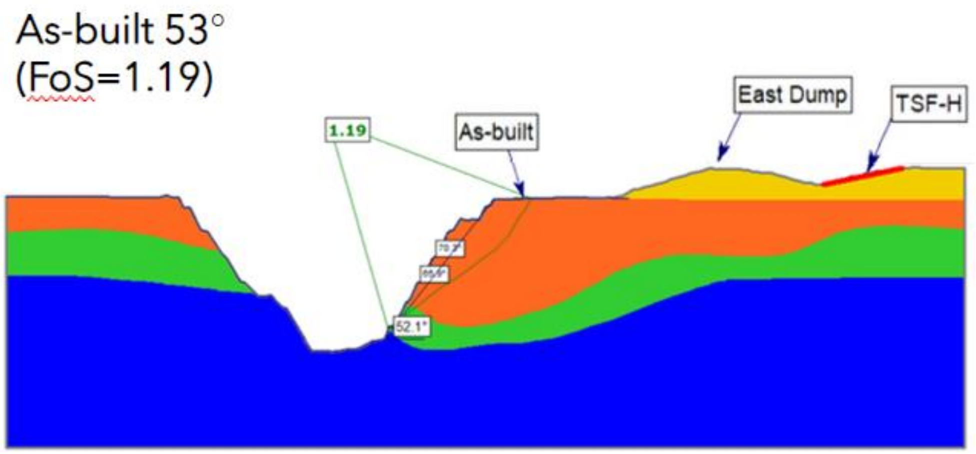


Figure 4-2: 2D Slide back-analysis of critical section along east slope of East Lode (as-built) using revised material parameters (Friction angle 26^0)

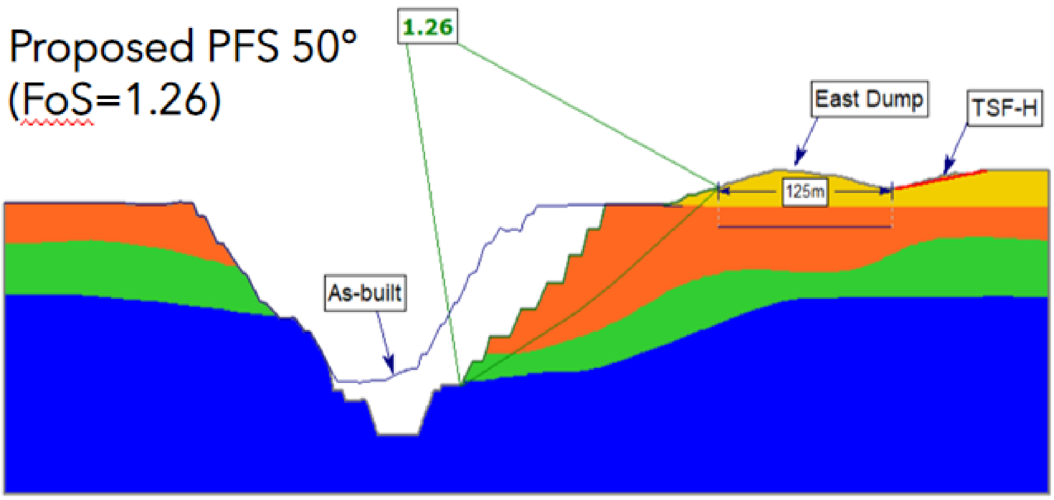


Figure 4-3: 2D Slide analysis of critical section along east slope of East Lode (PFS design) using revised material parameters (Friction angle 26^0)

An equivalent Hoek-Brown strength is required for rock mass material (transitional and fresh) at Feasibility stage and to confirm the parameters used in the forward analysis as shown in Figure 4-3. Correlation of the cutback materials with the existing slope materials will need to be verified with further drilling to determine appropriate material parameters and defect parameters.

The drilling of solely geotechnical purpose holes or combining geotech-geometallurgical holes for logging and laboratory testing is recommended for FS and areas of specific interest will need to be identified as part of the next phase of work.

4.5.2 Pit Hydrogeology

Mine site hydrogeology is further discussed in Section 5.4 and minimal hydrogeological data local to the key mining areas was available for the PFS study. It is assumed that there is a high water-table in East lode as the pit was previously flooded which resulted in the requirement for dewatering. However, Bulletin and West Lode pits were historically dry, and no notable seepage was observed on pit slopes during the site visit in July 2023.

Groundwater levels in key mining areas, if any, should be verified and included in slope stability analysis undertaken at FS.

4.5.3 PFS Slope Recommendations

Based on observations and the performance of observed slopes, it is considered that the existing slope configurations are suitable for a PFS level of study.

Table 4-2 shows the recommended slope parameters for PFS level open pit design. For optimization purposes, a 50° OSA is recommended which is in line with the current observed OSA.

Table 4-2: Recommended PFS slope design parameters

Material	Batter face angle (°)	Berm width (m)	Batter Height (m)
Oxide	65	5	20
Transitional	55	5.5	15
Fresh	70	4	20

4.6 Further Slope Stability Assessment

4.6.1 Kinematic Analysis

A re-assessment of the following items is required at FS to optimise the current slope design, after additional geotechnical drilling and laboratory testing is completed:

- Analysis to determine wedge, planar, topple modes of failure
- Berm width design
- Batter Face Angle (BFA) and Bench height design
- Rockfall assessment

4.7 Underground Geotechnical Data review

A number of Geotechnical studies and reports related to the Wiluna underground workings have been undertaken by various consultants that inform the selection of mine design parameters. Mining One completed a desk top review of the Geotechnical studies and technical reports provided by Wiluna as part of this study. The following underground Geotechnical studies and reports were reviewed:

- Technical Memorandum: Wiluna Gold Operation Open pit and Underground design parameters. August 2020. Peter O'Bryan, and Associates (Ref C-3).
- Geotechnical Assessment – Wiluna Undergrounds. February 2016. Peter O'Bryan and Associates (Ref C-7).
- Technical Report – Matilda Gold Operations – Wiluna Expansion Study – Geotechnical Assessment Underground Mining. July 2017. Peter O'Bryan and Associates (Ref C-8).
- Design Note – Matilda Gold Operations – Wiluna Expansion Study – East Load Portals Design Review. August 2017. Peter O'Bryan and Associates (Ref C-9).
- Wiluna Underground Geotechnical Assessment. March 2022. Mine Geotech (Ref C-10)

For this study, the following components from the data provided were assessed:

- Review of input parameters for stability assessment and stope design
- Review of estimated rock strength and stress parameters based on laboratory testing.
- Review of available data to identify gaps for future geotechnical work to improve the understanding of the mine.

4.7.1 Rockmass Domain

The main Geotechnical domains were summarised from logging completed by Wiluna and that completed by Mine Geotech (Ref C-10). Table 4-3Table provides a summary of the Geotechnical domains, as well as mean values of some of the rock mass parameters, obtained from weighted statistical analysis (Ref C-10). The dominant geotechnical domains (basalt and dolerite) and the mineralised areas were determined to have an average rock mass quality classification of "Extremely Good." Other domains were found to be on average "Very Good."

Table 4-3: Summary of Wiluna Underground Geotechnical Domains

Geotechnical Domain	Logging codes	Mean values from weighted stats analysis					
		RQD	Q’	GSI	EFA	UCS (MPa)	Modulus (GPa)
Basalt	Basalt is the most dominant domain comprising of several units: High Magnesium basalt (MBH). This is also identified as AMB1; Kamotite Basalt (MBK). This is also identified as Aat; Tholeiitic Basalt (MBT). This is also identified as AMB2	93	124	83	67	180.7 (AMB) 136.4 (Aat)	24.5
Dolerite	The Dolerite units comprise the following units: Golden Age Dolerite (MD2); Dolerite (MDL); Quartz Dolerite (MDQ)	91	111	82	67	215	30.7
Ultramafic	High magnesium basalt (MBH) also identified as AMB1; Komatiite basalt (MBK) also identified as Aat; Tholeiitic basalt (MBT) also identified as AMB2	85	63	73	55		
Intrusive	Several lithology units were combined for this geotechnical domain including: Immediate porphyry (IPP); Lamprophyre (ILM); Feldspar porphyry (GPF); Felsic andesite (FAN); Quartz porphyry (GPQ)	93	106	84	69	178	18.2
Sediment	There are also several lithology units that have been combined for this geotechnical domain. These include: Shale (SSH); Siltstone (SSL); Felsic tuff (VTF); Volcaniclastic (VVC); Undifferentiated sediments (XSU).	73	88	70	59		
Brecciated material	This domain represents core that has been logged as a shear (lithology code being TSZ) or a breccia (lithology code TBX). Logging notes regarding these units include: TSZ logged intervals range from weak foliated to intensely sheared veins; TBX logged intervals comprise of crackle veining to open breccias (Figure 4-6); These codes have been used inconsistently to also describe mineralisation	81	220	79	70		

4.7.2 In-Situ Stress Environment

Historically, three CSIRO HI Cell measurements and one Acoustic Emission (AE) stress measurements have been undertaken at the mine. Based on Mine Geotech report (Ref C-10), although underground observations have validated the rock mass damage underground to reflect the three CSIRO results, further validation of the stress regime should be undertaken using instances of borehole breakout and stress damage to excavations. Figure 4-4 shows the depth/stress magnitude relationship for the principal stress from the CSIRO HI Cell test results (Ref C-10). Table 4-4 shows the stress field assumptions.

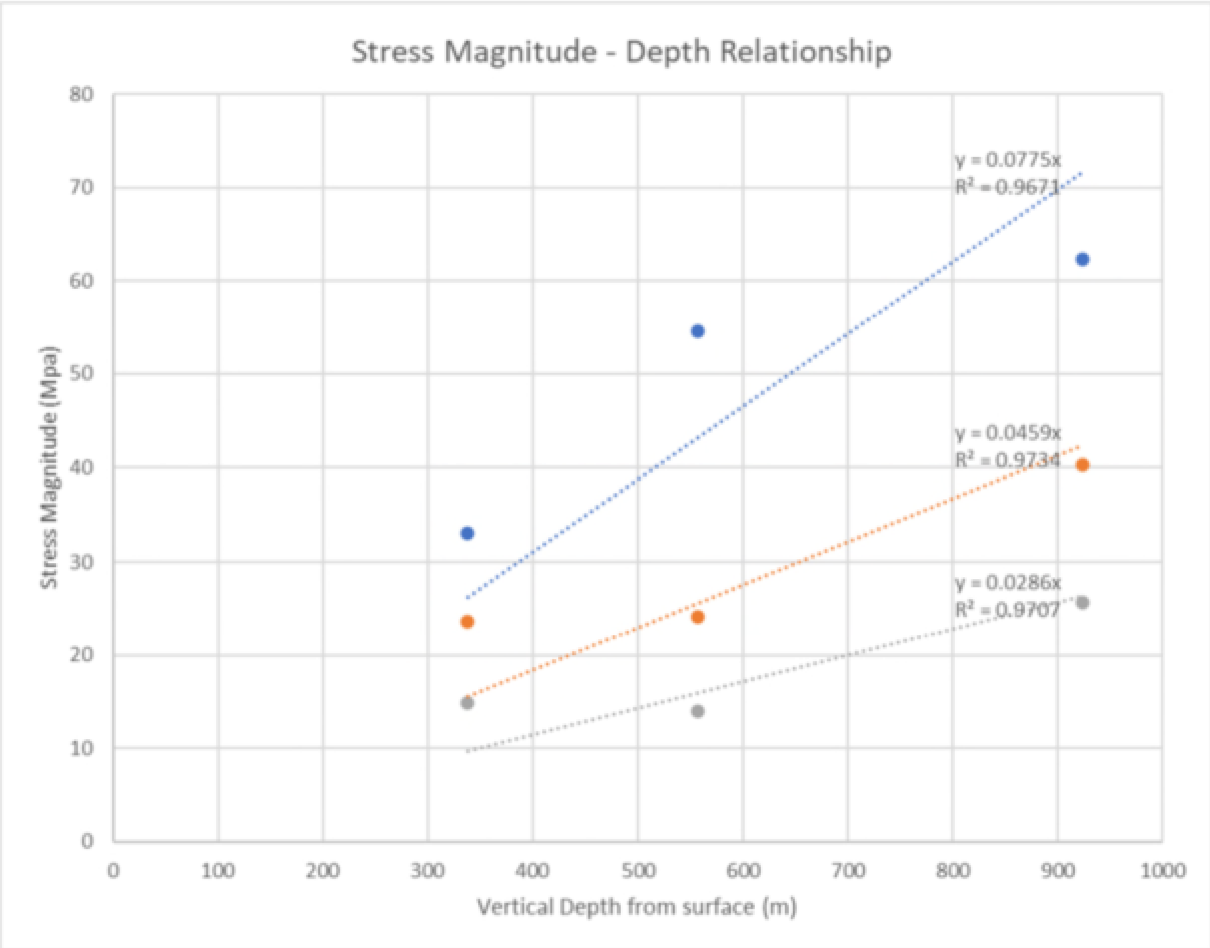


Figure 4-4: Wiluna Underground Stress magnitude - Depth relationship (Blue line = Maximum; Orange line = Intermediate; Grey line = Minimum principal stresses).

Table 4-4: In situ Stress Field assumptions

Geotech Domain	k-ratio	Azimuth (°)	Dip (°)
Maximum	2.7	082	00
Intermediate	1.7	351	00
Minimum	-	000	90

4.7.3 Major Faults

The desk top review indicated that there are several major faults that have the potential to interact with development and stoping designs. Some of these faults have been experienced to have seismic response due to mining activities. A total of twenty-one major faults have been identified as summarised in Table 4-5 (Ref C-10).

Table 4-5: Summary of major underground faults at Wiluna.

Fault Name	Dip (°)	Dip Direction (°)	Planar/Undulates	Mining Area
Golden Age	60	242		GA
GA East	79	266		GA
GA Mid	75	279		GA
NE1	85	336	Undulates	North of Squib
NE2	80	352	Undulates	BUL, WOL
NE3	80	335	Undulates	HTF, HJL, HJC
NE4	75	280	Undulates	ESS, BUR, BAL,
NE5	86	320	Undulates	Wiluna South
NE6	84	134	Undulates	Wiluna South
NE7	87	132	Undulates	Wiluna South
NE8	72	180	planar	Wiluna South
Basalt	80	219	Undulates	BUR,
F4	76	299	planar	BUS, WOL
F5	63	280	Undulates	HTF, WOL, GA
Squib East	82	143	Undulates	BUP, BUL
Squib West	74	127	Undulates	WOD, SQB,
Brothers	54	243	Undulates	BAL, HTF, BUS, GAL
BUL_HJ_WL	78-84	132-095	planar	HJL, WOL, BUL
Creek Shear	70	83	Undulates	HJC, HJN, SQB
East Lode	85	116	Undulates	WOL, HTF, WOD, BUR, BUS, BAL, Wiluna South
Republic	63	226	Undulates	GAL, BUR, HJL, HJN

4.8 Empirical Stope Design Considerations

The work and results of the empirical stope stability assessment completed by Mine Geotech (Ref C-10) was reviewed by Mining One. References for the empirical stope stability assessment were Mathews et al (1980), Potvin (1988), Bawden et al (1988, 1989), Nickson (1992), Mawdesley et al (2001) and Vallaescusa (2014). The results presented guidelines for stope design strike lengths to be used by to provide initial guidance for mine planners regarding the design of unsupported stope spans. The design considerations for the different stoping areas included:

- Stope Geometry – Different dip and dip directions of stopes from different proposed mining areas were assessed.
- Mining depth – Several mining depths were assessed to investigate the sensitivity and impact on overall stope stability.
- Geotechnical domain – Basalt, Dolerite and Ore.
- Crown pillar design considerations
- Development placement
- Interaction with old workings.

Finite element numerical modelling using RS3 (RS3 is a complete 3D geotechnical finite element software package for rock and soil used for excavation design, tunnel design and more) was also completed by MGT, with a focus on lower mining areas to determine the effect of stoping at depth to close out pillars and development, and regional as well as stope stability.

4.8.1 Stope design parameters

Based on the results from the empirical stope stability assessment, the stope design parameters concluded are as follows:

- Smaller stope spans were recommended for the crown area, with a minimum $HR_{(allow)}$ of 8.0. This would dictate the stope geometries at depth.
- Due to Good rock mass conditions in the ore area, higher $HR_{(allow)}$ values were calculated.
- Stope strike lengths were recommended by MGT and reviewed by Mining One to be kept at 20 – 30m hangingwall exposure.

The designed sub-level interval by Mining One for the start-up stopes is 25m floor to floor with a strike length of 30m, with overall $HR_{(allow)}$ values below 8.0.

4.8.2 Sill and crown pillar

Based on the technical memo from Peter O'Brien and Associates (Ref C-3), recommendations for sill and crown pillars were made based on consultation with Wiluna personnel as well as site inspections. The recommendations are as follows:

- Minimum sill pillar ≥ 1:1 aspect ratio
- Potential interaction with shears within the Wiluna Rock mass
- Proposed interval: every 2 sublevels (limited stope heights to 50m)
- Crown pillar beneath tails backfill pit: ≥ 2 x orebody maximum width, with the assumption that:

- The tails have been largely drained to hydraulic gradient to Happy jack and Creek shear UG workings.
- The rock mass for the pillars is moderately competent.

4.9 Ground Support Design

Empirical ground support assessments were undertaken by Mine Geotech (Ref C-10) using the Barton's (Barton et al, 1974) and the Potvin's empirical support charts (Potvin, 2019), as well as incorporating kinematic analysis using UnWedge (UnWedge is a 3D stability analysis and visualisation software for underground excavations in rock containing jointed rock). The recommendations were presented for two areas of application:

- Low to transitional stress conditions
  - 0m to 600m below surface – low seismic response and low dynamic demand expected. Some response may occur in isolation but in general this is expected.
  - 600m to 700m below surface – transitional depth. Some seismic response is expected and in isolated areas may require upgrade of dynamic support.
- High stress to dynamic conditions.
  - Greater than 700m below surface – expected seismic response and ground support scheme will need to have a dynamic capacity.

Table 4-6 summarises recommended ground support scheme for low to transitional stress conditions. For the dynamic environment, dynamic ground support scheme recommended with debonded posimix bolts was 16.4 kJ/m^2 for medium seismic demand, as well as 29 kJ/m^2 and 39 to 50 kJ/m^2 for high demand and very high demand respectively.

Table 4-6: Summary of recommended ground support for low to transitional stress conditions

Parameter	Mean Rock mass Conditions	Poor Rock mass	Transition
Reinforcement type	2.4m Split Set	2.4m Split Set – grouted optional	Resin Point Anchor
2.4 m bolts pattern	1.1 m x 1. 4 m	1.1 m x 1.4 m	1.1 m x 1. 4 m
Number of bolts per ring	9 to 11	11 to 13	11 to 13
Plates	280 x 380 mm standard combination plates	280 x 380 mm standard combination plates	280 x 380 mm standard combination plates
Mesh type and size	5.6 mm strands with 100 x 100 mm squares. Galvanised.	5.6 mm strands with 100 x 100 mm squares. Galvanised	5.6 mm strands with 100 x 100 mm squares. Galvanised
Coverage	Minimum height above floor 3m	Minimum height above floor 3m – possibly to grade line	Bring to at least grade line
Fibrecrete	N/A	Floor to floor either only or with mesh	-
Fibrecrete specifications		50 mm minimum thickness, 30 MPa applied strength	-

5 HYDROLOGY AND HYDROGEOLOGY

5.1 Data Provided

Several data related to hydrology and hydrogeology were provided summarised in Table 5-1.

Table 5-1: List of Hydro Data Provided

No	Title of Document	Format File	Date	Reference
1	Wiluna Mining_Stage3-Pre-Feasibility Report_v1, Wiluna Mining Corporation (WMC)	pdf	2022	D-1
2	Potential Sources of Water for Expanded Mining Operation, Rockwater Consultants	pdf	June, 2021	D-2
3	Surface Water Management Design, Wiluna Matilda Operations, Knight Piésold Consulting	pdf	Jan, 2021	D-3
4	Desktop Hydrogeological Assessment Golden Age Pit, Tetra Tech Coffey	pdf	Aug, 2021	D-4
5	Wiluna Expansion Stage 1 PFS Report Final, Wiluna Mining Corporation (WMC)	pdf	Dec, 2019	D-5
6	Wiluna Mining_Stage2-Feasibility Report_v1, Wiluna Mining Corporation (WMC)	pdf	2022	D-6
7	Water Level Data – 2022, Wiluna Mining Corporation (WMC) [Happy Jack North; Happy Jack South; Bulletin; Woodley: Burgundy]	png	Oct, 2022	D-7
8	Groundwater Monitoring Review (April 2017 – March 2020), Rockwater Consultants	pdf	Jul, 2020	D-8
9	Borefields Water Monitoring Master, Wiluna Mining Corporation (WMC)	xls	Aug, 2022	D-9
10	Annual Environmental Report 2018, 2019, 2020, 2021, Wiluna Mining Corporation (WMC)	pdf	2018-2021	D-10

No	Title of Document	Format File	Date	Reference
11	2021 Wiluna Mine MP 96162 (BPL Environmental)	pdf	Apr, 2021	D-11
12	Wiluna Mine Area Hydrogeological Impact Assessment, KH Morgan, 2018	pdf	Nov, 2018	D-12

5.2 Regional Conditions

The Wiluna gold deposits are located at the northern end of the Western Australian goldfields, close to the town of Wiluna. The topography is typically flat to undulating, ranging in altitude from about 490 m to 530 m Australian Height Datum (AHD).

The climate of the area is semi-arid to arid, with an average annual rainfall of approximately 260 mm. The rainfall tends to be sporadic and varies markedly from year to year. The summers are hot, with maximum temperatures commonly in excess of 40°C, whereas the winters are cool to mild with occasional frosts and an average maximum temperature in July of 19°C. The average daytime temperature ranges from 22.9°C – 30.2°C, with average air pressure is around 97.62 kPa. The daily average of humidity levels is around 81.1%, with average of the windspeed is around 2.65 m/s.

Within the Wiluna region there are a string of semi-terminal and terminal lakes. Drainage across the region is ephemeral and disorganised with no well-defined rivers. With evaporation exceeding precipitation, surface water runoff typically flows into salt lakes and evaporates while infiltration is limited. These lakes are fossil drainage lines from the Tertiary, where an extensive palaeodrainage system has in-filled since then. These palaeoriver sediments mostly contain saline water, however, a source of lower salinity water can be found in the northern parts of the craton within alluvial fan systems (Ref D-1).

The groundwater system underlying Wiluna Operations forms part of a regional phreatic regolith aquifer of the northern part of the Yilgarn Craton of Western Australia. Groundwater levels regionally slope downwards towards Lake Way. Groundwater occurs in regional flow systems within the major palaeodrainages and moves from the drainage divides south towards the salt lakes, and then downstream in the paleochannels. Hydraulic gradients along the palaeodrainages are generally very low, with steeper gradients occurring in the upper reaches of the catchments (Ref D-6).

Regional groundwater flow is controlled by the extremely low southward topographic gradient towards Lake Way-Lake Violet palaeochannel system. High evaporation rate on these Salt Lake play as assists in increasing the groundwater flow gradient towards the lake beds through evaporation excess over groundwater inflow and up flow to the lakes. The regional groundwater body is saline to hypersaline (2000 mg/L to 200,000(+) mg/L) with lower salinity water (500 mg/L to 2000 mg/L) restricted to isolated recharge cells, the latter mostly associated with alluvial fans and calcrete systems.

5.3 Mine Site Hydrology

5.3.1 Site Climate

All previous studies used climate data from the nearest Bureau of Meteorology (BoM) weather station, which is Wiluna Station. Wiluna station is in the Wiluna township (BoM Site Number: 013012), less than 5 km north of the Mine Site. The Wiluna station has been recording rainfall since 1898 and temperature since 1901.

Recorded data suggests that the Project area is likely to receive close to 260.4 mm of rain on an annual basis and experience temperatures between 5.4°C and 38°C (lowest and highest monthly averages recorded). January is typically the hottest month with a mean maximum temperature of 38.0°C and mean minimum of 22.9°C. The coolest month is July with a mean maximum temperature of 19.5°C and mean minimum of 5.5°. A complete statistic of Wiluna climate data is present in Table 5-2.

Table 5-2: Rainfall and temperature averages from BoM Wiluna Station (BOM, 013012)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Max. Temp (°C)	38	37	34	29	24	20	20	22	26	31	34	37	29.2
Mean Min. Temp (°C)	23	22	20	15	10	6.7	5.4	6.8	10	14	18	21	14.3
Mean Rainfall (mm)	37	39	37	29	25	24	15	9.9	5	7.3	12	22	260.4

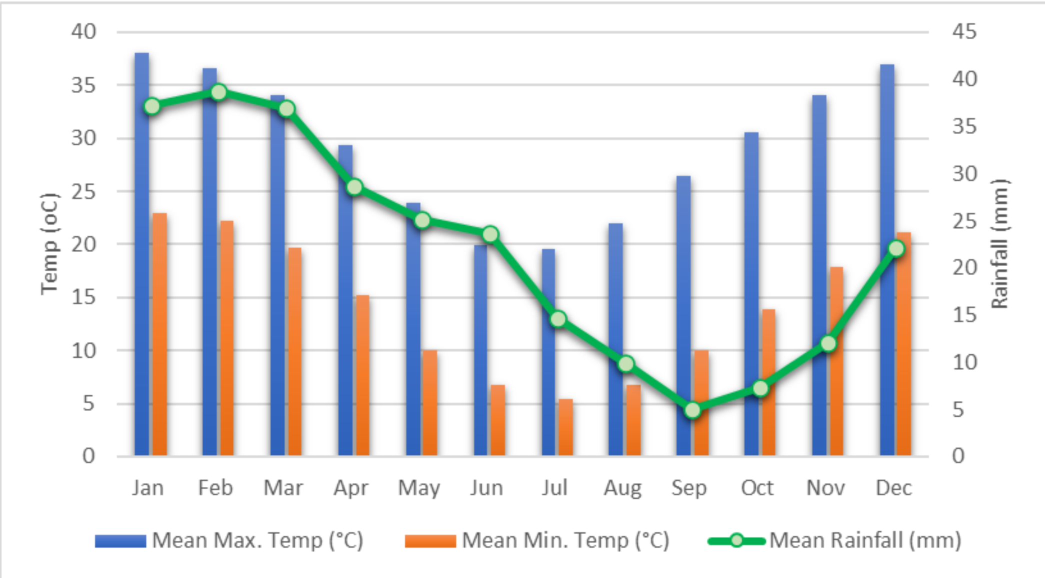


Figure 5-1: Rainfall and temperature averages from BoM Wiluna Station (BOM, 013012)

Table 5-3: Climates Statistic of Wiluna (Bureau of Meteorology, Sta. 013012)

Statistic Element	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean maximum temperature (ºC), 1901 to 2019	38	36.6	34	29.3	23.9	19.9	19.5	22	26.4	30.5	34	36.9	29.2
Highest temperature (ºC) 1957 to 2019	48	46.8	44	40	37.2	32.2	29.7	33.4	37.5	42.9	43.3	47	48
Mean minimum temperature (ºC) 1901 to 2019	23	22.2	19.7	15.2	10	6.7	5.4	6.8	10	13.9	17.9	21.1	14.3
Lowest temperature (ºC) 1957 to 2019	8.3	12.1	9.4	3.9	-0.6	-2	-2.2	-2.3	1.2	4.2	4.4	8.3	-2.3
Mean rainfall (mm) 1898 to 2019	37.2	38.7	37	28.6	25.1	23.6	14.7	9.9	5	7.3	12.1	22.1	260.4
Highest rainfall (mm) 1898 to 2019	231.9	271.6	234.9	527.1	142	108.5	149	67.4	71.1	88.6	70.9	161.4	712.1
Highest daily rainfall (mm) 1899 to 2019	100.2	124.6	76.2	68.2	69.2	68.3	73.5	42.4	25.6	78.2	40.3	112.8	124.6
Mean number of days of rain 1898 to 2019	4.5	4.3	4.7	3.8	4	4.8	3.9	2.8	1.6	1.8	2.8	3.5	42.5
Mean daily solar exposure (MJ/(m*m)) , 1990 to 2023	27.1	24.1	21.5	17.4	14.6	12.7	14	17.6	22	25.3	27.9	28.3	21
Mean number of clear days 1957 to 2010	13.4	11.4	13.5	11.6	14.8	14.4	17.3	19.5	20.6	19.9	15.9	15	187.3
Mean number of cloudy days 1957 to 2010	5.2	6.9	6.4	7.2	6.8	6.5	5.8	3.5	2.2	2.6	3.3	4	60.4
Mean daily evaporation (mm) 1957 to 1985	11	9.5	7.8	5.6	3.7	2.5	2.6	3.7	5.7	7.9	9.3	10.1	6.6

5.3.2 Catchment Area

The assessment of hydrological catchment was completed in several studies, undertaken in both different areas and stages. In 2016, Knight Piésold did the catchment analysis for the plant site infrastructure and the Tailings Dam area (Tailings Dam H and the Western Cell once Tailings Dam J is in place). In 2021, Knight Piésold (Ref D-3) did the catchment analysis for Wiluna Stage 3 expansions (2022), including: eastern diversion, process plant site, Bulletin pit, Happy Jack pit, East pit, and site access road.

However, along with the change of the Wiluna stage 3 expansion plan, especially regarding open pit expansion, the site catchment analysis has been updated, especially for the Bulletin Pit and Lode Pit, with adapted the current existing drainage, and drainage plan from previous studies.

Figure 5-2 shows the catchment boundary from previous studies by KP in 2016 and 2021 (Ref D-3), overlaid with the 2023 open pit expansion mine plan layout. Figure 5-3 and Figure 5-4 shows the update catchment boundary for open pit expansion mine plan 2023, which focussed on Bulletin Pit and Lode Pit.

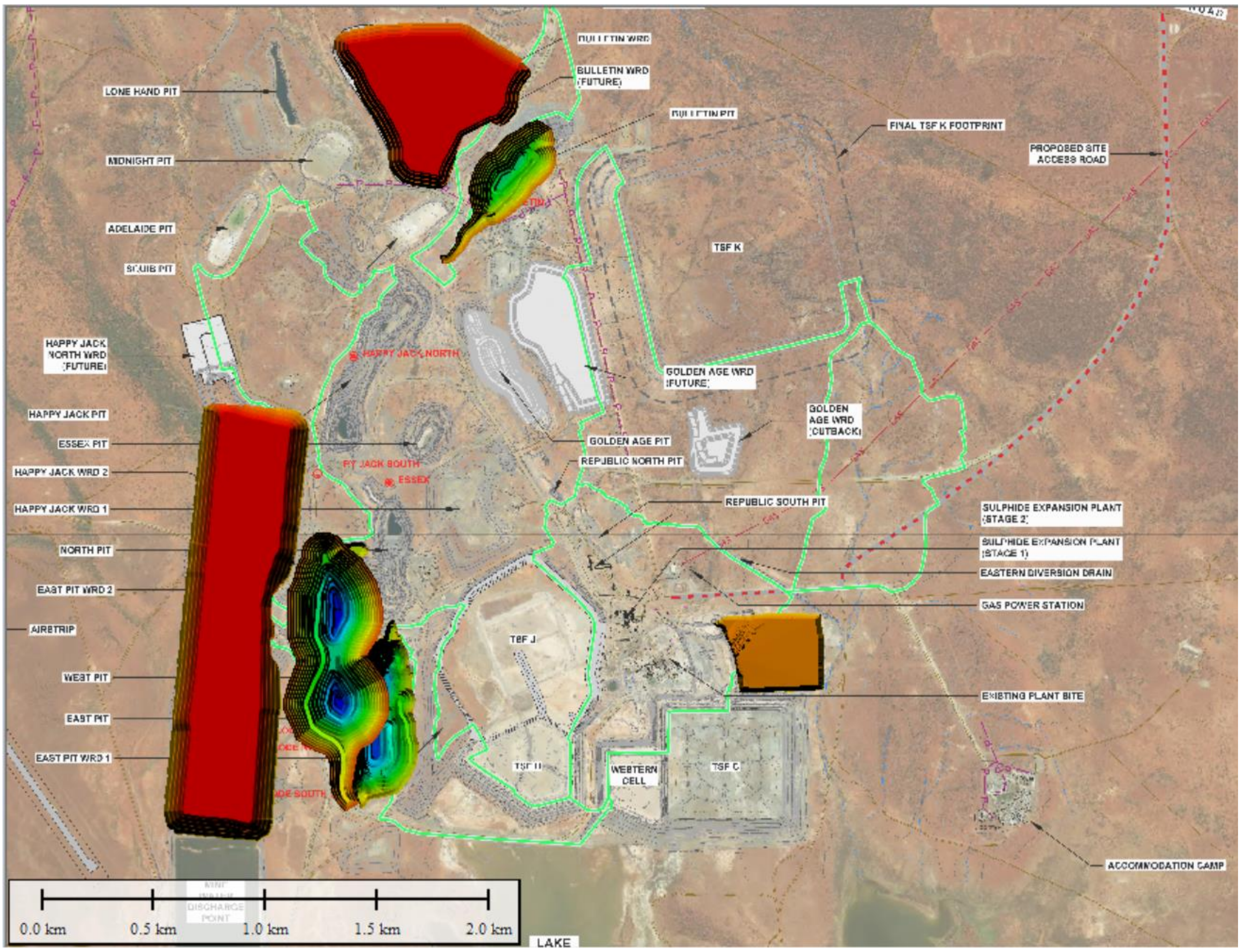


Figure 5-2: Previous site catchment boundary of the stage 3 expansion (2022) overlaid with the 2023 open pit expansion new mine plan layout.

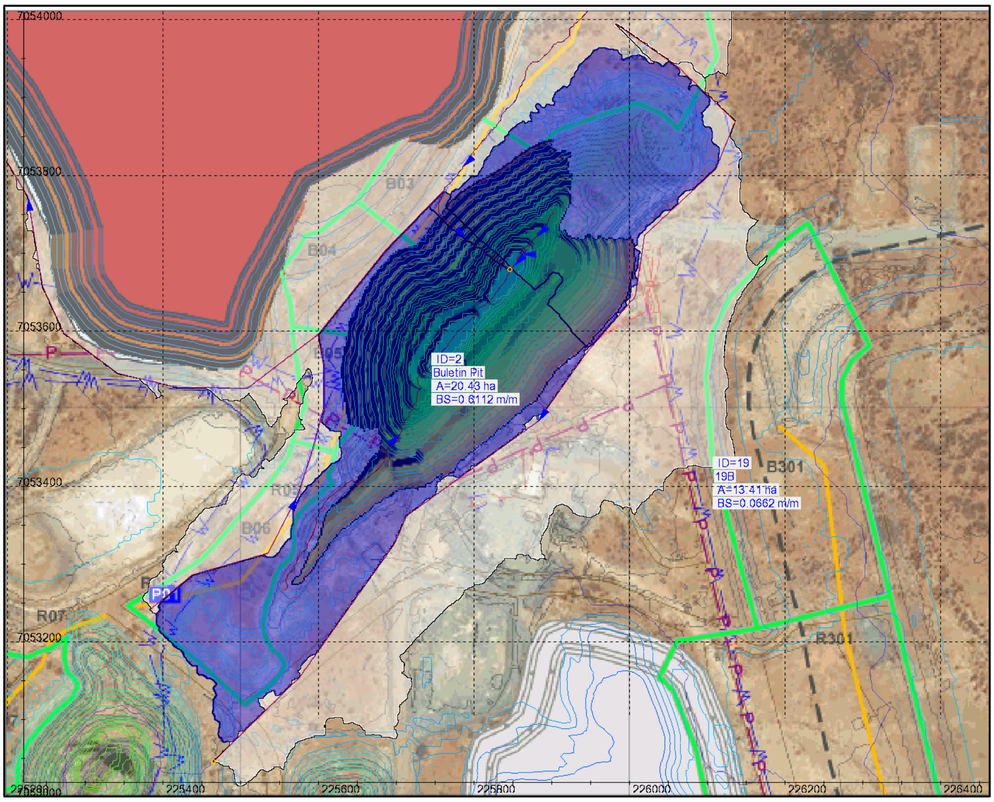


Figure 5-3: Update catchment boundary for Bulletin pit expansion 2023

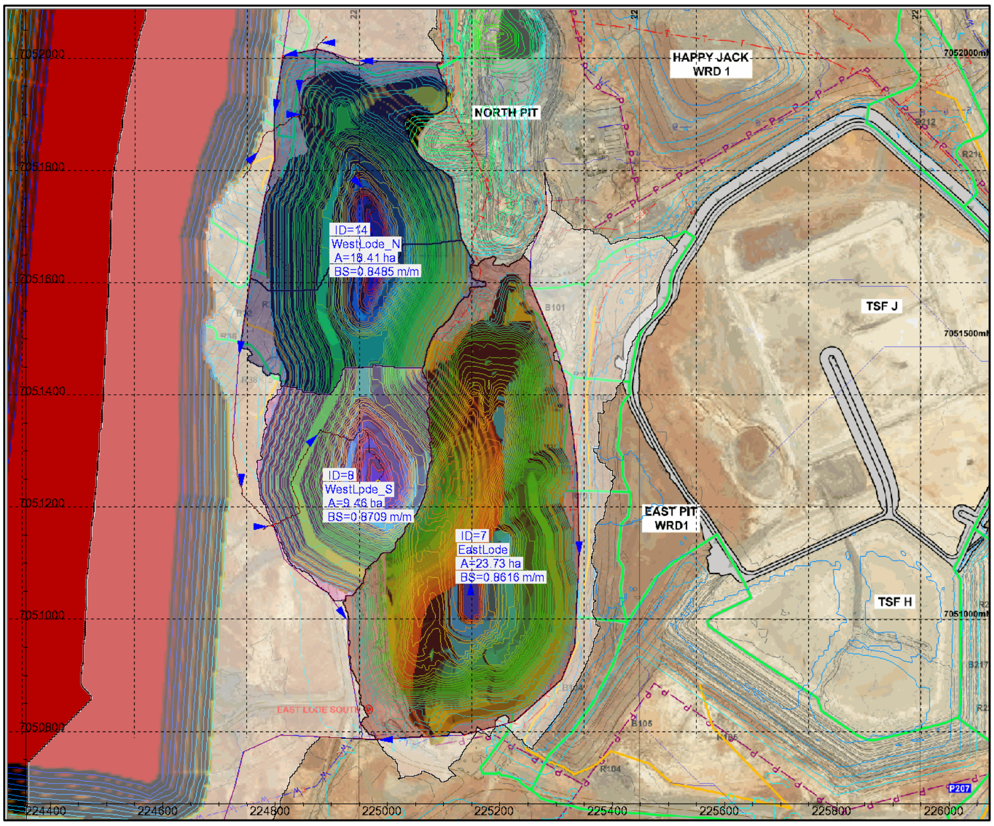


Figure 5-4: Update catchment boundary for Lode pit expansion 2023

5.3.3 Design Storm

All previous studies were derived the design storm from the Bureau of Meteorology (BOM) Design Rainfall Data System (2016). The Depth/Frequency/Duration rainfall data for the site are summarised in Table 5-4 (Ref D-3).

Table 5-4: Depth/ Frequency/ Duration for The Wiluna Site

Duration (Hours)	Storm Depth (mm) for a given Average Return Interval (ARI) (Years)				
	5 yrs.	10 yrs.	20 yrs.	50 yrs.	100 yrs.
0.017	2.3	2.9	3.6	4.7	5.6
0.033	3.9	5	6.2	8.2	10
0.05	5.3	6.9	8.5	11.2	13.5
0.067	6.6	8.5	10.6	13.8	16.6
0.083	7.8	10	12.5	16.1	19.3
0.167	12.2	15.6	19.3	24.7	29.2
0.25	15.1	19.4	24	30.6	36.2
0.333	17.3	22.2	27.4	35.1	41.5
0.417	19	24.4	30.2	38.6	45.8
0.5	20.4	26.2	32.5	41.7	49.5
0.75	23.6	30.3	37.6	48.6	58
1	26	33.4	41.4	53.6	64.2
1.5	29.4	37.8	47	61	73.2
2	32.1	41.2	51.2	66.5	79.8
3	36.2	46.5	57.8	74.7	89.3
4.5	41	52.6	65.1	83.6	99.5.0
6	44.9	57.4	71	90.5	107
9	51.1	65.2	80.2	101	119
12	56.1	71.3	87.5	110	128
18	63.9	80.9	98.7	123	142
24	69.8	88.1	107	133	153
30	74.6	93.9	114	141	162
36	78.4	98.6	119	148	170
48	84.4	106	127	158	183
72	91.9	115	138	173	200

5.3.4 Peak Flood Analysis

Peak flood analysis, especially for surface drainage infrastructure purposes was completed by Knight Piésold (Ref D-3) adopting the ARR 2019 standard for storm hyetographs, with a return interval of 100-year ARI especially for pit catchment drainage, and 10-year ARI for other drainage infrastructure catchments. Table 5-5 shows the peak flow values and maximum flood level analysis result from the previous analysis done by KP (Ref D-3).

The updated peak flood analysis related to the mine plan expansion 2023 was done especially for Bulletin and Lode pit sub-catchment. This analysis is focused on determining the potential peak discharge of surface water entering the Bulletin pit and Lode pit.

Table 5-5: Peak flow values and maximum flood level analysis results (Ref D-3)

General Location	Specific Location	Return Interval	Peak Flow (m^3/s)	Maximum Flood Level (RL m)
Eastern Diversion	Eastern Diversion Drain	10Yr ARI	-	-
	East Crossing 4	10Yr ARI	1.44	500.4
	East Crossing 2	10Yr ARI	1.0	499.7
	East Borefield Pipeline Crossing	10Yr ARI	1.0	499.6
Process Plant	North end of Pond 1	10Yr ARI	0.95	497.95
	South end of Pond 1/East Crossing 3	10Yr ARI	0.91	497.91
	Plant Site Drain 1	10Yr ARI	-	-
	North end of Plant Site Drain 1	10Yr ARI	0.94	496.83
	South end of Plant Site Drain 1	10Yr ARI	1.99	495.54
	Plant Site Drain 2	10Yr ARI	-	-
	North end of Plant Site Drain 2	10Yr ARI	0.63	496.45
	Stage 1 Sulphide Plant western channel	10Yr ARI	1.17	-
	Plant Site Pond 2 outlet	10Yr ARI	1.34	494.91
	Plant Site Drain 3	10Yr ARI	-	-
	South end of Plant Site Drain 3	10Yr ARI	1.37	493.24
Bulletin and Hapy Jack Pit	Bulletin Pit drain	100yr ARI	-	-
	Southern end of Bulletin Pit drain	100yr ARI	2.1	505.8
	Northern perimeter of Happy Jack Pit	100yr ARI	-	-
	Happy Jack Pit drain	100yr ARI	-	-
	Southern end of Happy Jack Pit drain	100yr ARI	4.9	500.7
	Western drainage channel	100yr ARI	-	-
Site Access Road	East Crossing 1	10Yr ARI	2.26	499.88
	Camp Access Crossing	10Yr ARI	2.29	499.38

Table 5-6: Peak flow values for 2023 Bulletin and Lode pit expansion

General Location	Specific Location	Return Interval	Catchment Area (Ha)	Peak Flow (m^3/s)
Lode Pit	Sump of East Lode Pit	10Yr ARI	23.73	1.27
	Sump of West Lode Pit - North	10Yr ARI	18.41	1.08
	Sump of West Lode Pit – South	10Yr ARI	9.46	0.54
Bulletin Pit	Sump of Bulletin Pit	10Yr ARI	20.43	0.86

5.4 Mine Site Hydrogeology

5.4.1 Hydrogeological Setting

The hydrogeological setting has been explained in some previous studies, with a summary as follows:

- The groundwater system underlying Wiluna Operations forms part of a regional phreatic regolith aquifer of the northern part of the Yilgarn Craton of Western Australia. This aquifer system is developed in oxidised regolith which forms a blanket over Archaean crystalline and metamorphic rocks as well as in palaeoriver channel sediment of Tertiary age and shallow overlapping alluvial fans and calcrete associated with contemporary intermittent drainages.
- Groundwater levels regionally slope downwards towards Lake Way. Groundwater occurs in regional flow systems within the major palaeodrainages and moves from the drainage divides south towards the salt lakes, and then downstream in the paleochannels. Hydraulic gradients along the palaeodrainages are generally very low, with steeper gradients occurring in the upper reaches of the catchments. High evaporation rate on these Salt Lake play as assists in increasing the groundwater flow gradient towards the lake beds through evaporation excess over groundwater inflow and up flow to the lakes.
- The regional groundwater body is saline to hypersaline (2000 mg/L to 200,000(+) mg/L) with lower salinity water (500 mg/L to 2000 mg/L) restricted to isolated recharge cells, the latter mostly associated with alluvial fans and calcrete systems. Wiluna Operations lies within the East Murchison Groundwater Area (GWA/15). Present day groundwater flow is essentially of influent flow dynamics. Recharge to groundwater is mostly through direct transfer of rainfall catchment resultant from periodic intensive rainfall events.
- Aquifers overlie the Tertiary paleochannels that include alluvium and calcrete deposits. Groundwater occurs within the primary porosity of the alluvium, and in secondary porosity (solution cavities) within the calcrete. The alluvial aquifer has low permeability due to its clayey nature, whereas the calcrete can provide large local supplies of fresh to brackish groundwater from solution cavities.
- Groundwater recharge occurs mainly via direct rainfall and surface runoff during flooding after heavy rainfall events, which occur mainly in the summer and early autumn months.
- The extremely low hydraulic conductivity of rock in the pits would prohibit the transfer of solutes to the upper groundwater systems or the paleo river channels.
- There can be significant quantities of groundwater in jointed and fractured bedrock, and some of this would contribute to the subsurface flow towards Lake Way. In the bedrock hills where there is local recharge, groundwater salinities are commonly lower than those on the flats.

The mine is at the headwaters of the Tertiary Age Lake Way paleochannel system. The base of the sedimentary sequence in the paleochannel is a fluvial sand aquifer confined beneath a dense clay layer.

- The paleochannel sand is highly permeable and contains significant volumes of groundwater, which are fresh to brackish in the tributaries and saline to hypersaline in the main trunk drainages.

Figure 5-5 shows schematic conceptual hydrogeology condition in Wiluna Mine Operation area (Ref D-12).

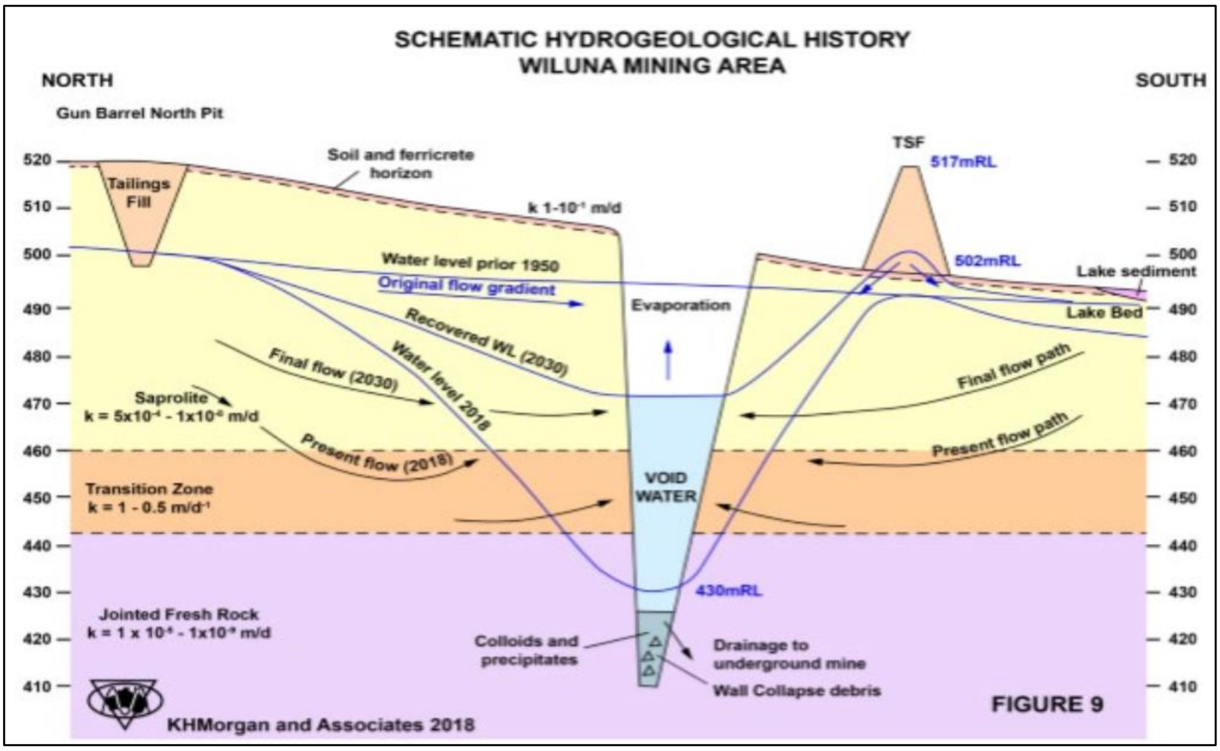


Figure 5-5: Conceptual hydrogeology in Wiluna Mine Operation area (Ref D-12)

5.4.2 Hydrogeological Parameters

The hydrogeological parameters have not been well-defined from previous studies. The available parameters are limited to the saprolite unit and jointed fresh rock unit. There're no storage parameters have been define, either for specific yield or specific storage. Table 5-7 briefly describes the hydrogeological units in Wiluna Mine Operation.

Table 5-7: Hydrogeological units and hydraulic parameters

Geological Unit	Description	Hydraulic Parameters (Data Average) *		
		K (m/s)	Ss	Sy
Alluvium	Palaeovalley sediments, tend to a low permeability due to its clayey nature.	N. a	N. a	N. a
Calcrete deposits	Have karstic properties which resulting in locally high conductivity and high recharge resulting from infiltration of stormflow runoff.	N. a	N. a	N. a
Saprolite	Saprolite regolith with alluvial/colluvial sediments present in drainage lines	6×10^{-9} to 1×10^{-13}	N. a	N. a
Fluvial sand aquifer	Expected has a highly permeable and contains significant volumes of groundwater, which are fresh to brackish in the tributaries and saline to hypersaline.	N. a	N. a	N. a
Jointed fresh rock	A thick sequence of mafic to ultra-mafic volcanics to the west, bounded by the Graphite Fault	1×10^{-10} to 1×10^{-14}	N. a	N. a

K = Hydraulic conductivity; Ss = Specific storage; Sy = Specific yield

5.4.3 Groundwater Level

Groundwater (level) monitoring well locations surrounding the Wiluna Mine Operation area are generally divided into two location areas:(1) Eastern Borefield and (2) TSF and Mine Area, while the southern bore field does not have any monitoring wells. Figure 5-6 shows the location of groundwater level monitoring holes surrounding the Wiluna Mine Operation area. (Note that the coordinate data of the TSF and mine monitoring wells is digitised from the previous report (Ref D-12), as the raw coordinate data is not available.

The water level data monitoring is only available for eastern bore field, while there is no available data for groundwater monitoring in the Mining and TSF area.

However, information gathered from previous studies (Ref D-1, Ref D-2, Ref D-12) are summarised as follows:

- Originally the phreatic level ranged from approximately 10 m below ground level in the mining area to 2 m depth close to Lake Violet. During mine dewatering, a major local depression in the phreatic water level to more than 100 m depth was present. The relatively localised extent of the dewatering depression reflects the low hydraulic conductive properties of the rock sequence.
- Kevin Morgan and Associates conducted a hydrological impact assessment of the Wiluna mining area in 2018 (Ref D-12). It was noted in that assessment that the final groundwater

level following cessation of mining at the site will recover to within 20 – 25 m of the original water level. As such mine pits will act as groundwater sinks, redirecting groundwater away from Lake Way - Lake Violet.

- Groundwater levels recently contoured indicate that groundwater flows beneath TSF K are to the west. This results from the long term mine dewatering and pit lake evaporation to the west.
- Groundwater isopotential map which adapted from Morgan, 2018 (Ref D-12) is shown in Figure 5-7.

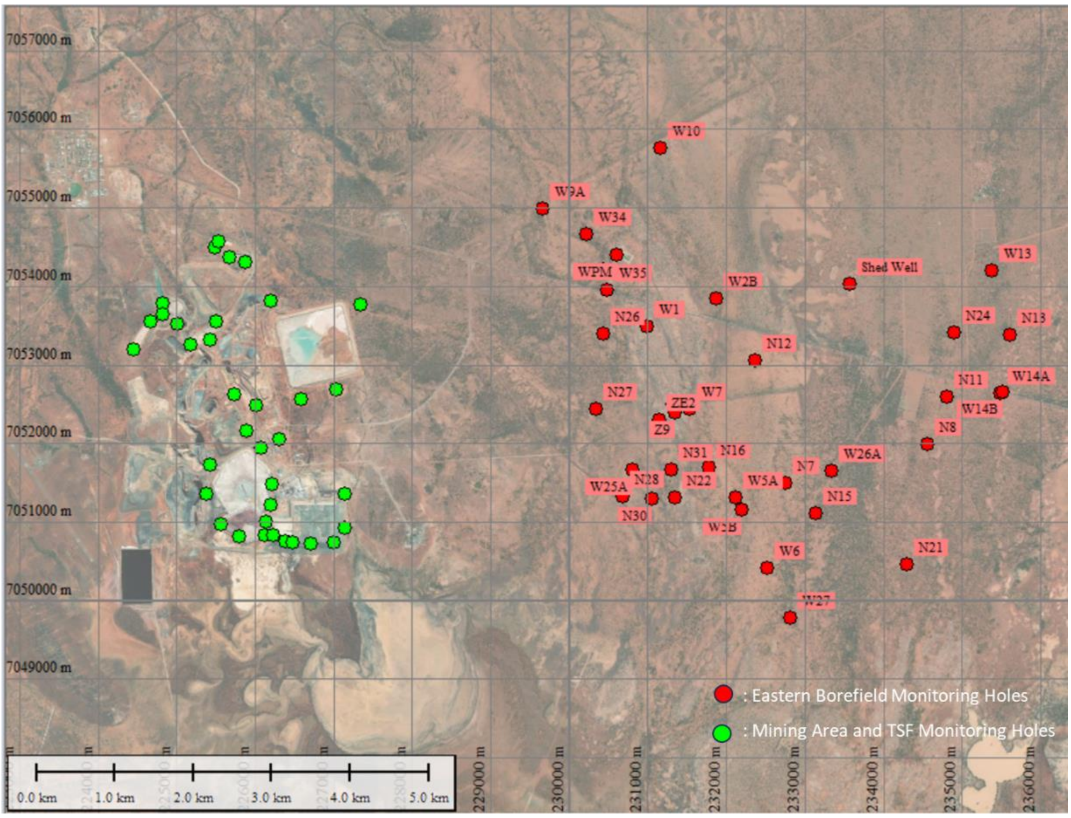


Figure 5-6: Distribution Map of Groundwater Level Monitoring Holes

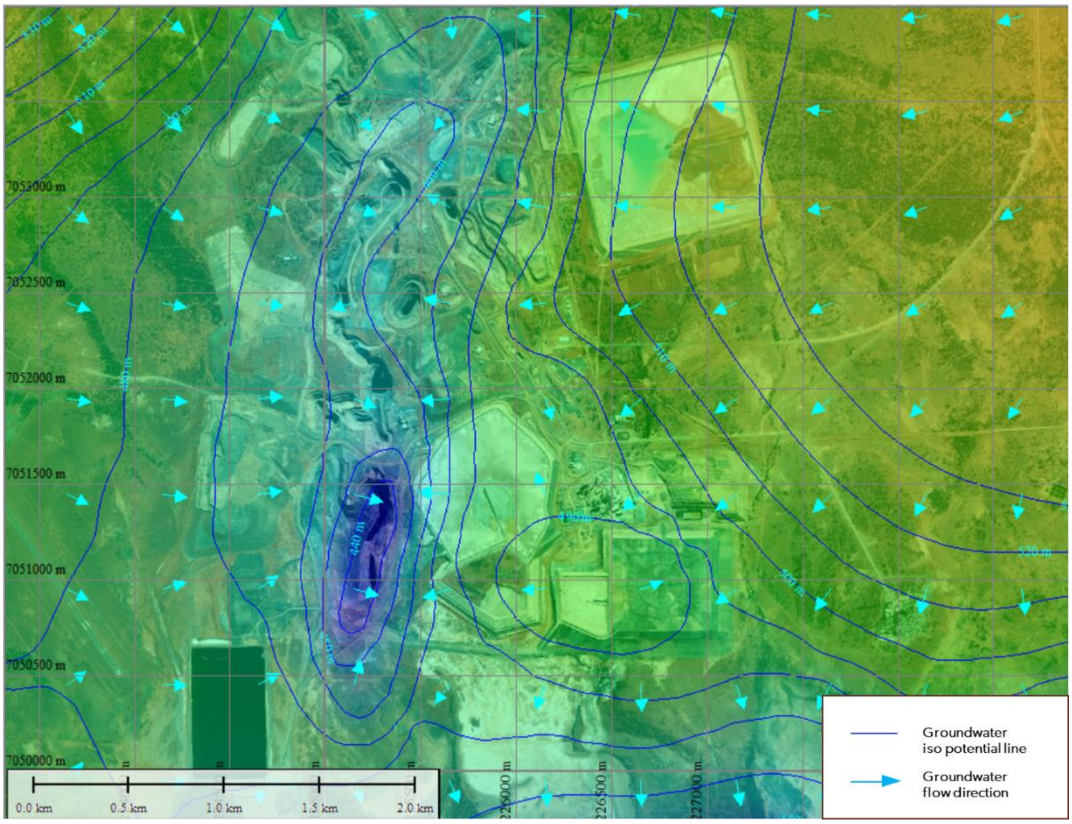


Figure 5-7: Groundwater Iso Potential Map in the Mine Area (Ref D-12)

5.4.4 Historical Dewatering

Groundwater from the active mining areas of the Wiluna Gold Operations is pumped for mining of open pits and underground mines. For underground mining, groundwater is extracted from Bulletin or East Lode underground workings and discharged into the abandoned Lone Hand open pit. For the active open mine pits, groundwater is pumped to East Pit and/or the evaporation pond, as well as being used for ore processing and dust suppression.

Historically, mine dewater has been pumped from Lone Hand Pit to the evaporation pond and then discharged to Lake Way. This system is designed to settle suspended solids and reduce potential contaminants entering the lake environment. There was no discharge to Lake Way from the Wiluna mine between 2013 and mid-2019. Discharge to Lake Way re-commenced in July 2019.

Dewatering of the Wiluna open pit and underground operations is permitted under GWL 159247(5), which authorises an annual groundwater abstraction of 2,365,200 kL for mine dewatering. Discharge of water from the Wiluna Mine Site is carried out under Licence L5206/1987/10. Mine-water pumped from the pits will be used for dust suppression, within the process plant or will report to the evaporation pond for discharge to Lake Way, in compliance with existing discharge conditions contained in Licence L5206/1987/10.

The raw data of mine groundwater dewatering are available from January 2020 until August 2022 (Ref D-7). Report of groundwater monitoring inflow are also available in Rockwater report, 2020 (Ref D-8), along with other boreholes throughout the Wiluna site.

Table 5-8: Annual mine dewatering volume (kilolitre)

Bore ID	2017-18**	2018-19**	2019-20**	2020-21*	2021-22*
Bulletin Underground	23,221	23,114	16,689	26,833	86,623
Happy Jack Underground	-	-	-	142,283	93,072
East Pit	489,104	1,273,048	529,801	1,320,786	1,003,220
North Pit	-	55,911	-	-	-
Happy Jack Pit	-	27,985	75,384	16,182	15,544
Totals	**512,325**	**1,380,058**	**621,874**	**1,506,084**	**1,198,459**
% Licence allocation	**21.7%**	**58.4%**	**26.3%**	**63.7%**	**50.7%**

*source data: "Borefields Water Monitoring_Master.xlsx" (Ref D-9)

**source data: Triennial Groundwater Monitoring Review (April 2017 – March 2020), (Ref D-8)

5.5 Predicted Groundwater Inflow

A previous study by Peter O'Bryan & Associates, 2019 (Ref C-2) concluded that in the current situation there're no sign of groundwater seepage in most of the open pit area, include:

- Golden Age North, Dry wall rocks, no sign of groundwater
- East pit, Dry wall rocks, no sign of groundwater
- West pit, Dry wall rocks, no sign of groundwater

Figure 5-8 shows the estimated groundwater surface line based on the latest data (2022) from the nearest monitoring well.

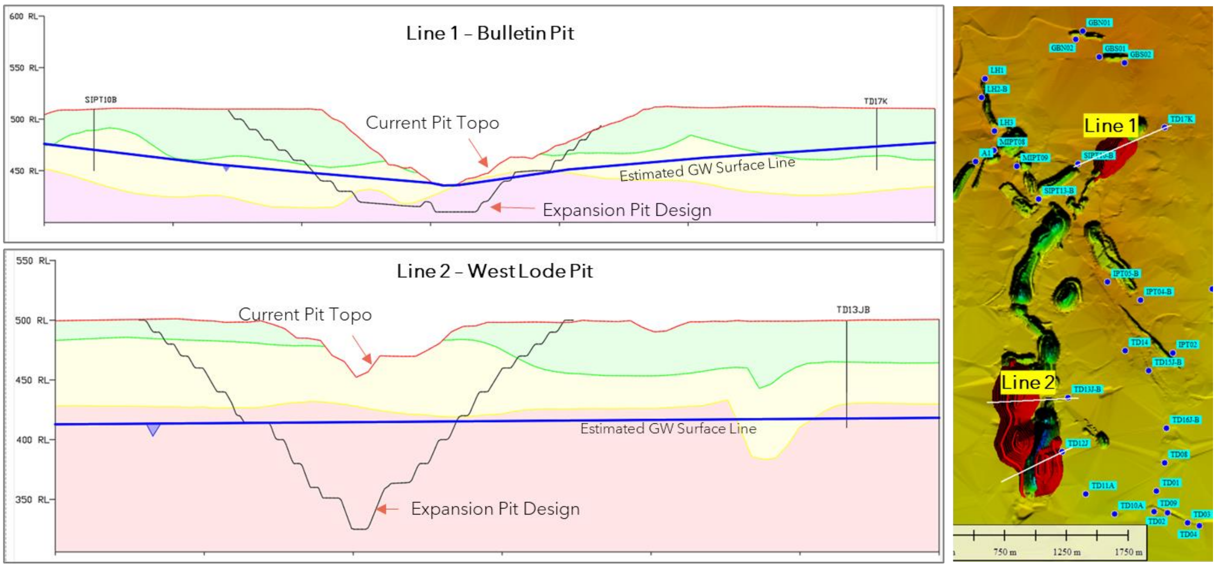


Figure 5-8: Estimated current groundwater level condition at Bulletin and Lode Pit

Simple preliminary groundwater model using Feflow software was made to give the preliminary estimation of the maximum groundwater inflow predictions and change of groundwater head due to the mine expansion plan. Due to the limited information about the hydrogeological information, assumption was made with following:

1) Hydraulic conductivity was simplified into three zones, included:
   a. Saprolite Zone, K_h = 6E-9 m/s
   b. Transitional Zone, K_h = 2E-6 m/s
   c. Fresh Zone, K_h = 1E-12 m/s
2) Specific storage was assumed as one value for all zones and set an assumed value of Ss = 1E-05
3) All mine pit openings were assumed act as drains boundary condition, with conductance value of 0.01 m^2/day.
4) Model simulation used only the final design. the simulation model is not considered the mine plan progress sequence.

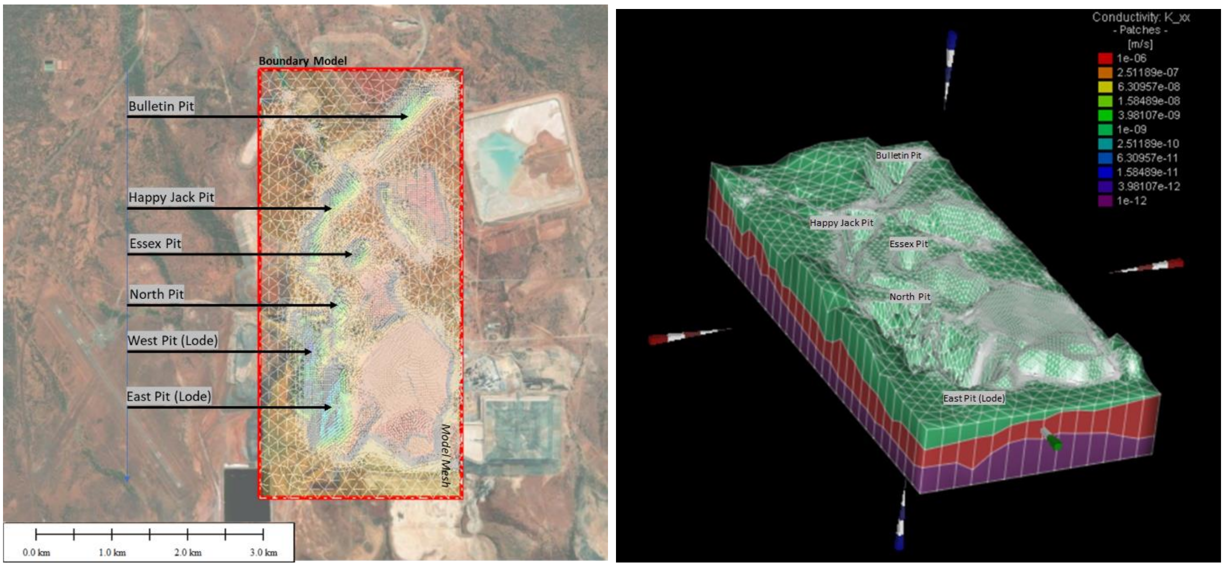


Figure 5-9: Boundary groundwater model and distribution of hydraulic conductivity

The prediction groundwater inflow results are summarised in Figure 5-10. The results show a predicted inflow for Bulletin pit expansion are between 18.1 to 17.7 litre/sec, while for Lode pit (East and West Pit) expansion are between 13.2 to 25.7 litre/sec. Due to the many uncertainties hydrogeological data and information, a conservative value is suggested use a maximum inflow prediction of 17.7 litre/sec for Bulletin Pit and 25.7 litre/sec for Lode Pit (East and West Pit).

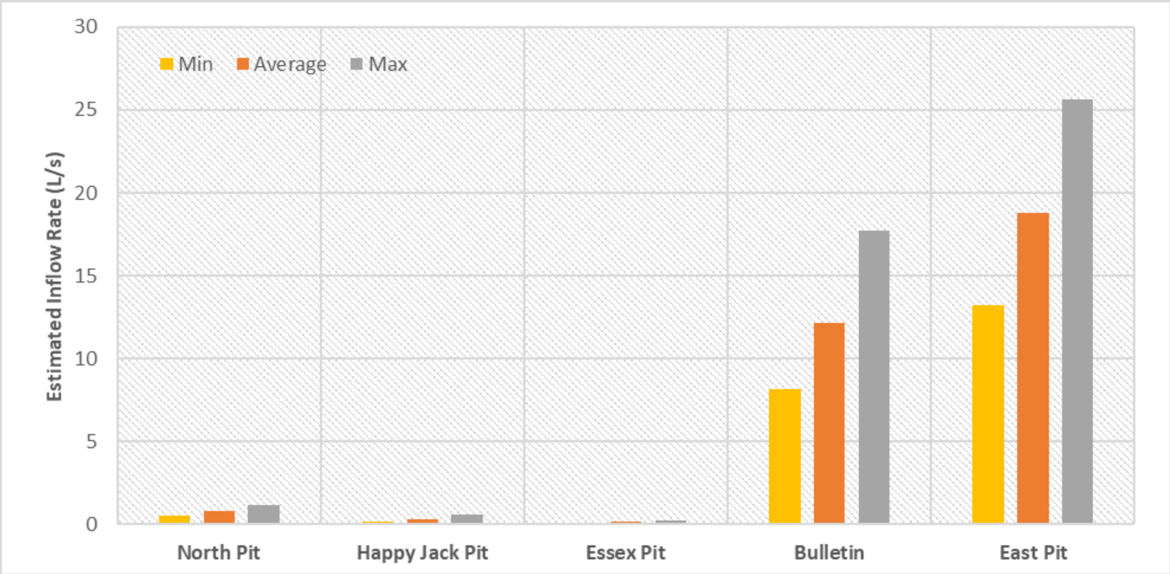


Figure 5-10: Result of groundwater inflow prediction

Please note that this prediction result has a low confidence level, due to the lack of data and many uncertainties. The results of this result should be updated as well as calibrated when additional information is available. Details fully analysed and further modelling is strongly recommended. Groundwater simulation made in this study has a few limitations reflect the complexity of the groundwater systems and data availability. The main limitations are listed below:

- The model has not calibrated.
- The level of modelling did not include a proper sensitivity or uncertainty analysis.
- Impacts of climatic or weather variations were not modelled.
- The model did not simulate any heterogeneities or any preferential groundwater flow pathways. Simplified geology has been applied in the model, with lithologies of expected high/lower conductivity generalized into single zones.
- Prediction model in simulation using only the final design. The simulation model is not carried out in the mine plan progress sequence.

5.6 Site Wide Water Balance

5.6.1 Current Water Supply

Water at Wiluna is sourced from groundwater, which is managed in line with licences issued by the Department of Water and Environmental Regulation (DWER) pursuant to Section 5C of the Rights in Water and Irrigation Act 1914. The 5C licences are listed in Table 5-9 with the ten-year licence validity for the Wiluna area expiring in June 2024.

Table 5-9: DWER 5C Licences for Groundwater Abstraction

Source	Licence Number	Licence Expiry	Annual Limit (m^3)
Eastern Borefield	GWL 57622(7)	05/06/2024	1,500,000
Caledonian Pit	GWL 56080(7)	05/06/2024	150,000
Wiluna Mine Area	GWL 159247(5)	05/06/2024	2,365,200
Matilda Mine Area	GWL 182219(2)	08/05/2026	726,000
Galaxy Mine Area	GWL 182234(2)	15/03/2026	130,000

The primary source of water for the processing plant and mine village is the eastern borefield, which supplies low and medium chloride water. The Caledonian Pit also supplies low salinity water. The water from the Wiluna, Matilda and Galaxy mine areas is hypersaline water from the open pits and underground dewatering operations.

Wiluna used to hold a 5C licence to abstract 1,130,000 m^3 per annum of groundwater at the Southern borefield (GWL 167013(3)), but this was sold to Salt Lake Potash Ltd in 2019 as part of a tenement sale agreement.

The annual abstraction volumes for the April to March reporting period are provided in Table 5-10. The mine dewatering volumes are provided in Table 5-8 above. As observed, abstraction rates from the eastern bore field have been below the licenced limit of 1.5 GL/y.

Table 5-10: Annual Water Abstraction in Gigalitres

Year Ending	Licence	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23
Eastern Borefield	1.500	0.859	0.849	0.989	0.891	0.810	1.209
Caledonian Pit	0.150	-	-	-	-	0.007	0.016

The monthly abstraction by source is shown in Figure 5-11 based on daily flow meter readings recorded by the processing plant. The annual licence limit for the eastern borefield is 1.5 GL/y, which equates to 125 ML per month. While there was a step increase in water consumption during the 2022 sulphide campaign and while ~125 ML/month was demonstrated, abstraction was not sustained at this rate. Additional bores have been drilled and the site team are currently installing the pumps, pipeline, power and telemetry to increase and sustain abstraction at the licensed limit.

Water supply from the Caledonian pit is limited, and although the licence is 0.15 GL/y, annual abstraction has been well below the limit. Water was pumped for a few months in 2022 before it was drawn down. Available data from the early 2000s also recorded low rates of 0.03 GL/y.

Decant return water from the TSF has been consistent and averaged 35 ML/month (~50 m^3/h). Historically, decant return has averaged ~30% of the volume discharged to the TSF.

A small volume of mine dewatering water from the Lone Hand pit was also sourced during 2022.

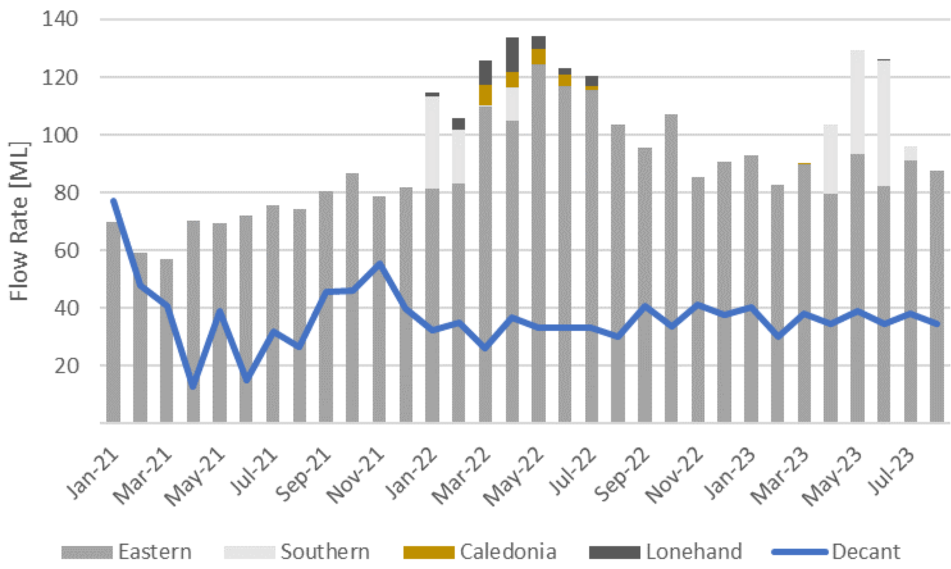


Figure 5-11: Monthly Water Flows Recorded by the Processing Plant from 2021

5.6.2 Future Water Requirements

The processing plant will treat 0.75 Mtpa (94 tph) of refractory sulphide feed through flotation, BIOX and leach/adsorption and up to 3.2 Mtpa (400 tph) of tailings retreatment through leach/adsorption to produce gold doré. The water requirements for the operation are discussed below.

In restarting the BIOX circuit, decant return water must be kept separate from the water for the BIOX circuit as the residual cyanide is toxic to the bacteria. The bacteria are also intolerant to high chloride concentrations, which prevents use of the hypersaline mine dewatering. Hence, the eastern borefield water would be used for the grinding, flotation and BIOX circuits, and the TSF decant return and mine dewatering water used for tailings retreatment.

Based on available data from the 2000s, the previous BIOX operation sourced >50 ML/month from the southern borefield and approximately 70 ML/month from the eastern borefield. The previous operation also had a flotation tailings thickener to recycle water within the processing plant. As the southern borefield is no longer available due to the tenement sale, the eastern borefield needs to offset the supply from the southern borefield.

The site water balance can be maintained by sourcing 125 ML/month (~187.5 m^3/h) from the eastern borefield and adding three more thickeners to increase the recycle and re-use of water within the processing plant. These include a flotation tailings thickener and a neutralisation discharge thickener for the grinding, flotation and BIOX process, and a final tailings thickener for the tailings retreatment process. Each of these are discussed in more detail in Section 9.4.

The site water balance is provided in Figure 5-12. The full version is provided in Appendix F2.

The water balance shows the grinding, flotation and BIOX process and village consuming 185 m^3/h, which is effectively the licenced limit of 187.5 m^3/h (125 ML/month). Hence, maintaining the water balance is very dependent on abstracting water from the eastern bore field to the licenced limit. As above, it was noted that recent abstraction from the eastern borefield had not sustained

125 ML/month (~187.5 m³/h), although the site team are working through upgrades to increase and sustain abstraction at the licenced limit.

With the increase in throughput to 3.2 Mtpa, the water required for tailings retreatment is 430 m³/h. While the TSF decant return also increases with the increased throughput, the return is ~30% of the volume to the TSF. A final tailings thickener is proposed as this would recover 243 m³/h for immediate re-use rather than ~30%. There would be an additional 120 m³/h of TSF decant return as well. Without a final tailings thickener, the TSF decant return would be limited to 185 m³/h and insufficient for the planned tailings retreatment rate. The TSF decant return previously demonstrated flow rates close to 120 m³/h (80 ML/month) in January 2021, but will be confirmed in the next stage of study that the pump and piping system can sustain these rates.

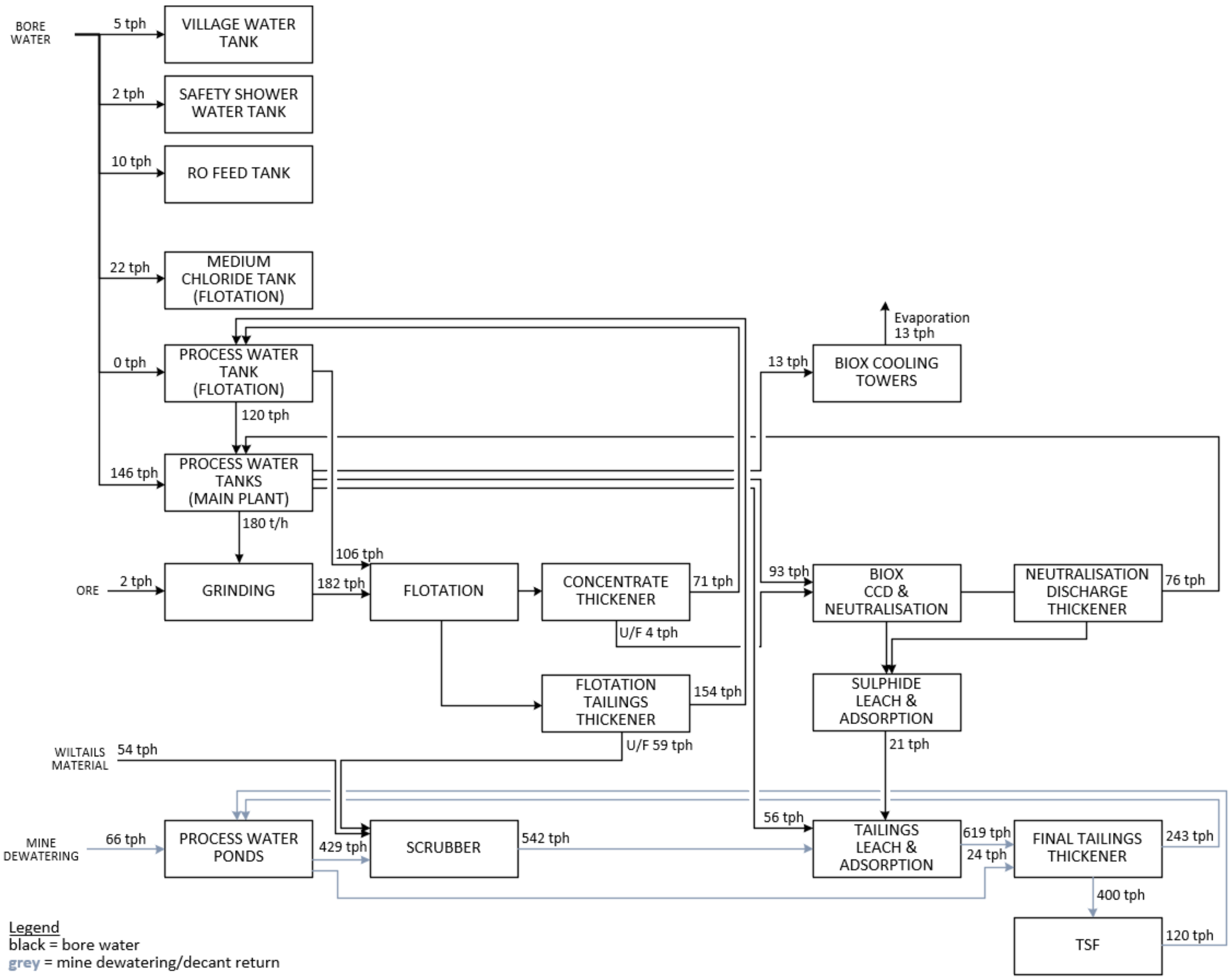


Figure 5-12: Site Wide Water Balance

The supply of mine dewatering water to the processing plant has recorded flow rates of ~100 m³/h (28 L/s) based on recent data, although supply could be up to 162 m³/h (45 L/s) as advised by the site team. For the site water balance at 400 t/h, 66 m³/h is required, hence there is excess supply. A comparison of the water requirements at different throughput is presented in Table 5-11, which shows the final tailings thickener overflow and the TSF decant return flow rates increasing with throughput, but so too the mine dewatering water required for the higher throughput.

Table 5-11: Water Requirements at Combined Throughputs of 200, 300 & 400 tph

	Units	200 tph	300 tph	400 tph
Ore Tonnes	dtph	93.8	93.8	93.8
Low/Medium Chloride Bore Water	m^3/h	185	185	185
Tailings Reclaim Tonnes	dtph	104.7	204.4	304.0
Process Water Pond to Scrubber	m^3/h	189	309	429
Final Tailings Thickener Overflow	m^3/h	152	198	243
TSF Decant Return	m^3/h	60	90	120
Mine Dewatering Water Required	m^3/h	N/A	21	66
Mine Dewatering Water Excess	m^3/h	100	79	34

If there is a restart of underground mining, the requirements for low/medium chloride water for underground operations need to be identified and incorporated into the site water balance.

There is a Brackish Water Reverse Osmosis (BWRO) unit at the flotation area that has not been used since the sulphide flotation campaign finished at the end of 2022. The BWRO unit was used to treat medium chloride water from the eastern borefield to high quality water (200 ppm Total Dissolved Solids (TDS)), which was used to wash the flotation concentrate to reduce the contained chloride. The BWRO unit is designed to treat 1,000 m^3/d (~40 m^3/h) of brackish water <5,000 ppm TDS, and hence unable to treat the hypersaline mine dewatering water. There is an opportunity to upgrade the BWRO to a Sea Water RO (SWRO) unit to treat mine dewatering water and supply additional low chloride water. A SWRO unit can treat saline water <40,000 ppm TDS.

5.7 Mine Water Management

In general, a site water management system has been developed with a focus on control:

1. Clean Water
    - Clean water is sourced from bore fields and used for the processing plant and mine village.
    - Runoff from undisturbed or rehabilitated areas where vegetation is fully established and where the water quality is suitable for release or used as a raw water under license.
2. Contact Water
    - Water that intercepts the mining area and mining material (including pit, underground mine, waste dump, tailing facility, and processing area).
    - Mine affected water will be preferentially sourced to meet onsite demands and limit the potential for discharge.

Dewaters the underground network will follow the previous dewatering pattern by removing service water, ground-water inflow, and water in flooded voids. Groundwater is pumped to the surface from mining operations before being discharged to the abandoned pits and or evaporation pond.

Surface water management at Wiluna includes operational and/or abandonment bundling around all pits to prevent runoff inflows. Several drains have been installed at Wiluna to divert surface water flows around major infrastructure such as mine pits area, plant areas, and surface tailings storage facilities.

Surface water management infrastructure has been designed for each of the nominated significant design areas and comprises a combination of channels, culverts, and remedial works at defined locations. Full design details and drawings are presented in the Knight Piésold report (Ref D-3).

Mine expansion (2023) of the Bulletin and Lode Pit (East and West) pit is not expected to impact the hydrology of the project site significantly. However, the expansion of the Bulletin waste dump and east waste dump will block a flow path that currently drains, which could result in more surface water flowing into the extension pit plan.

Minor adjustments to the surface water infrastructure need to be done related to the extension of the Bulletin and Lode pit and waste dump, including some of the following:

- A new adjustment drainage channel will be required along the south and southeast of the Bulletin WRD extension (Figure 5-13).
- A new adjustment drainage channel will be required along the east of the East WRD extension (Figure 5-13).
- An additional pit protection bund needs to be constructed along the north-east perimeter of Bulletin pit and east perimeter of Lode pit to control any run-off drain.

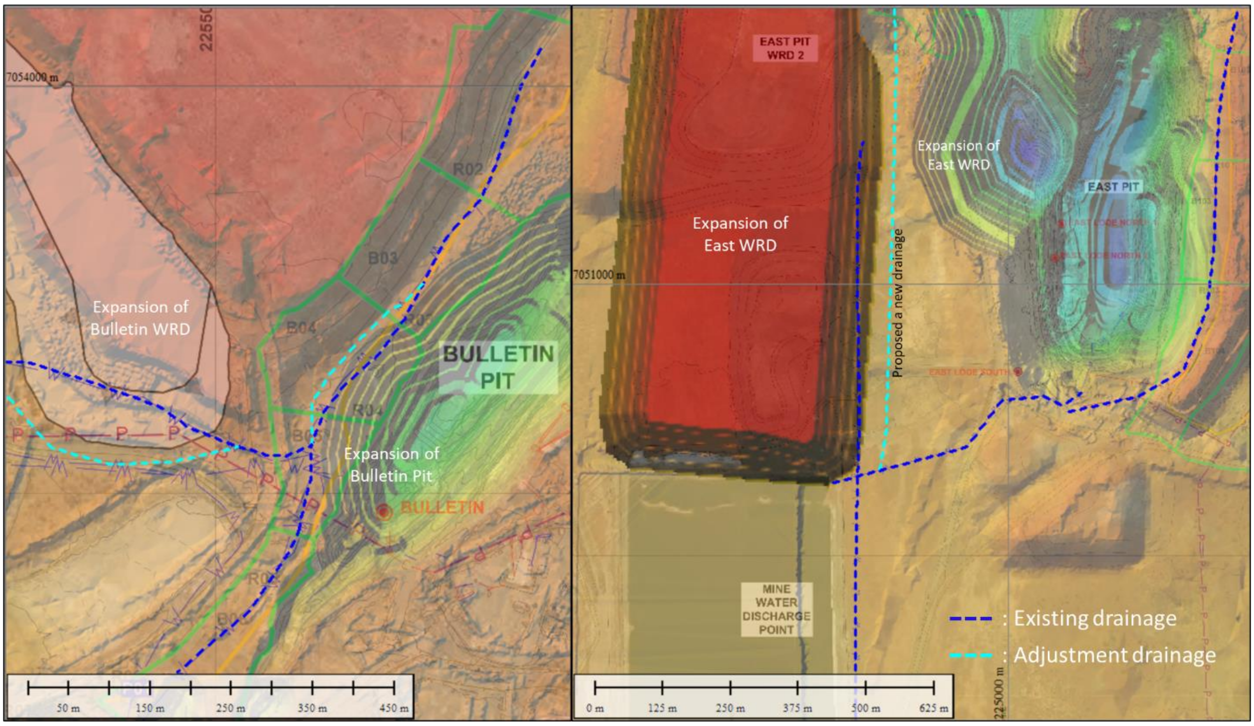


Figure 5-13: Surface water infrastructure adjustment related to mine expansion (2023) of the Bulletin and Lode (East-West) Pit

6 OPEN PIT MINING

The Wiluna deposit has been historically mined using both surface and underground mining methods. There is interaction between the historical mining, with void exposure from the open pits occurring sporadically. The historical open pit mining utilised conventional truck and excavator mining.

The Wiluna deposit encompasses pits along a 4 km strike distance and includes both sulphide and free milling (quartz reef) ore. Historical mining exploited both sulphide and free milling ore, however the current study targets sulphide material. Where free milling material is encountered it will initially be processed until sulphide ore processing starts and then stockpiled for processing at an opportune time in the processing schedule.

Wiluna currently has the capacity to process free milling ore in conjunction with tailings material via the Wiltails repulping trommel and linear screen, as well as the ability to process sulphide ore in the float plant, producing sulphide concentrate. However, due to poor payability and marketing challenges associated with the concentrate, a BIOX processing facility is proposed for the sulphide ore. This study targets 4 years of continuous sulphide feed from the open pit at 750 ktpa.

When the BIOX plant is not operating, the CIL processing facility is also available for processing oxide at 1.7 Mtpa and transitional material at 1.3 Mtpa. Wiltails can be processed as supplementary feed during periods of oxide and transitional material shortfall when the CIL plant is operating.

This study also investigates the timeline for environmental, heritage and mining approvals for mining the Wiluna deposit.

6.1 Provided Data

Mining One was provided a data pack for a Value Optimisation study completed in April 2023. This data included mining data (underground and open pit mining voids), topography surfaces (pre mining and post mining), previous reports and studies.

Updated topographical information was provided to Mining One during site visits in July 2023. Reconciliation data, approvals and permitting information, as well as volumes for required various in situ materials (calcrete, wiltails) were also provided during this site visit.

The block model was generated by Mining One as part of this study utilising wireframes and drilling data provided from Wiluna Mining Corporation. This block model includes tagging for mined material.

For the open pit component of the study, Mining One used the following files:

- Resource Block Model, generated by Mining One (wil_m1_jun23_bm.mdl)
- As Built Topograpy/Open Pit Voids (wiluna_openpits_asmined_all_20210404.dtm, 03asbuilt_local.dtm)
- Final Mined Surface Topography (wiluna_topo_local_dm.dtm, 02total_cut_local.dtm)
- Pre mining surface (dem_01natural_surface_local_triangulated.dtm)
- Weathering surfaces (Wiluna BOCO_2016 Triangulated.dxf, Wiluna TOFR_2016 Triangulated.dxf)
- Reconciliation data (HJS_Bench_Summary_Master.xlsm)

6.2 Pit Optimisation

6.2.1 Block Model

An updated Wiluna block model was prepared to include all minable areas in the Wiluna deposit into a single block model for simpler downstream processing.

The block model prepared by Mining One geologists utilising Ordinary Kriged (OK) statistical modelling methodology. It incorporates up to date mined surfaces and wireframes as provided by the client, as well as any existing waste dumps or other variations in land surfaces. The block model was generated using GEOVIA Surpac ™ software, and includes gold, arsenic and sulphur, as well as weathering, resource classifications and an ore delineation for processing identification if required. The block model used for the Wiluna Optimisation was "wil_m1_jun23_bm.mdl".

The geometry of the Wiluna deposit block model is shown in Table 6-1, below.

Table 6-1: Block Model Dimensions

Parameter	Minimum	Maximum	Block Dimension (m)	Sub Block Dimension (m)
X Origin	8950	11400	5	1.25
Y Origin	8600	13700	10	2.5
Z Origin	100	1600	5	1.25

6.2.2 Optimisation Methodology

The Whittle Optimisation process was generally conducted as illustrated in Figure 6-1. The process involves the evaluation of a deposit by considering potential economic pit(s). The shell is generated from the blocks within the model considering the mining geometric and economic parameters to estimate a potential economic pit. The blocks are used to approximate the slope angles within allocated zones that are then used in Whittle to determine the ultimate pit shell. The slope angle is represented by a derivative of the block model parent cell block and is only a general approximation of the slope angle provided.

Whittle uses the Lerchs-Grossman algorithm optimisation technique to generate a series of nested shells based on the parameters stated in Section 6.2.4 and Section 6.2.3. The nested pits are generated considering a range of revenue factors (gold prices) to determine pits of lower to higher cost per ounce of gold. This is done on a current value basis and provides a series of shells for further analysis.

Subsequent analysis of the shells determines which pit may provide the best economic result for a given set of economic conditions, such as mining sequence, mining and processing rates, bench advance rates, discounting etc. This analysis assists in the determination of the best shells for the given set of economic and mining criteria.

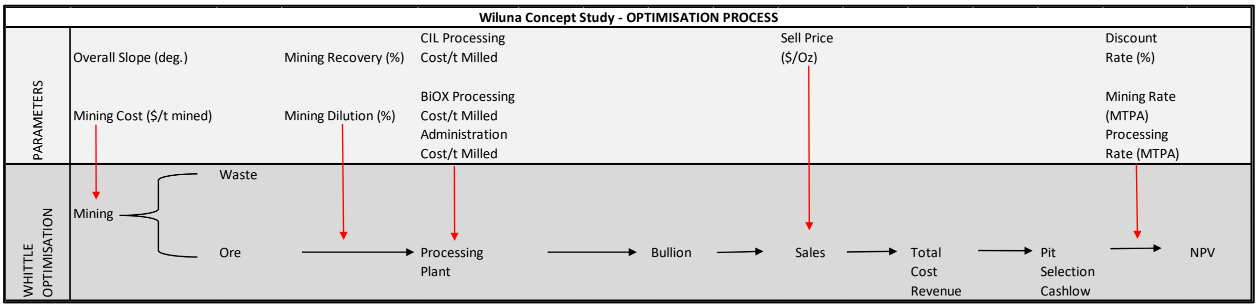


Figure 6-1: Whittle Optimisation Methodology

6.2.3 Model Preparation for Optimisation

The block model was prepared for GEOVIA Whittle ™ 4X Optimisation software. This included adding Mining Costs and Adjustment factors, Processing Cost Adjustment Factors, geotechnical zones and material processing classifications. Processing Cost Adjustment factors are assigned a default value of “1” and are specifically defined for each processing method in Whittle.

The model was adjusted for mined material and backfilled material using the following topographies:

- As Built Topography (03asbuilt_local.dtm)
- Final Mined Surface Topography (02total_cut_local.dtm)

There was no delineation between waste backfill and tailings backfill with residual gold content.

The following information was used to classify the rock types located at the Wiluna site:

- Resource Category
- Weathering status
- Leachability (preferential milling method)

6.2.4 Optimisation Parameters

A summary of optimisation parameters used is presented in Table 6-2.

An average mining cost of $4.95/t was used for this optimisation. These mining costs were generated from first principles using cost estimates from most recent Wiluna costs with indexing to 2023. The mining cost includes contract mining, grade control, load and haul and mining related site operational staff.

Two processing methods will be used in parallel for the different material types:

- for the oxide and transitional material, a Carbon In Leach (CIL) plant will be used to produce gold doré, and
- for the primary material, the flotation concentrate will be treated by Biological Oxidation (BIOX) plant to oxidise the sulphides ahead of the CIL and Elution circuit to produce gold doré.

Costs and recoveries for the processing plants were generated from the previous studies and historical performances at the Wiluna mine.

Table 6-2: Optimisation Parameters

MINING PARAMETERS			
PARAMETER	**Notes**	**Unit**	
Dilution		%	115
Recovery		%	95
Mining Cost	Based on 777 fleet	Base $/t mined	4.95

PROCESSING PLANT PARAMETERS			
PROCESSING COSTS	**Notes**	**Unit**	
OXIDE (Incl. General and Administration)[1]		$/tonne milled	23.30
TRANSITIONAL[2] (Incl. General and Administration)		$/tonne milled	26.27
SULPHIDE Breakdown			
SULPHIDE - Incl. General and Administration, Flotation OPEX		$/tonne milled	56

MILL RECOVERY			
PARAMETER	**Notes**	**Unit**	
Free Milling CIL - Oxide		%	84
Free Milling CIL - Trans		%	78
BIOX Mass Pull		%	4.1
Flotation recovery		%	87.5
BIOX recovery		%	96

FINANCIAL PARAMETERS			
PARAMETER	**Notes**	**Unit**	
Sell Price	Au (Dore)	$/oz	2650
Refining Cost		$USD/Oz	1.60
Royalty	State and 3rd Party	%	6.1
Discount Rate		%	10

[1] General and Administration cost of $4.00 used

[2] Including Free Milling Sulphides

6.2.4.1 Mining Costs

For the optimization, mining costs for the Wiluna open pit mine optimization were generated from first principles using cost estimates from most recent Wiluna costs with indexing to 2023. The mining cost includes contract mining, grade control, load and haul and mining related site operational staff. The costs are based on Caterpillar 777 trucks (or similar) and associated excavator fleet.

A mining cost of $4.95 was used in the optimization.

The detailed cost model is presented in Appendix E1.

6.2.5 Geotechnical Parameters

Geotechnical parameters were based on the performance of existing slopes from the exposed East Lode pit. Inspection of the existing open pit voids at the Wiluna mine, combined with a desktop review of the previous Prefeasibility and Feasibility studies which predominantly references work completed by Peter O'Bryan & Associates (PBA), highlighted that the existing slope angles (batter face and overall) were fit for purpose, and did not require any modifications.

The geotechnical slopes used were based on the following parameters:

- East Lode – As Built measured overall slope angles
- West Lode – As Built measured overall slope angles
- Bulletin Pit – PBA Parameters

Further opportunities for refinement may be investigated during future studies or works, whereby additional drilling, mapping and material testing data can be gathered to investigate material parameters and appended to any existing defect data to improve geotechnical understanding of the Wiluna area.

The parameters used in this study are presented in Table 6-3, below.

Table 6-3: Geotechnical Parameters - Optimisation

PARAMETERS	Notes	Unit	
Bulletin, Overall Slope - Ox	PBA	degrees	35
Bulletin, Overall Slope - Trans	PBA	degrees	40.3
Bulletin, Overall Slope - Fresh	PBA	degrees	47.6
South, Overall Slope	As Built	Degrees	50

The geotechnical parameters adopted for this optimization allows for one single lane ramp to increase potential pit depth and minimize waste strip.

6.3 Block Model Import Validation

The tonnages within the block model were compared using the two packages: Whittle and Surpac. This ensures that there are no import issues or data that is left out of the optimization process. No discrepancies were found between the block model tonnes when the import was compared.

6.4 Pit Area Selection

The open pits were selected based on the proximity to existing underground access, accessibility in terms of mining around existing voids, low stripping ratios and meeting the BIOX mill targets. The block model was divided into main pit zones in line with historical pit areas. Figure 6-2 shows the historical names in the Wiluna project.

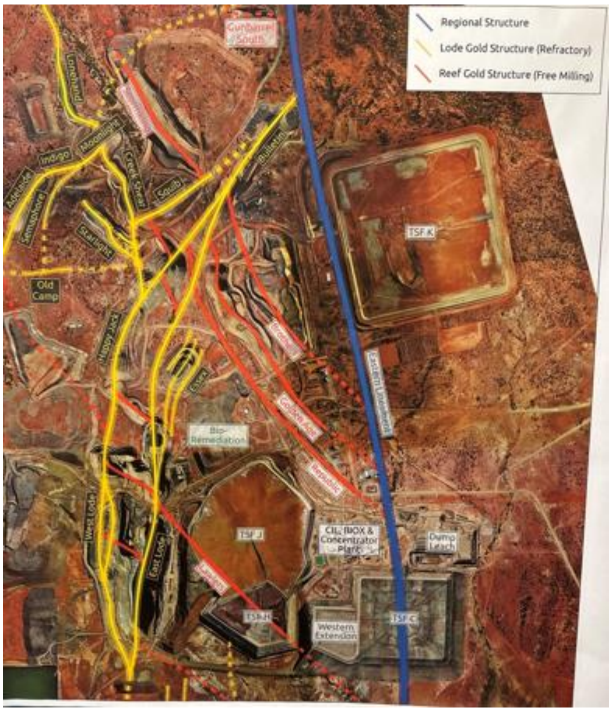


Figure 6-2: Wiluna Named Pits

The following pit areas were identified for design:

- South (West Lode and East Lode)
- Bulletin

Happy Jack Central was identified as an area with potential however was excluded due to the heritage area immediately adjacent to Happy Jack. It was determined that the heritage area may cause design challenges for the project. This also allowed an existing underground access to be utilised for any underground workings.

The South area was named due to the proximity between the West and East Lode. Historically, various identifiers linked to the lodes were used interchangeably to identify pits in this area. Due to the existing pit void in the area, the optimisation area was identified as "South" to simplify reporting of material within the shell.

Additional areas can be selected for optimisation and further economic assessment during the next stage of the project.

6.5 Pit Optimisation Scenarios

The following scenarios were run during the pit optimisation:

- BIOX case, processing Measured and Indicated only material (MI)
- BIOX case, processing Measured, Indicated and Inferred material (MII)

6.6 Pit Optimisation Results

Whittle optimisations constrained to the Bulletin area and South area (East and West lode combined) were run by adopting all the parameters mentioned in the previous sections and were conducted on both Measured and Indicated (MI) only material as well as Measured, Indicated and Inferred material (MII). For simplicity, the optimisation for the BIOX MI case is shown below.

The pits for each area are as follows:

- Bulletin – Shell 34
- South – Shell 36.

Figure 6-3 and Figure 6-4 shows the BIOX optimisation results for each area.

Due to the constraint method used in the optimisation, the results shown below present slightly higher tonnages than the designed pits. Further reconciliations are presented in the Design Reconciliation section of this report.

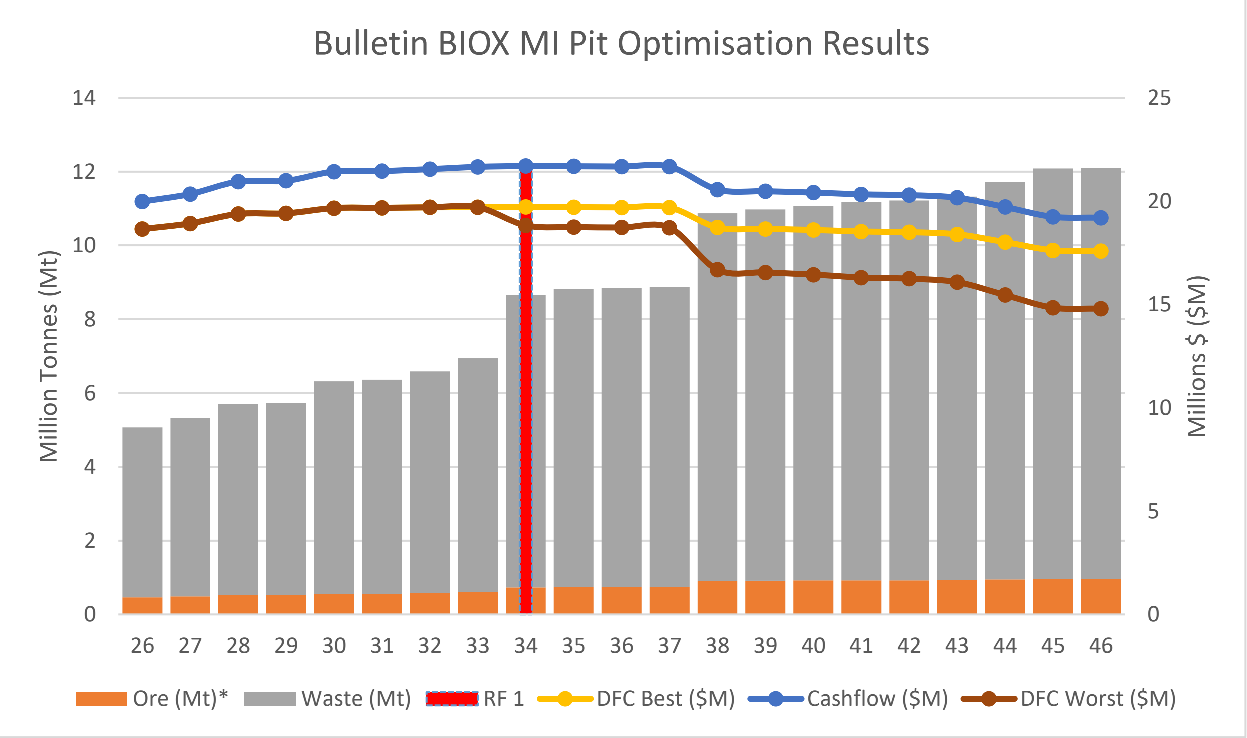


Figure 6-3: Bulletin BIOX MI Pit Optimisation Result

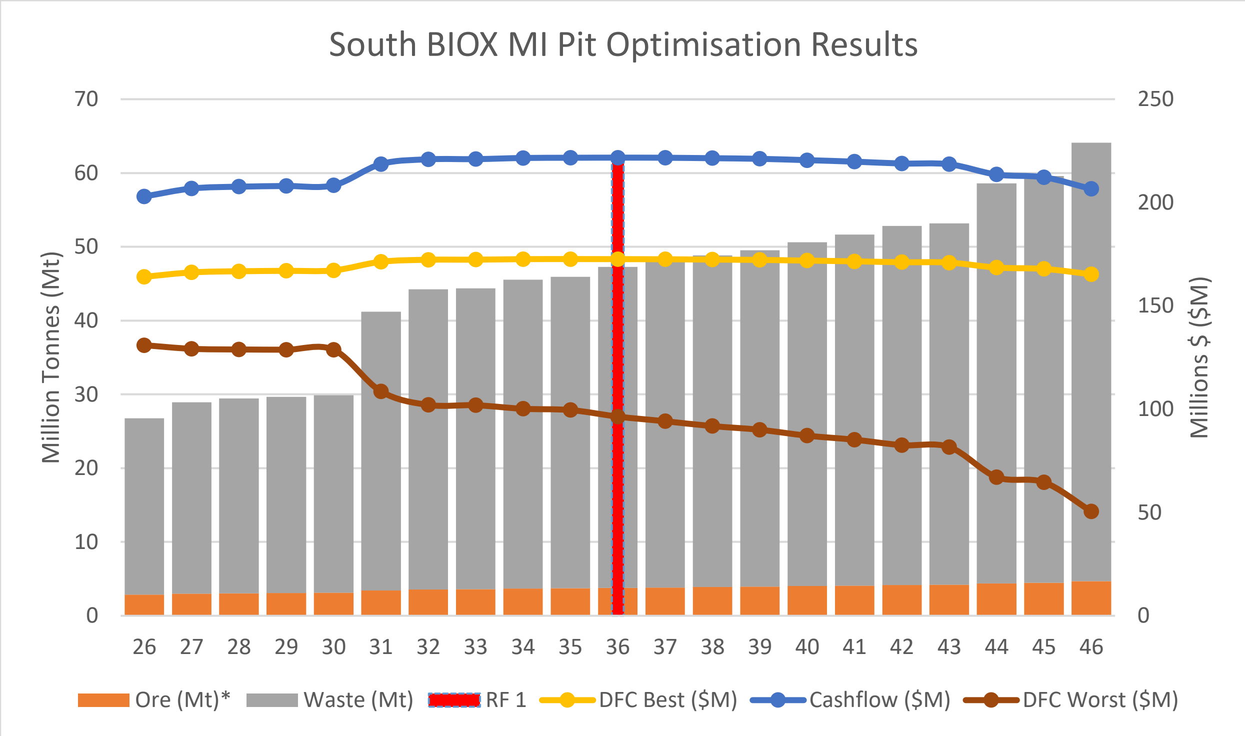


Figure 6-4: South BIOX MI Pit Optimisation Result

The optimisation pit physicals are presented in Table 6-4 and Table 6-5, below.

Table 6-4: Bulletin Pit Shell 34 Physicals

Physicals	Unit	Pit Shell 34
Au price	$/oz	2,650
Revenue Factor		1
Total Rock Moved	Mt	8.6
Waste Tonnes	Mt	7.9
Ore Tonnes	Mt	0.7
Au Grade	g/t	1.91
Au Saleable	k oz	37
Strip ratio	t/t	10.9
Cash Flow*	$ M	21.7
NPV (Best)	$ M	19.7
NPV (Worst)	$ M	18.8

*From operating costs only, derived from optimisation

Table 6-5: South Pit Shell 34 Physicals

Physicals	Unit	Pit Shell 36
Au price	$/oz	2,650
Revenue Factor		1
Total Rock Moved	Mt	156.9
Waste Tonnes	Mt	144.6
Ore Tonnes	Mt	12.3
Au Grade – Primary	g/t	1.97
Au Saleable	k oz	650
Strip ratio	t/t	11.7
Cash Flow*	$ M	448.1
NPV (Best)	$ M	307.6
NPV (Worst)	$ M	100.3

*From operating costs only, derived from optimisation

Figure 6-5 illustrates revenue factor 1 pit shell. Figure 6-6 shows the revenue factor 1 pit shell overlain with the prior open pit mining and underground workings.

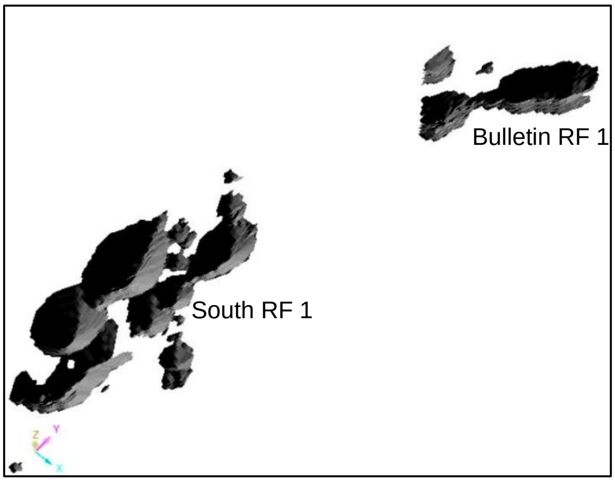


Figure 6-5: Selected Shells areas

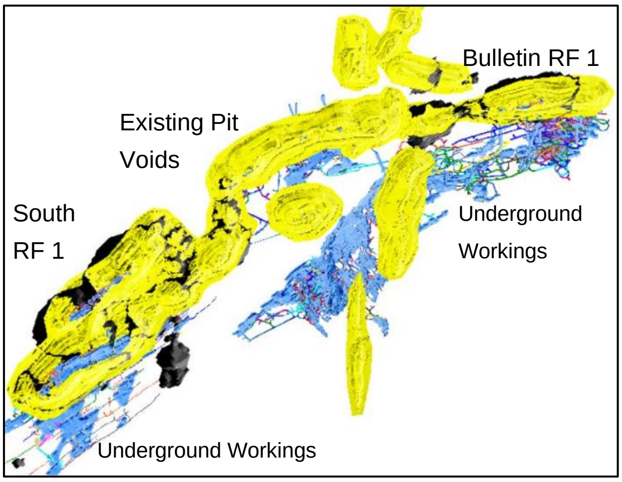


Figure 6-6: Selected Shells with mined out

It should be noted that the block model was constrained to two areas for potential exploitation. There is potential for other areas to be mined should an optimisation be run over the whole Wiluna deposit. Within the South area, only the Western Lode and East Lode South are designed for mining. This is discussed in the following section.

6.7 Pit Design

Pit designs were generated for the selected pit areas in alignment with the footprints of the optimal MI shell. The following design considerations were made for each pit area:

- Minimise pit footprint;

- Single lane access is required to maintain the minimal footprint, employ passing bays at strategic locations;

The design for South Pit area was separated by accessible areas due to the existing void. The high value quadrants were targeted (north section of West Lode and south section of East Lode). The southern section of West Lode has been designed and incorporated as a sensitivity to provide mining options for the various study targets.

Table 6-6: Geotechnical Parameters - Design

DESIGN PARAMETERS	Notes	Unit	
Ramp Width	Single lane	metre	15[3]
Ramp Width	Dual lane/Passing Bay	metre	21
Ramp Width (Fresh, bottom 30m)	No allowance for truck deviation	metre	12
Ramp Grade		Gradient	1:10
Batter Height (Ox)		metre	20
Batter Height (Trans)		metre	15
Berm Height (Fresh)		metre	20
Berm Width (Ox)		metre	5
Berm Width (Trans)		metre	5.5
Berm Width (Fresh)		metre	4
Batter Slope (Ox)		degrees	65
Batter Slope (Trans)		degrees	55
Batter Slope (Fresh)		degrees	70

The pits were designed utilising the existing slope parameters measured from the East Lode exposed pit walls. These parameters are supported for use in the PFS by the Mining One Geotechnical Team (Section 4).

A minimum mining width (bench width) of 20m was used in pit designs and the ramp widths are generally in line with industry standards in Western Australia for Caterpillar 777 or similar sized trucks.

Preliminary designs were generated around the identified pit areas to ascertain how suitable each pit was for including into the schedule. The pits designed and selected for inclusion into the PFS study schedule were Bulletin, West Lode North and East Lode South. West Lode South was designed as a sensitivity option.

6.7.1 Designs

The pit designs are presented in the figures below.

[3] 12m at base of pits

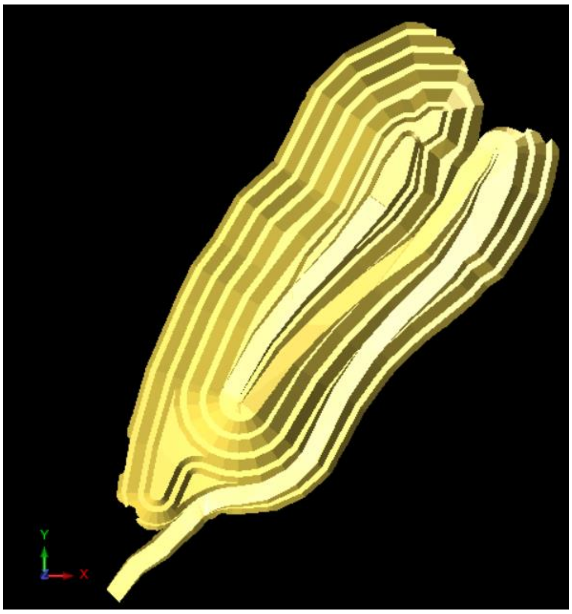
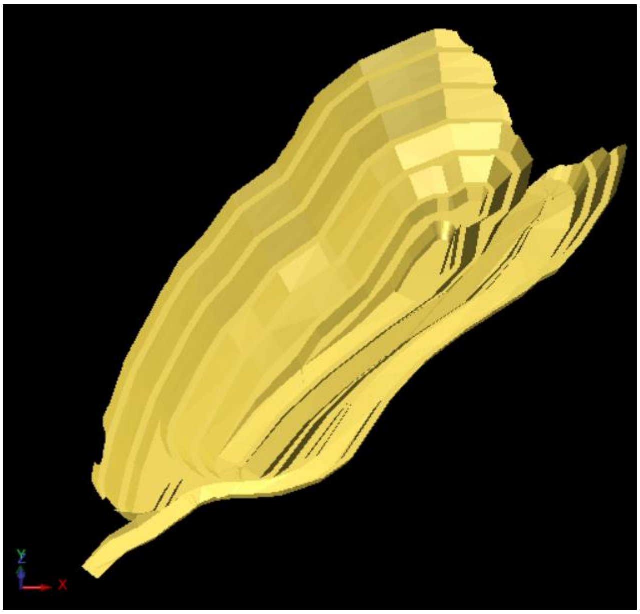
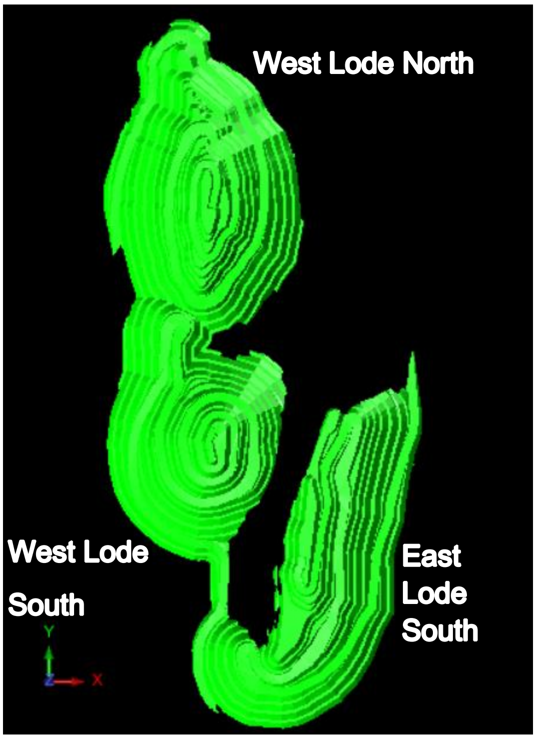



Figure 6-7: Bulletin Pit Design



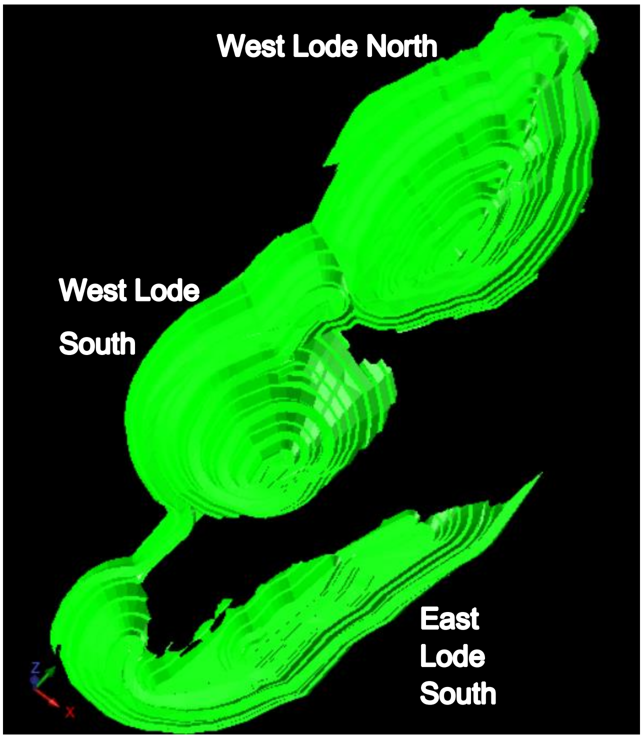


Figure 6-8: South Area Pit Designs

6.7.2 Design Reconciliation

The pit designs were compared to the Revenue Factor (RF) = 1 optimised pit shell. As the optimised pit shell consisted of many pit areas, the optimised shell was confined to the pit areas that were selected for mining, and further constrained to where the pit design extents (where the pit designs were truncated in comparison to the pit shells).

The comparisons are based on weathering and resource classifications (material classified as Measured, Indicated or Inferred and above designated cut off grades discussed in Section 5 has been included into the weathering sub classification), utilising the 'as built' topography provided by Wiluna Mining. The reconciliation data is presented in Table 6-7, below.

Table 6-7: Designs vs Optimised Shells

	Oxide Ore (Kt)	Transition Ore (Kt)	Fresh Ore (Kt)	Waste (Kt)	Total (Kt)
Designs	639	1,118	2,398	43,696	47,850
Whittle Shell MI	582	1,104	2,439	37,279	41,402
Difference	110%	101%	98%	117%	116%

The designs are shown in comparison with the Whittle shells in Figure 6-9, below.

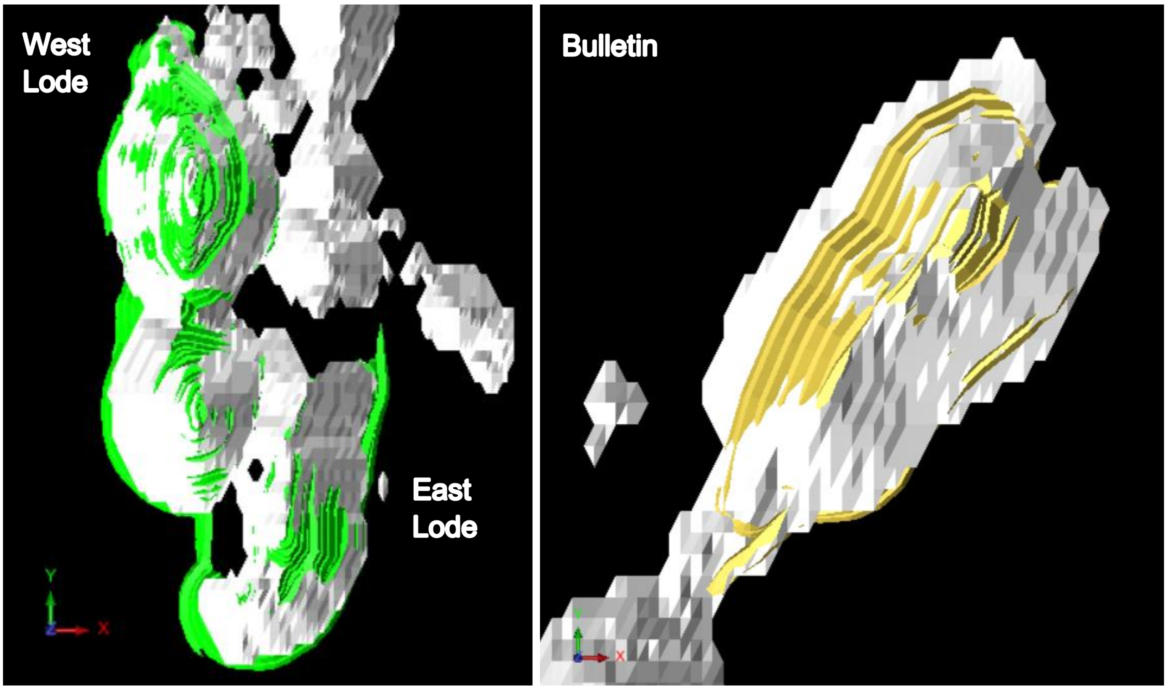


Figure 6-9: Wiluna Design vs Optimisation Comparison

6.8 Dump and Stockpile Design

6.8.1 Waste Dumps

Conceptual waste rock dumps for the Wiluna pits were designed as part of this study.

The waste rock dumps were designed to meet the following criteria:

(c) Locally adjacent to pit being mined (where possible)

(d) Avoid sterilisation of potential future pits

(e) Meet height restrictions for the Civil Aviation and Safety Authority due to the proximity of the Wiluna Airport and the 2019 Obstacle Limitation Surface (OLS) by Aerodrome Management Services (AMS) in 2019.

(f) Meet ground control management in Western Australian mining operations - guideline (DMIRS, 2019).

(g) Accommodate rehandled waste materials

(h) A swell factor of 30% was included in the volume calculations for dump capacity.

(i) Waste rock design parameters:

- Berm width – 5m
- Batter angle – 36°
- Batter height – 20m

The conceptual waste rock dump designs have a maximum elevation of 1545 mRL in local mine grid co-ordinates (545 mRL in GDA94 MGA Zone 51 projection) or 2.5m lower than the 2019 OLS of 547.5mRL.

Waste rock dumps were designed to the west of West Lode and Bulletin pits and are presented in Figure 6-10.

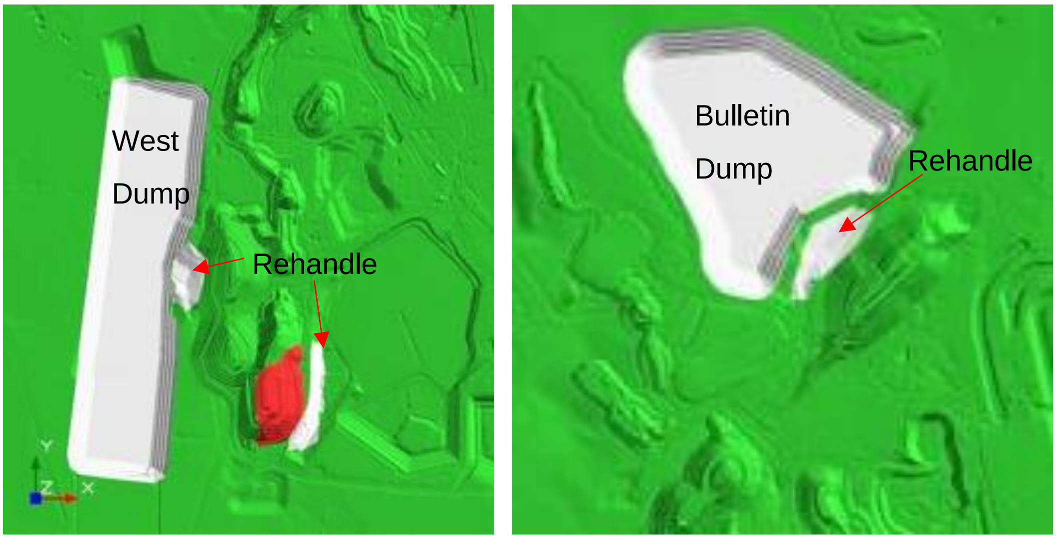


Figure 6-10: Wiluna Waste dump locations

The designed waste dumps have the following capacity.

- Bulletin Dump – 6M m^3
- West Dump - 23.3M m^3

The waste and rehandle volumes (ex-pit and rehandled from in-situ waste dumps) are presented in Table 6-8, below.

Table 6-8: Waste Material Volume

	Material Volume (M BCM)			
	Dump Rehandle	Waste Material	Waste + Swell[4]	Total Waste
Bulletin	0.25	**1.9**	**2.47**	2.72
West Lode (incl. South)	0.39	**13.7**	**17.81**	18.06
East Lode[5]	0.34	**3.6**	**4.68**	4.93

Dump Rehandle limits (Figure 6-10) are based on a preliminary FoS =1.5, which is based on the material properties from the 2018 geotechnical assessment for the Free Milling Project (Section 4.5.1). The FoS was used to design preliminary safety bund distances between the pit crest and the toe of the proposed waste rock dumps. The resultant dump toe lines require material inside the FoS=1.5 area to be removed from the existing waste rock dumps to ensure adherence to the long term design criteria. These dump toe lines are calculated with the best available information at the time of this PFS study and will require optimisation in the FS.

In Section 4.5.1, back-analysis of current slopes and then forward analysis of the East lode PFS design indicated an FOS>2.12, potentially eliminating the need to remove (rehandle) the dump material. This process will need to be repeated for FS or after additional geotechnical drilling and laboratory testing is completed to optimise the pit slope designs and long term dump limits.

6.8.2 Long Term Stockpile and Run of Mine (ROM)

The long-term stockpile capacity is based on the approximate footprint of the existing dump leach area east of the ROM and north of TSF-C. Indicative long term stockpile capacity is based on a footprint area of ~93,905m^2 with a bench height of 10m. An estimated density of 2 provided a potential stockpile capacity of 1.9Mt, suitable for PFS mine schedule stockpiling requirements (Section 6.10.5).

[4] 30% Swell factor used

[5] Rehandled material from the existing eastern waste dump is proposed as base material for stockpile and associated works to the ROM and crusher. Excess is to be hauled to Bulletin dump.

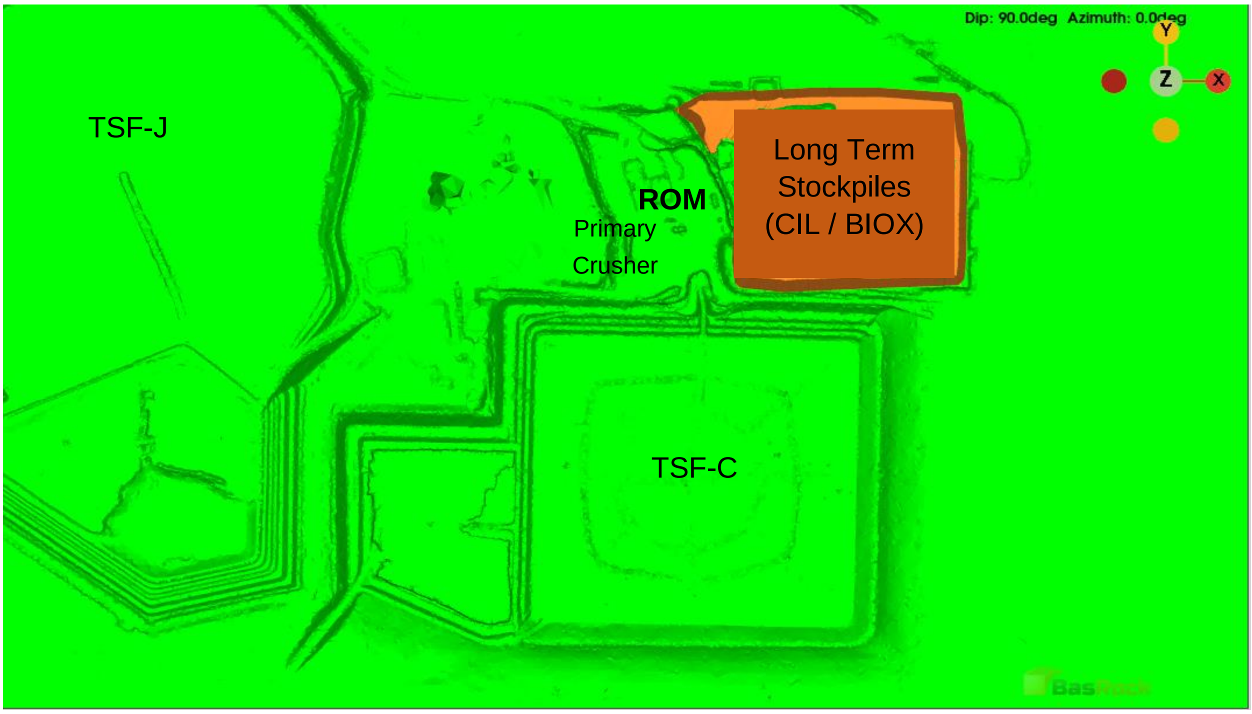


Figure 6-11: Wiluna Long Term Stockpile & ROM locations

6.9 Dilution Modelling

Preliminary dilution modelling for the selected pits was performed to understand the impact of conventional open pit mining on the reef like nature of the deposit. The modelling work did not incorporate dilution that may occur due to blasting loss into underground voids. The modelling aims to provide an indicative estimate of the amount of dilution that can be expected at each mining location, as well as provide guidance towards the dilution and ore loss figures that are to be used in the cash flow modelling.

All optimisations and modelling to date has modelled based on a blanket ore loss and dilution factors of 5% (95% ore recovery and 5% dilution added to block size). Mining One will model potential dilution in the proposed mining areas, and ascertain the direct impact of the dilution on the NPV of the project.

Two dilution areas were developed; the Bulletin area and the South area. Mining One used the following files for the dilution modelling:

- Resource Block Model, generated by Mining One (wil_m1_jun23_bm.mdl)
- Designed pits:
    - (bullietin_v5tr.dtm, west_lode_v8atr.dtm, wiluna_south_east_v5a_clippedtr.dtm)
- As Built Topography (03asbuilt_local.dtm)
- Final Mined Surface Topography (02total_cut_local.dtm)
- Reconciliation data (CKS_Bench_Summary_Master.xlsm and HJS_Bench_Summary_Master.xlsm)

For the Wiluna deposits, the following SMU size was investigated:

Table 6-9: Selective Mining Unit sizes

	X Direction (m)	Y Direction (m)	Z Direction (m)
SMU Selected	3	5	2.5

A cut off grade (COG) of 0.6 g/t Au was used for the dilution modelling.

In order to calculate the dilution and recovery figures, the following formulas were used for both the modelling and the reconciliations.

$$Dilution = \frac{Undiluted\ Au}{Diluted\ Au}$$

$$Recovery = \frac{Diluted\ Tonnes}{Undiluted\ Tonnes\ \times Dilution}$$

$$Ore\ Loss = 1 - Recovery$$

Dilution modelling was performed without orthogonal constraints, in a trapezoidal fashion utilising the SMU's (similar to how grade control ore blocks may be marked up, rather than fixed rectangles). This allowed a relative level of freedom with respect to mining shapes – within the general limitations of the SMU parameters. The reported results are from within the pit designs[6].

The dilution results are as follows:

Table 6-10: Dilution Results

	Dilution* (%)	Recovery (%)	Ore Loss (%)
Bulletin	119	100	0
East Lode South	111	98	2
West Lode	122	98	2

*block size plus dilution

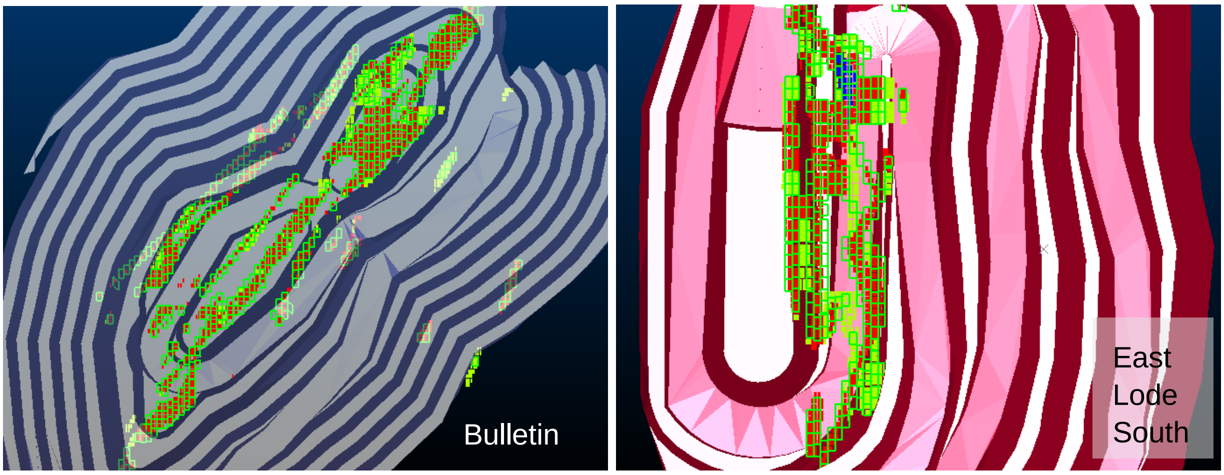


Figure 6-12: Bulletin Pit base[7] and East Lode South base with SMU's around ore blocks

[6] The pit designs used to report the dilution are based on an earlier iteration of the pit designs. The differences in the pits are incremental and waste related, and not material to the dilution and ore loss numbers.

[7]

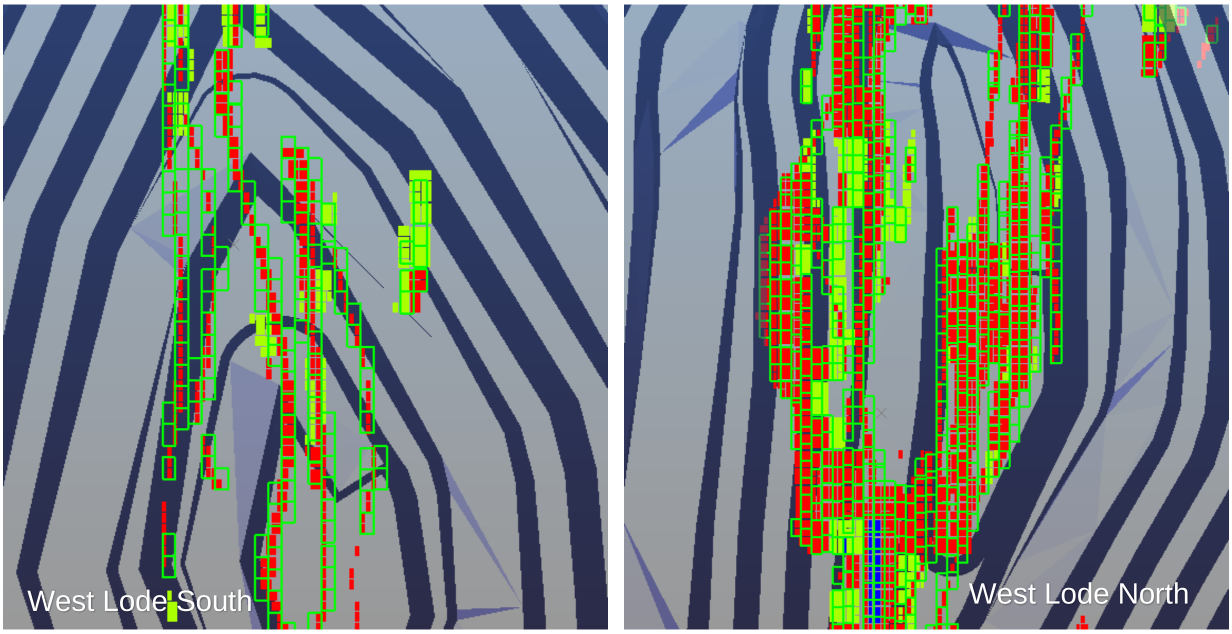


Figure 6-13: West Lode South and North Pit base with SMU's around ore blocks

Site reconciliation data was obtained to ensure the modelling work fell within acceptable parameters. The resource model from which the historical reconciliations were calculated utilised Ordinary Kriging for the geostatistical estimation.

From the reconciliation data, the reported grade control results were compared to the claimed mine production. Mining One's dilution modelling does not explicitly include underground voids, however the resource model does consider the impact of underground voids, therefore implicitly incorporates voids in the dilution estimate. The dilution and ore loss figures are shown below.

Table 6-11: Historical Reconciliation Results

Pit	Dilution* (%)	Recovery (%)	Ore Loss (%)
Happy Jack South	116	72	28

*block size plus dilution

The reconciliation figures show there was dilution and significant ore loss issues at the Wiluna project. As the dilution modelling shows relatively low ore losses and similar dilution figures, it is recommended that blast movement monitoring be included in grade control processes. An allowance for this has been included in the mining cost model estimate.

Wiluna was first mined from open pit and underground from the early 1900's. The backfill and mined open pits are clearly visible from aerial photography and from surveys, and are accounted for in the material at risk assessment. The historical underground workings are generally well understood and mapped out, however, due to the extended period of time which the Wiluna area has been exploited, some underground voids may be encountered.

It is understood that not all voids have been backfilled. This presents an element of risk for ore loss when blasting.

Based on the outcomes of the dilution modelling, an updated global dilution figure of 115% (block size plus 15% dilution) and a conservative ore loss figure of 5% will be adopted for scheduling and cashflow modelling.

6.10 Mine Schedules

Mining schedule options were generated to test the impact of the order of mining each pit, and to gain insight on the value proposition of each schedule. This evaluation provides an indication of the impact of the order of mining on the NPV, the peak drawdown and the capability to meet the milling requirements for this study.

The mine production schedules were developed using MineSched software. A basic haul simulation was included in the scheduling process to ascertain approximate fleet requirements for the detailed cost modelling component of this study. The dump simulation was also created in MineSched and provides an indicative waste dumping schedule.

For simplicity, the drill and blast, grade control and mining around void areas were not modelled as separate activities in the mining schedules but were considered in the reduction of excavator operating rates. It is assumed that the constraints applied to the schedule encompasses mining activities expected to occur at Wiluna.

The mine and mill production schedules for each case are presented in Appendix E2.

6.10.1 Mine Schedule Parameters Overview

Some scheduling parameters are consistent throughout the study which allows the easy comparison between schedules. The main schedule parameters used in the study are summarised in the following sections.

6.10.2 Cut Off Grades

The ore bins are based on a process plant throughput rate of 3.2Mtpa consisting of 1.7Mtpa oxide, 1.3Mtpa transitional or 750 ktpa fresh material and with the balance from Wiltails and are summarised in Table 6-12.

Table 6-12: Ore Bins

Ore Bin	Au (g/t) - From	Au (g/t) - To
Waste Oxide	0.00	0.35
Waste Transitional	0.00	0.42
Waste Fresh	0.00	0.87
Oxide	0.35	999
Transitional	0.42	999
Reef Sulphide	0.42	999
Refractory Sulphide	0.87	999

6.10.3 Mining Rates

Industry standard time usages were adopted to calculate the equipment production times, with benchmarking applied to the customise for this study. These standard time usages are incorporated to ascertain the appropriate equipment hours for the mine schedule and cost estimate.

Job efficiency, productivity and SMU factors were applied to the mine schedule and cost estimates. The parameters used in this study are outlined in Table 6-13, below.

Table 6-13: Schedule Time usage parameters

Parameters	Unit	Excavator
Calendar Time	day	365
Theoretical Prod.	wmt / Op. hour	1620
Job Efficiency Factor	%	83
Operating Productivity	wmt / Op. hour	1,344
SMU factor	%	92.8%
Productivity (Engine hour)	wmt / SMU	1,248
Production hours	Hrs/month	518

Following the current practice, two shifts per day were assumed for the mining schedule. Each shift is approximately 10 hours.

The mining rates for Cat 6015B considered in this study were benchmarked based on projects in mining similar material in a similar area. The intent was to ensure the mining rate is achievable and practical for the operation.

For this study, the excavators are matched with CAT 777G trucks or similar. The truck payloads assumed for Cat 777s and number of passes required to fill a truck based on the Cat 6015B pairing is outlined in Table 6-14, below.

Table 6-14: Truck Payload Parameters

Parameters	Unit	Fresh	Transition	Oxide
Average Dry Density	t/BCM	2.8	2.5	2.3
Swell factor	%	35%	30%	25%
Moisture	%	2.0%	5.0%	5.0%
Wet Density	t/BCM	2.9	2.6	2.4
Assumed Bucket Capacity	Wet Tonnes	14.6	14.6	14.6
	BCM	5.1	5.5	6.0
Cat 777 Truck Capacity	Wet Tonnes	91	91	91
	BCM	40.1	41.7	43.3
No. of Passes to Fill Cat 777	#	6.24	6.24	6.24

Table 6-15, below summarises the assumed excavator mining rates adopted to generate the mining schedules for this study. Due to the scheduling method, the transitional mining rate was applied to all material. It is worth noting that the mining rate assumed is the 'apparent dig rate' that includes the production time not spent on loading (non-production time). An additional limiting factor or 60% was applied to the base of each pit where the bench area was less than 100kBCM of material. This is to account for operational delays resulting from working in confined spaces.

Table 6-15: Apparent Excavator Dig Rates

Material Type	Unit	Cat 6015B
Oxide	BCM/d	8,730
Transitional	BCM/d	9,480
Primary	BCM/d	10,300
Primary in base of pits	BCM/d	5,700

6.10.4 Truck Haulage

A basic haul analysis was managed using MineSched's Material flow module. The software utilises a set of assumed input parameters such as rolling resistance, truck configuration, speed limit, stop sign, estimated loading time, dumping time, anticipated delay time etc. to generate cycle time on predefined haul routes. MineSched's Material flow module models the movement of each block according to its predetermined destination by the nominated haul route.

The haul route used to generate cycle time was predefined. Generally, the routes are determined from the centroid of each block / solid to the centroid of its pre-determined destination(s) i.e.: ROM stockpile, Bulletin/West Dump. It is typically modelled as simple strings / lines which consists of segments with various lengths and gradients. The modelled travel time based on the predefined haul route was then combined with estimated loading time, dumping time, and anticipated delay time to produce the modelled cycle time.

The speed and rolling resistance parameters are based on Caterpillar 777G rimpull tables.

6.10.5 Schedule Cases

Several schedule cases were investigated as part of this study. The cases are presented in Table 6-16, below.

Table 6-16: Schedule Cases

Case	Bulletin Included	West Lode North Included	West Lode South Included	East Lode Included	Peak No. Excavators	Note
Reserve	✓	✓		✓	3	No Inferred Material
Sensitivity 1		✓	✓	✓	3	No Inferred Material
Sensitivity 2		✓	✓		2	No Inferred Material
Sensitivity 3	✓	✓	✓	✓	4	No Inferred Material
Production Target	✓	✓	✓	✓	4	Inferred material included

For all cases, the mining schedule excludes the rehandle material from the waste dumps. The truck numbers reported in the schedules below are restricted to expit truck numbers. The schedules include dilution of 115% (block size plus 15% dilution) and an ore loss of 5%. At the time of scheduling and exporting of pit physicals, passing bays were designed in West Lode North only. Passing bays were incorporated into the designs for the PFS report which may increase the waste movement incrementally.

6.10.5.1 Reserve Case

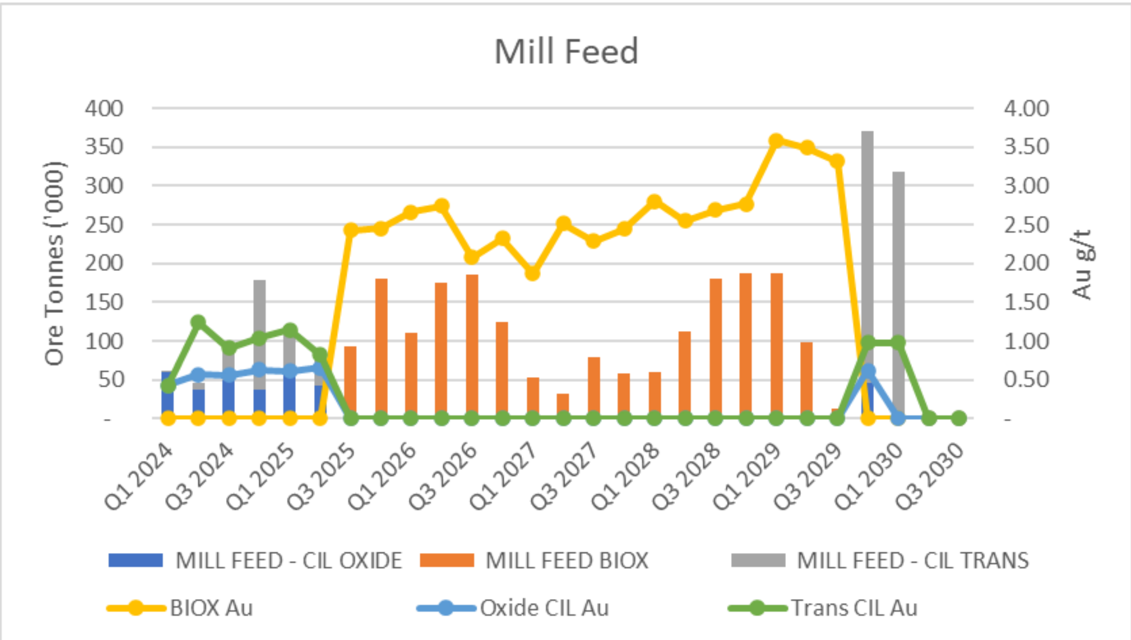


Figure 6-14: Reserve Mill Feed

In the reserve case, 4 years of continuous BIOX feed is possible with a BIOX plant delay of 18 months. Supplementary feed is required from quarter 1 2027 to meet milling capacity. This feed deficit remains for 18 months, after which the open pit feed has the capacity to fully meet mill feed. During the initial 18 months of mining, the CIL plant is fed with oxide, transitional and any free milling sulphide material which is mined. The CIL plant is also supplemented with Wiltails material. A total BIOX mill feed of 2.3Mt at an average grade of 2.35 g/t Au is mined from Bulletin, West Lode north and East Lode pits. Any stockpiled oxide and transitional ore is fed into the mill once the BIOX material has been depleted.

Due to the nature of the design (single lane access), only one excavator was allowed in each pit. There is potential to strip waste faster with dual lane access in West Lode, specifically West Lode North.

The mill feed presented in this schedule does not incorporate Wiltails or underground material. For this case, a 50% ramp up for the BIOX plant was incorporated into the schedule.

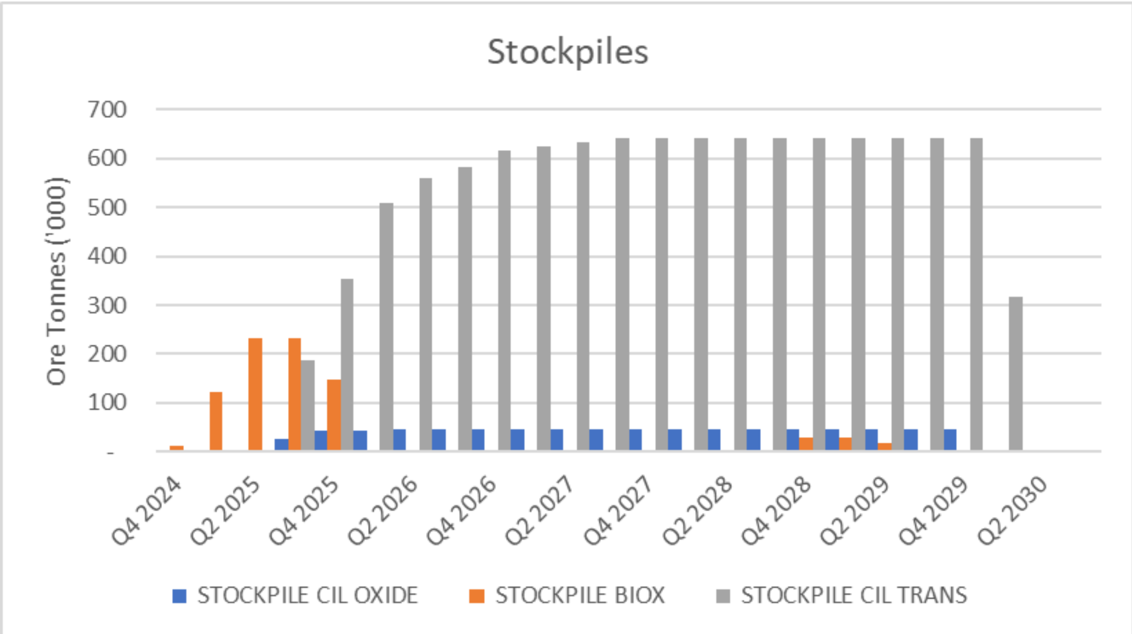


Figure 6-15: Reserve Stockpiles

Stockpiles have been generated for each material type according to milling specifications. As such, any free milling sulphides have been stockpiled into the transitional stockpiles. The following peak stockpiles are generated during the life of the mines:

- Oxide – ~46Kt
- Transitional - ~643Kt
- Fresh - ~232Kt

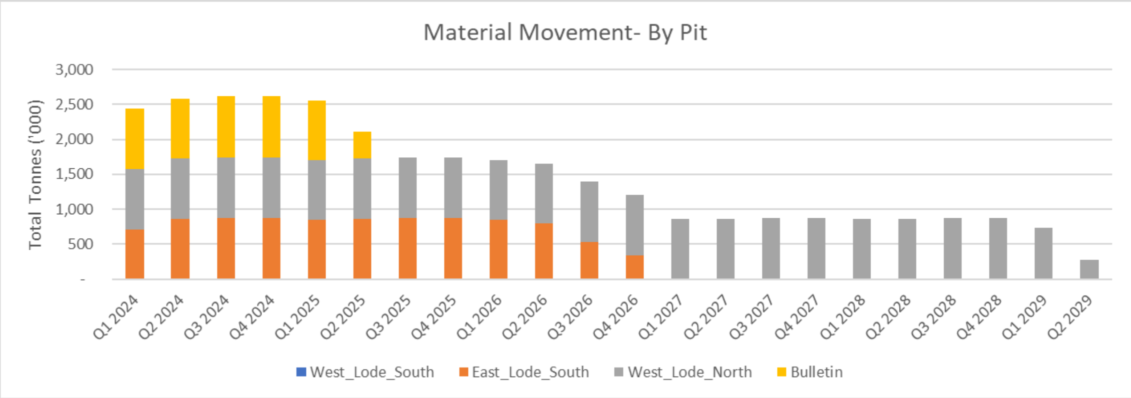


Figure 6-16: Reserve material movement by pit

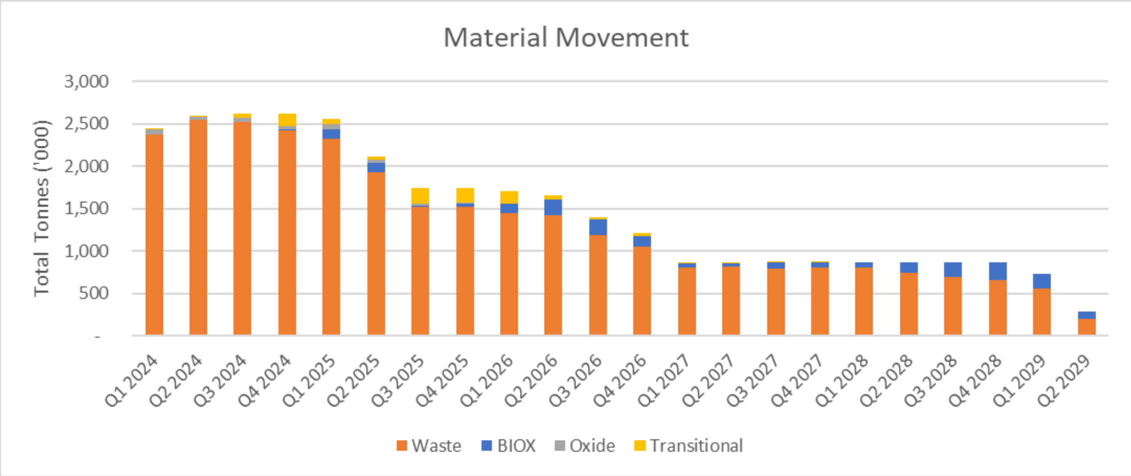


Figure 6-17: Reserve material movement by material type

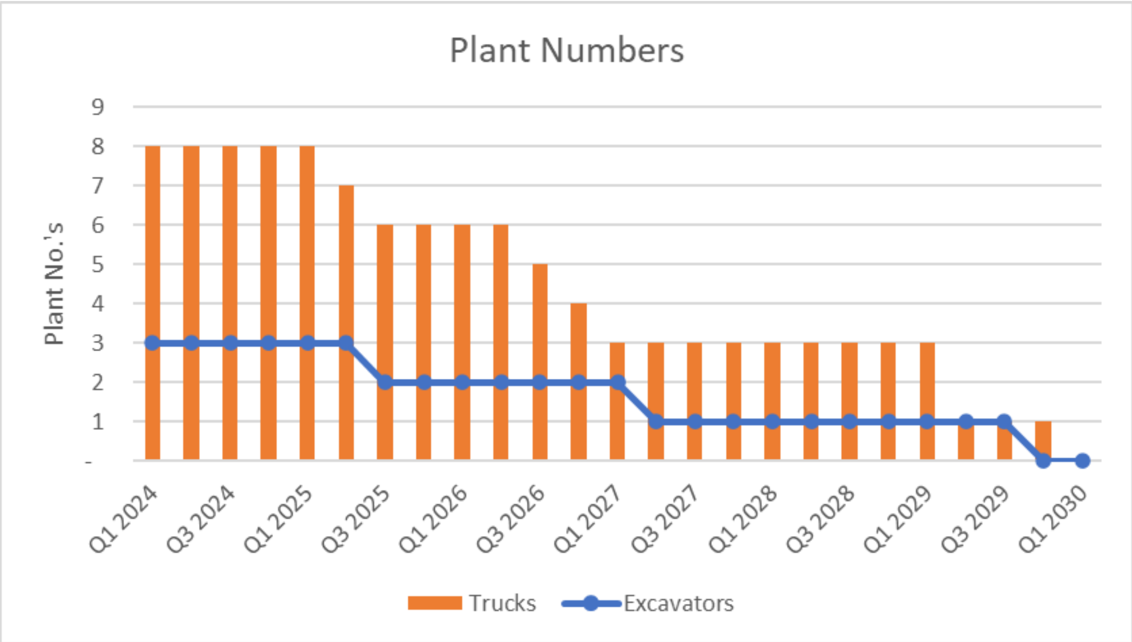


Figure 6-18: Reserve equipment numbers

6.10.5.2 Sensitivity 1, MI

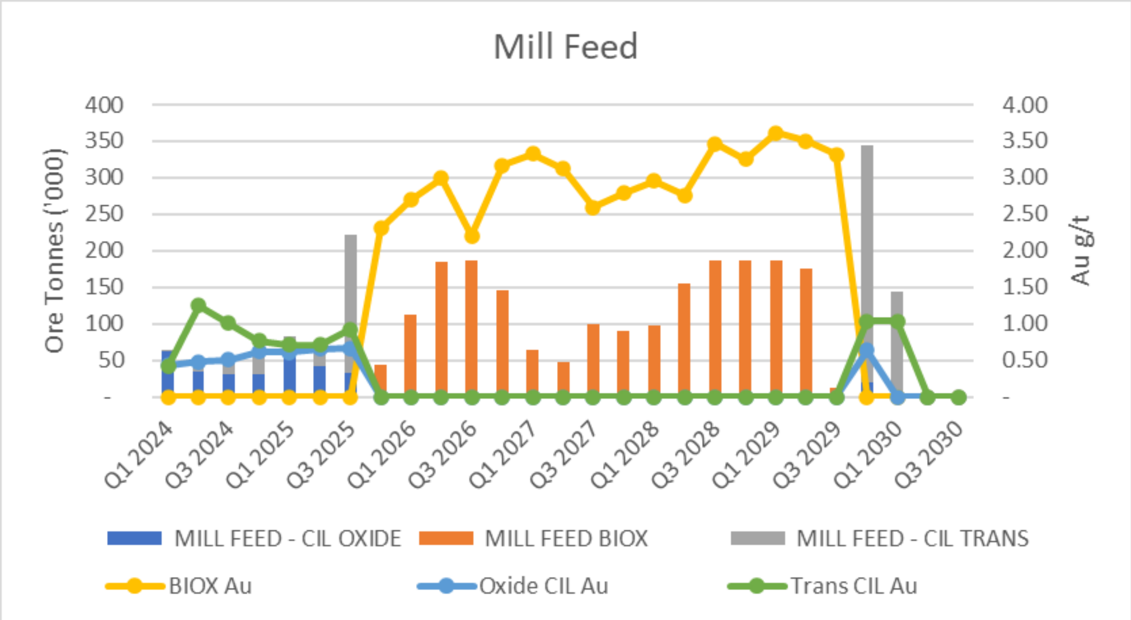


Figure 6-19: Sensitivity 1 Mill Feed

As with the Reserve case, Sensitivity 1, generates 4 years of continuous BIOX feed with a BIOX plant delay of 18 months. Supplementary feed is required from quarter 1 2027 to meet milling capacity. This feed deficit remains for 18 months, after which the open pit feed has the capacity to fully meet mill feed until quarter 3, 2029. For the sensitivity 1 case the total BIOX feed was 2.3Mt at 2.69 g/t Au. The largest impact was the stockpiling requirements and tonnages of leacheate material available for processing prior to the commencement of the BIOX plant. Figure x below shows the stockpile requirements for this case. For this case, a 50% ramp up for the BIOX plant was incorporated into the schedule.

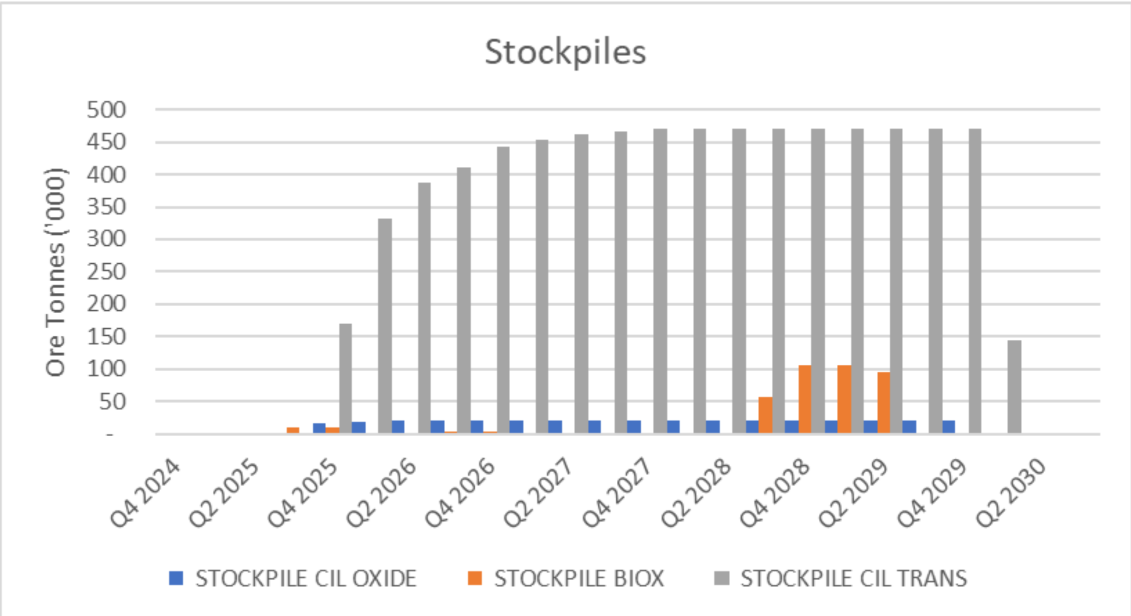


Figure 6-20: Sensitivity 1 Stockpiles

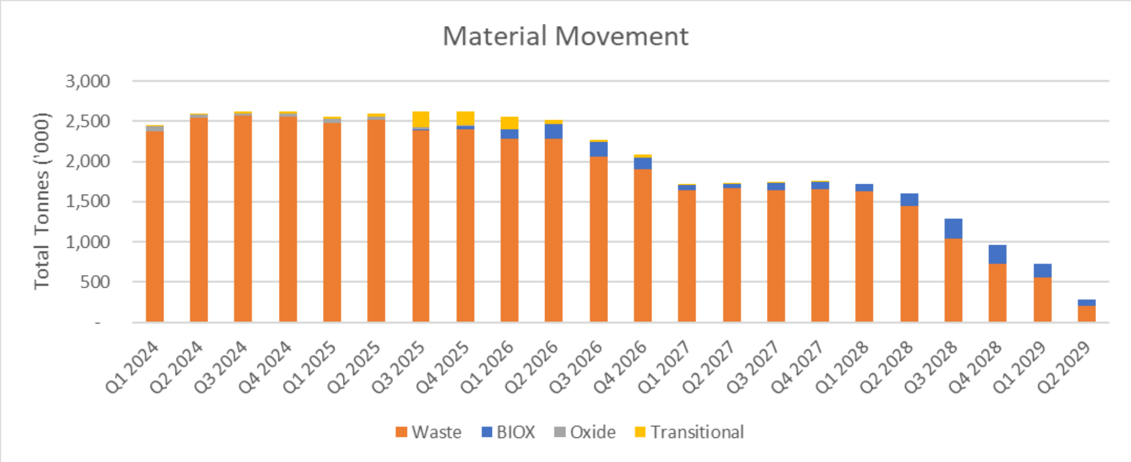


Figure 6-21: Sensitivity 1 material movement by material type

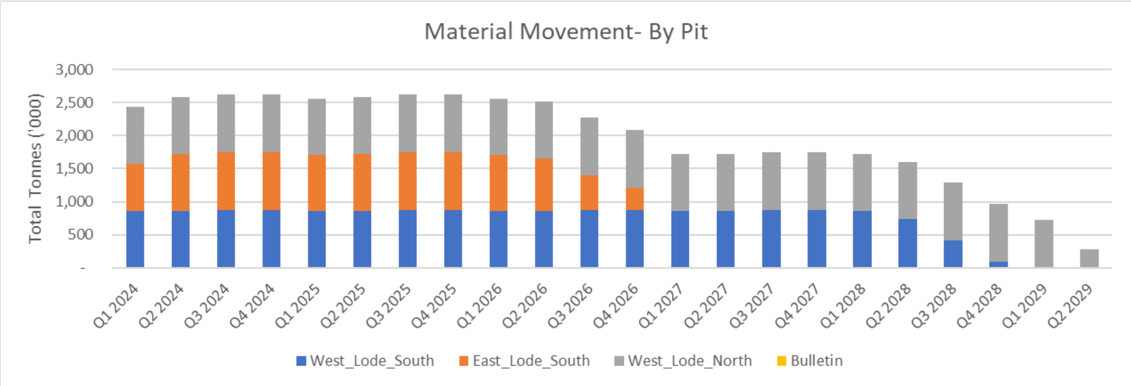


Figure 6-22: Sensitivity 1 material movement by pit

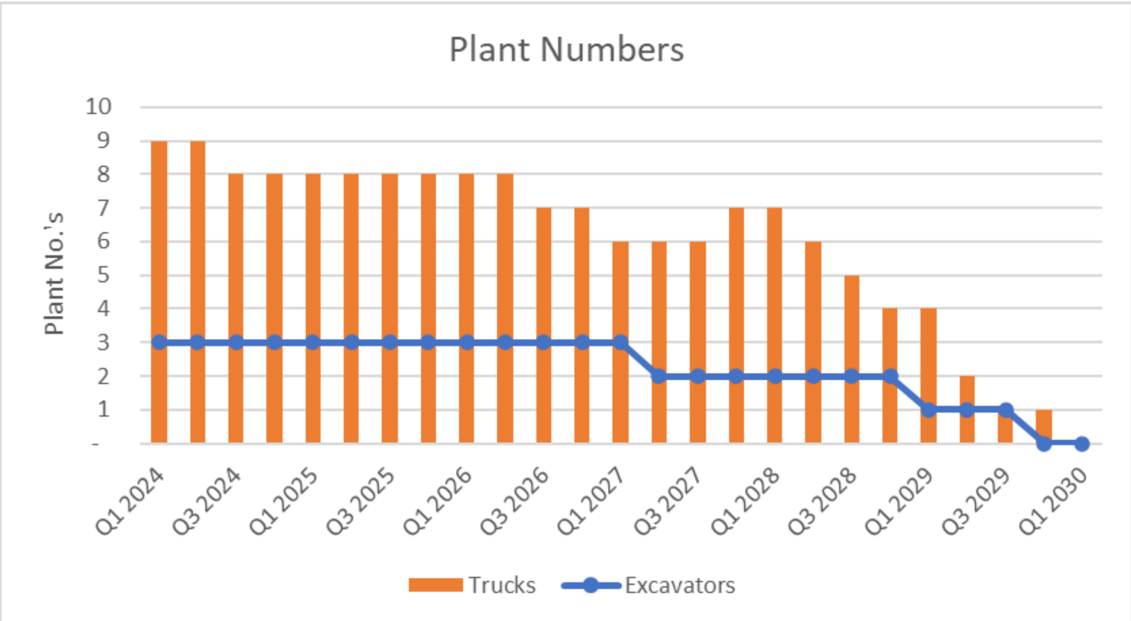


Figure 6-23: Sensitivity 1 equipment numbers

6.10.5.3 Sensitivity 2

Sensitivity 2 schedule only incorporates the West Lode. There is significant amount of stripping required to access the ore in west lode, and while sulphide material can be delivered to the mill after the initial 18 month delay, the mill requires supplementary feed until quarter 1 2028. Due to mining and scheduling, 3.5 years of mill feed is available, albeit without meeting mill requirements. High grade material is available for exploitation in West Lode South, however a large strip ratio is encountered Due to the volume of material available from the open pits, no ramp up was included in the milling schedule.

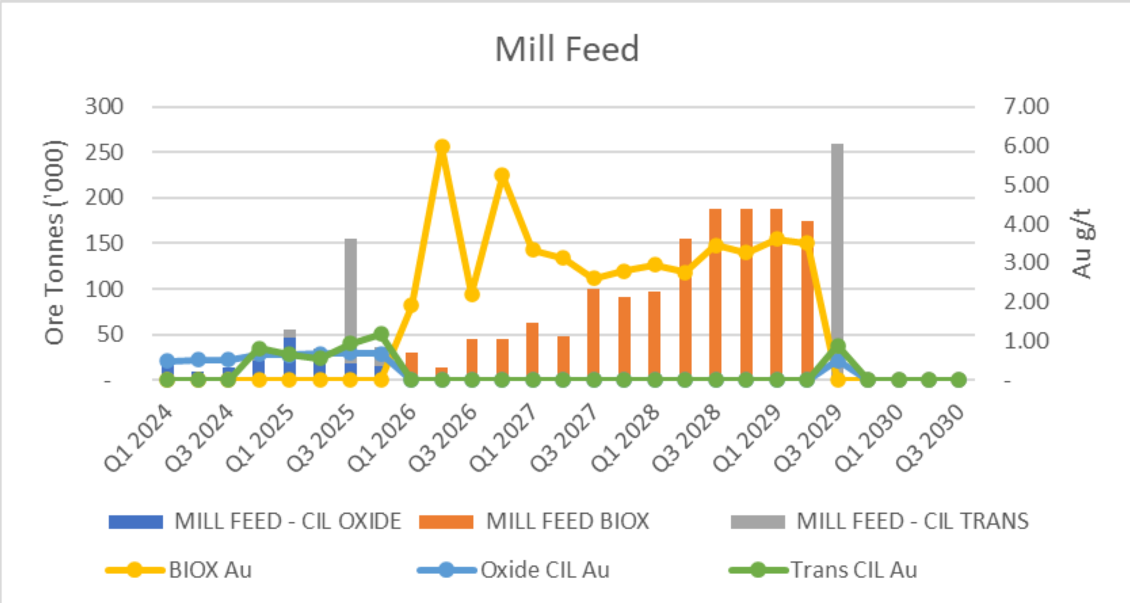


Figure 6-24: Sensitivity 2 Mill Feed

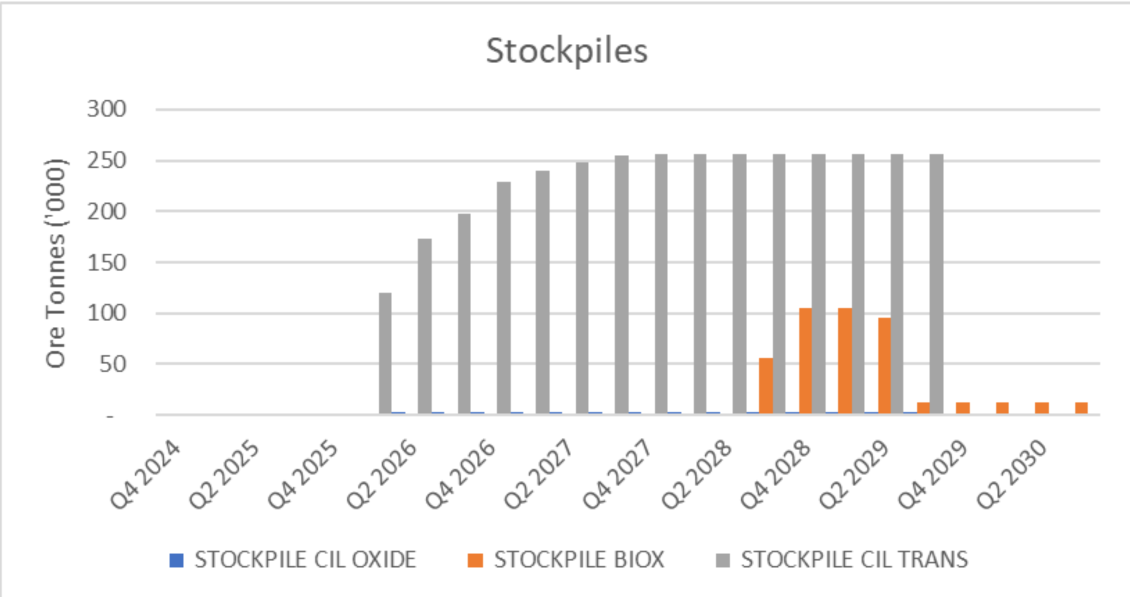


Figure 6-25: Sensitivity 2 Stockpiles

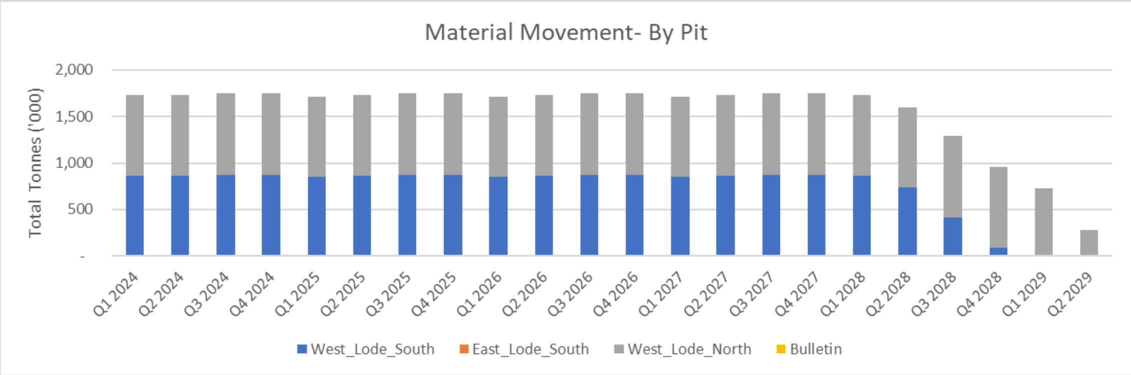


Figure 6-26: Sensitivity 2 material movement by pit

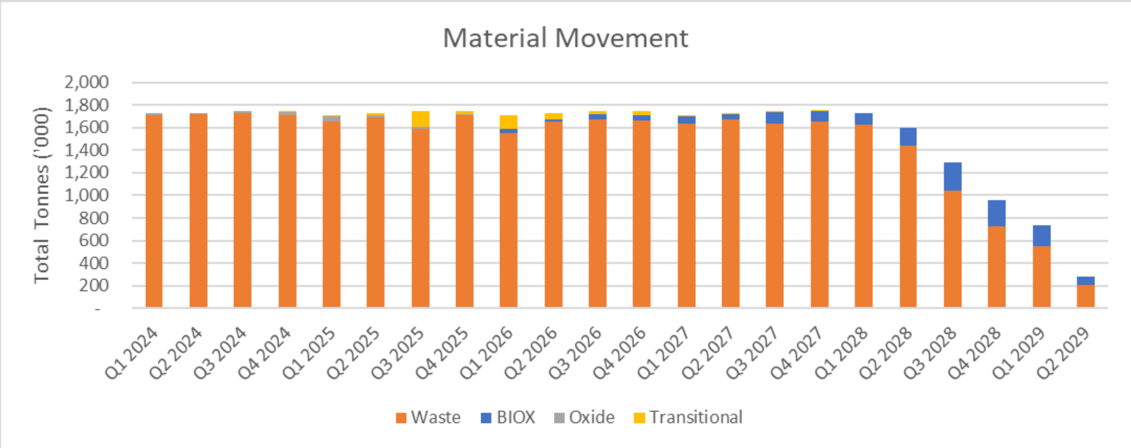


Figure 6-27: Sensitivity 2 material movement by material type

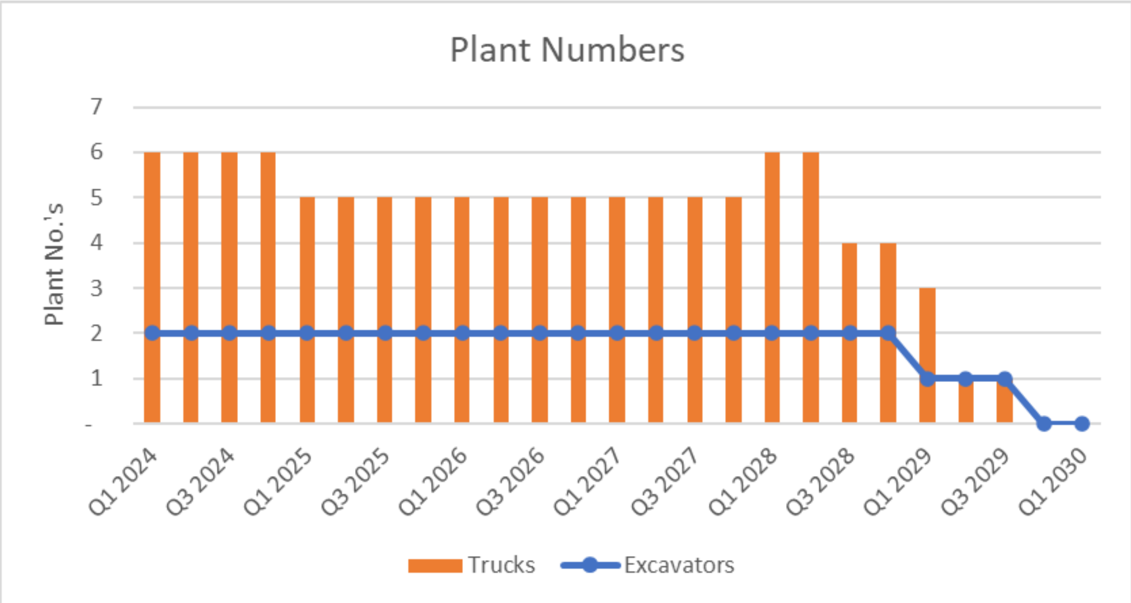


Figure 6-28: Sensitivity 2 equipment numbers

6.10.5.4 Sensitivity 3

Sensitivity 3 mines all 4 pits, providing a similar ore delivery profile as the Reserve case. There is an uplift in the average ore grade due to the high grade material from West Lode south. Supplementary mill feed material is required from quarter 1 2027 for 18 months, however the volume of supplementary material required is less than the reserve case. A 50% ramp up in the first quarter of BIOX plant operation has been applied for Sensitivity 3.

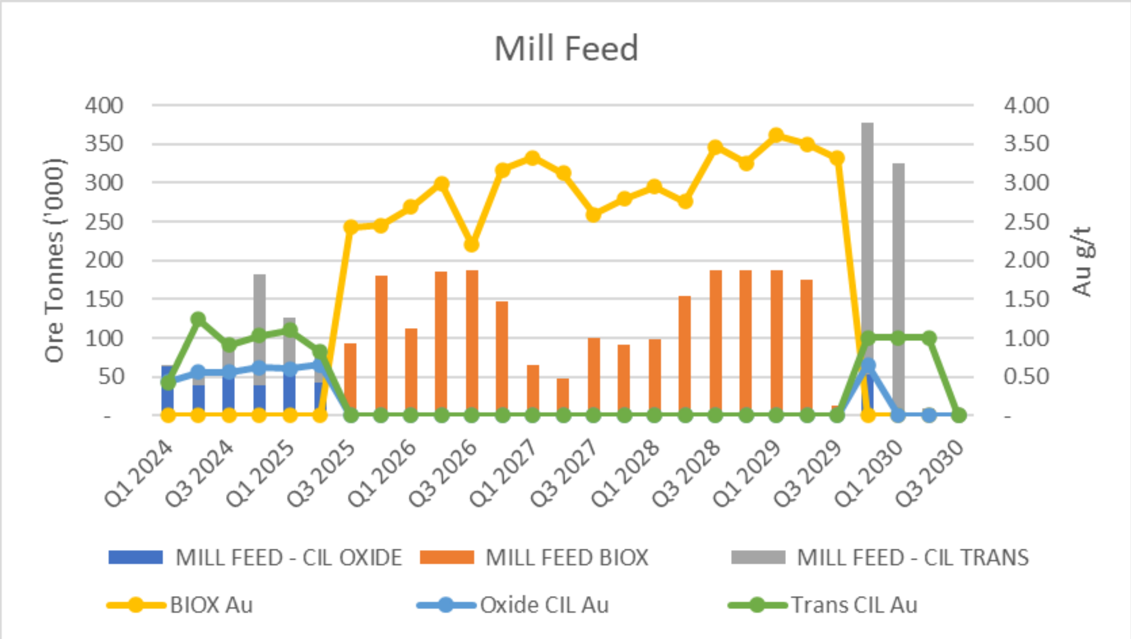


Figure 6-29: Sensitivity 3 Mill Feed

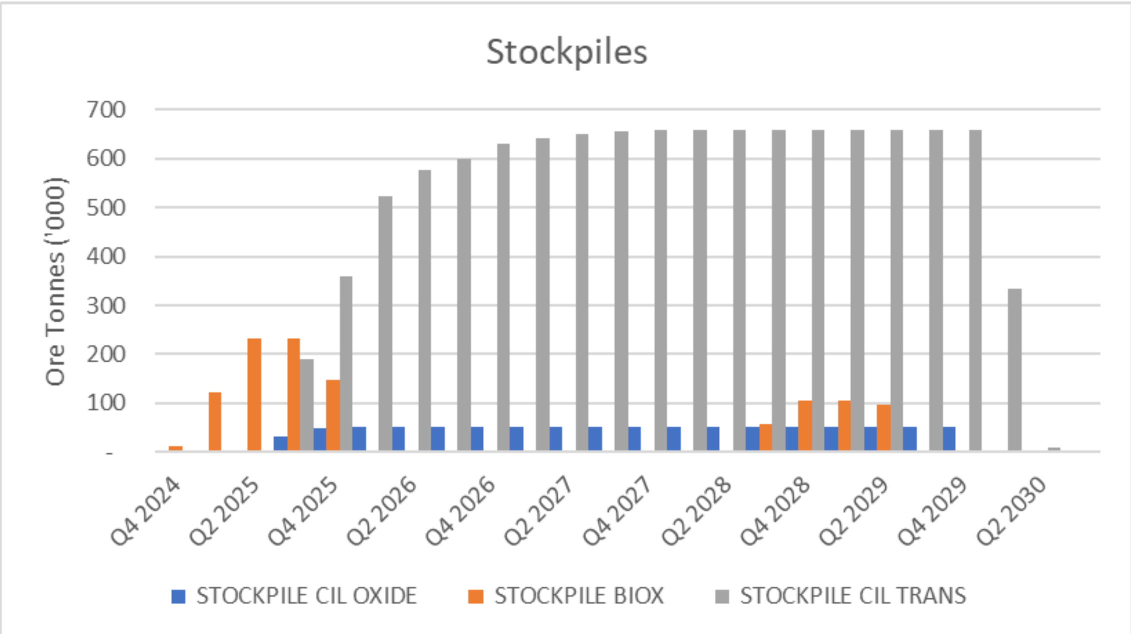


Figure 6-30: Sensitivity 3 Stockpiles

This schedule minimises oxide and transitional stockpiling space requirements.

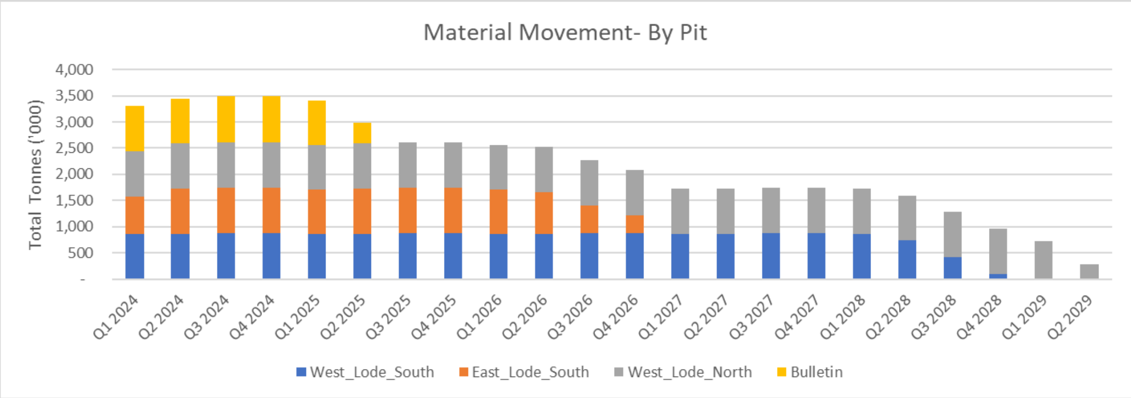


Figure 6-31: Sensitivity 3 material movement by pit

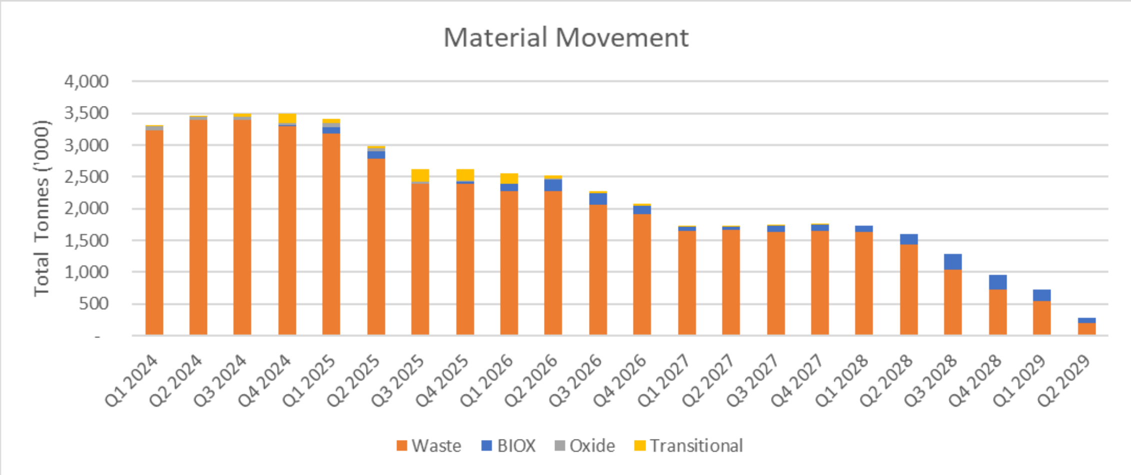


Figure 6-32: Sensitivity 3 material movement by material type

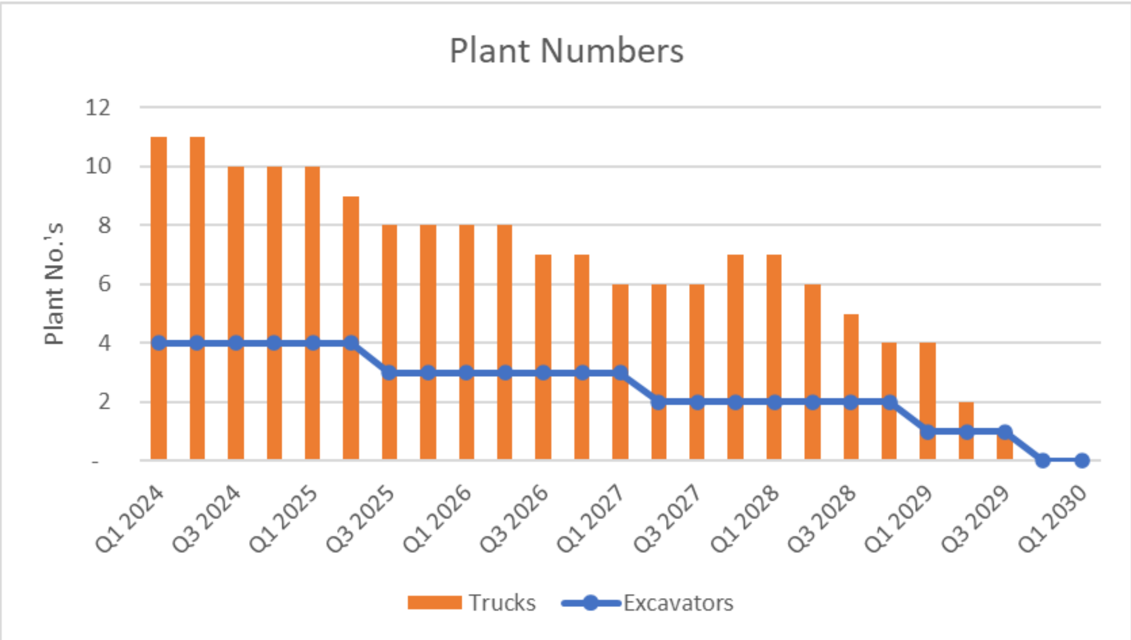


Figure 6-33: Sensitivity 3 equipment numbers

6.10.5.5 Production Target Case

The Production Target case duplicates Sensitivity 3 and includes any inferred material encountered in the pits. The main impact of this is that more ore material is available to feed into the CIL plant prior to commencing milling of sulphide material. Some supplementary mill feed material is required from quarter 1 2027 for 18 months, however the volume of material required is less than the Sensitivity 3 case. A 50% ramp up in the first quarter of BIOX plant operation has been applied to the Production Target case.

It should be noted that the Production Target case incorporates both TSF-K and TSF-L for tailings storage. TSF L has been studied to Scoping Level. The Ore Reserve case does not require TSF-L.

Table 6-17: Open Pit Production Target Physicals

	Oxide			Transitional			Fresh		
	Tonnes	**Au g/t**	**Oz Au**	**Tonnes**	**Au g/t**	**Oz Au**	**Tonnes**	**Au g/t**	**Oz Au**
2024	402,974	0.66	8,515	219,019	0.99	4,798	-	-	-
2025	114,940	0.62	2,300.76	120,101	0.98	2,610.82	281,250	2.43	11,554
2026	-	-	-	-	-	-	638,505	2.76	29,783
2027	-	-	-	-	-	-	307,906	2.88	14,999
2028	-	-	-	-	-	-	627,535	3.15	33,424
2029	58,142	0.66	1,236.88	325,000	0.99	7,117.68	374,742	3.55	22,534
2030	-	-	-	365,251	0.99	7,999	-	-	-

Table 6-18: Production Target Resource Breakdown

2024	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	190,022	0.53	3,244	196,753	1.01	6,406	10,778	2.05	709
Inferred	212,952	0.77	5,272	22,266	0.77	552	430	1.50	21
Total	402,974	0.66	8,516	219,019	0.99	6,958	11,208	2.03	730

2025	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	147,996	0.64	3,042	463,804	1.04	15,461	263,863	2.46	20,881
Inferred	21,705	0.63	442	30,940	0.70	699	9,786	1.99	628
Total	169,701	0.64	3,484	494,744	1.02	16,160	273,649	2.44	21,509

2026	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	3,354	0.50	53	273,317	0.95	8,336	632,759	2.75	55,847
Inferred	26	0.38	0	14,606	0.80	375	2,139	6.75	464
Total	3,380	0.49	54	287,923	0.94	8,711	634,898	2.76	56,311

2027	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	27,494	0.94	833	303,437	2.89	28,229
Inferred	-	-	-	192	0.43	3	4,469	1.89	272
Total	-	-	-	27,686	0.94	836	307,906	2.88	28,501

2028	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	-	-	-	732,607	3.18	74,888
Inferred	-	-	-	-	-	-	526	3.18	54
Total	-	-	-	-	-	-	733,133	3.18	74,941

2029	Oxide			Transitional			Fresh		
	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)	Tonnes (t)	Grade (g/t)	Ounces (Oz Au)
Indicated	-	-	-	-	-	-	269,144	3.63	31,391
Inferred	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	269,144	3.63	31,391

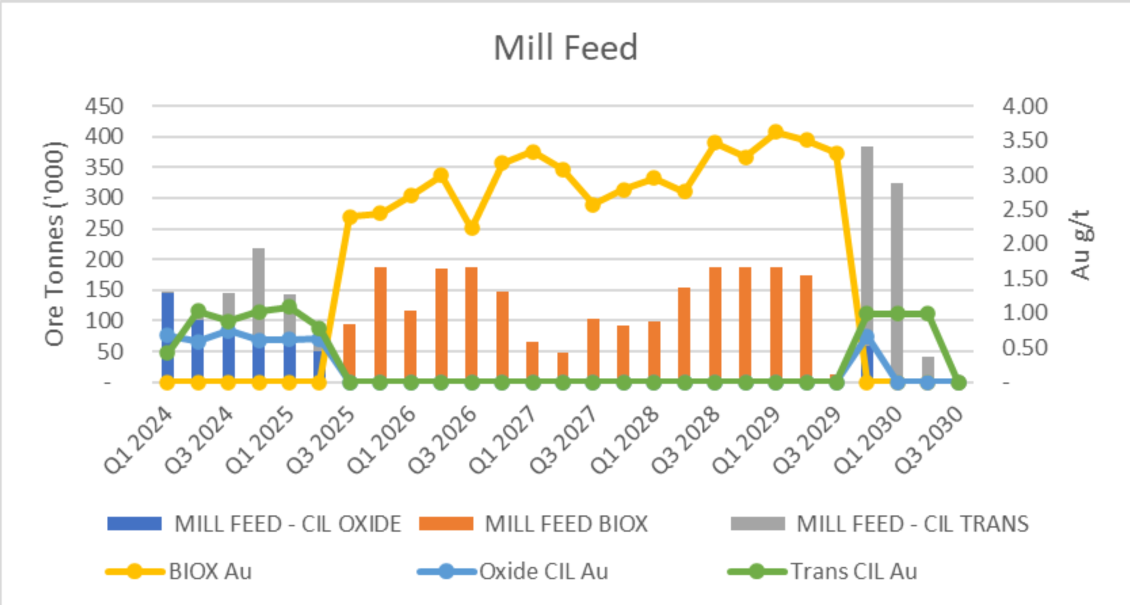


Figure 6-34: Production Target Mill Feed

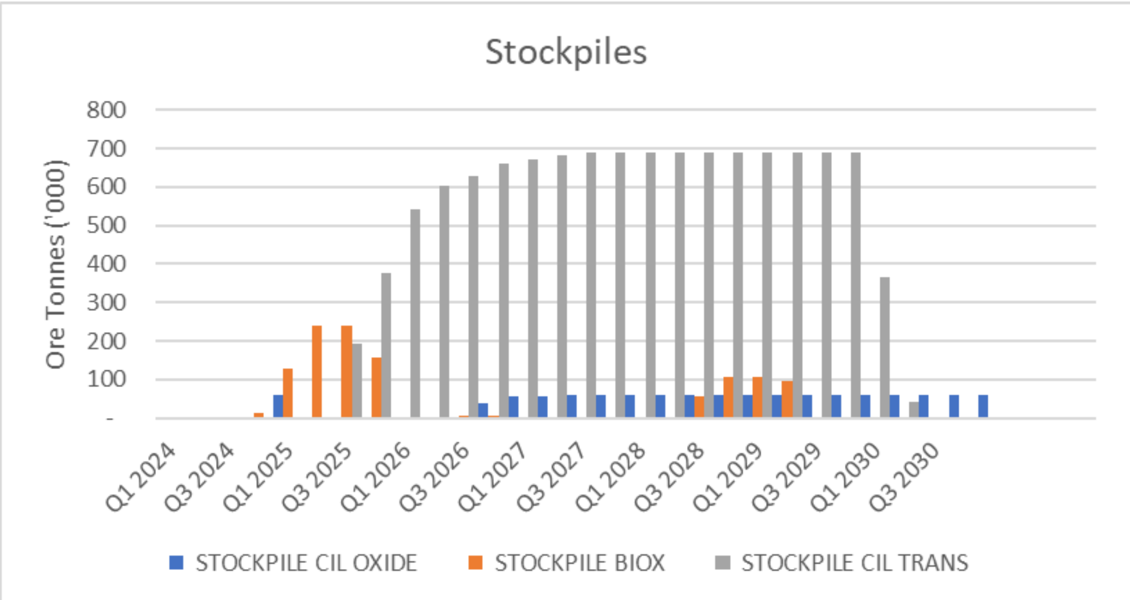


Figure 6-35: Production Target Stockpiles

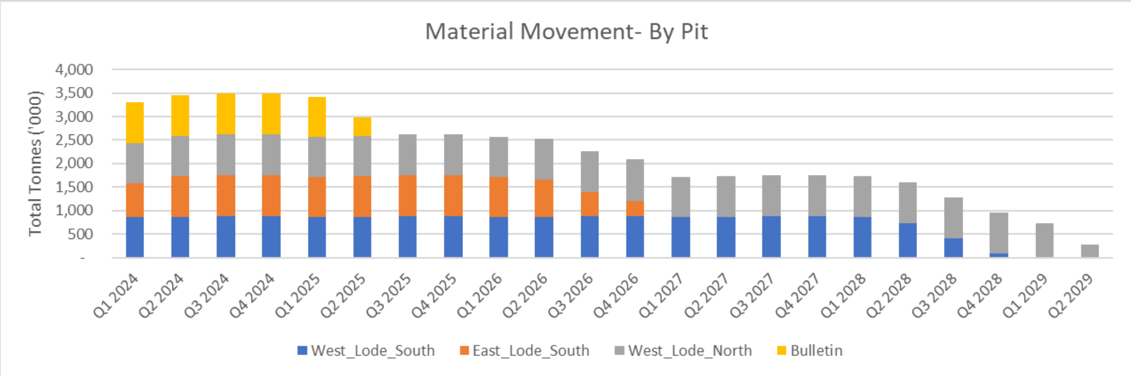


Figure 6-36: Production Target material movement by pit

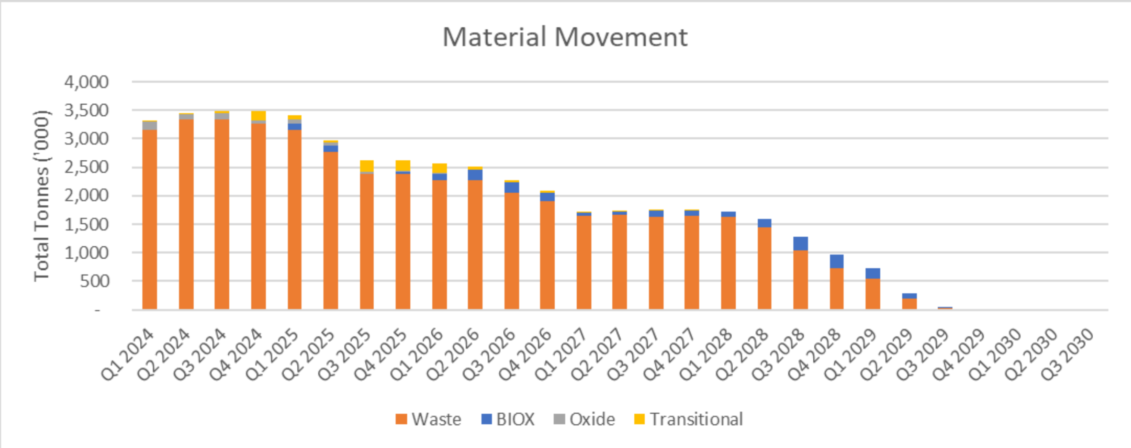


Figure 6-37: Production Target material movement by material type

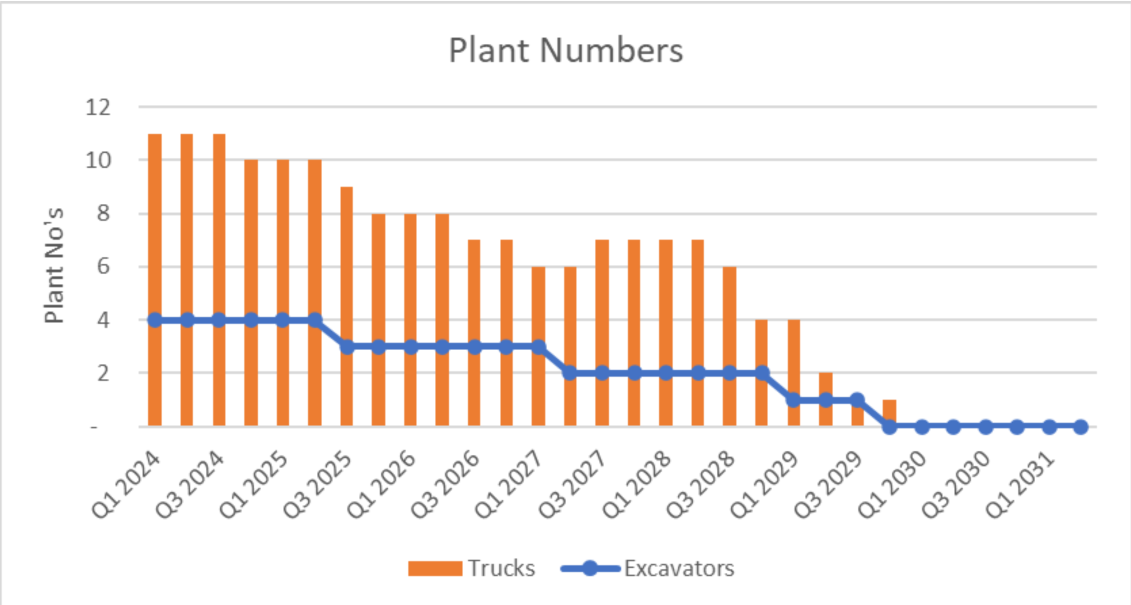


Figure 6-38: Production Target equipment numbers

6.11 Open Pit Mining Costs

For the cashflow modelling, a detailed cost model was developed based on the mining schedule. Cost estimates from the most recent Wiluna costs for contract mining and owners costs were updated to reflect current expected market conditions; the average mining cost including both fixed and variable costs was $4.95/t.

The mining costs includes contract mining, mobilisation and demobilisation, dewatering, geotechnical, grade control, load and haul and mining related site operational staff costs.

Mining related accommodation for the owner's staff and mining contractor peaks at 118 per day rooms in Year 1, reducing to 93 per day in the final year.

Updated costs to be used in the next phase of work are currently being sourced from experienced Western Australian based mining contractors.

A detailed mining cost model is in Appendix E1.

6.12 Tailings Remining Costs

Current estimates are based on Wiluna Mining FY24 budget costs of $5.97/t

6.13 Stockpile Rehandle Costs

Open pit ore stockpile rehandle is based on Wiluna Mining FY24 budget costs for Heap Leach, adjusted for expected operations and is $2.77/t.

6.14 Wiluna Mining Centre Open Pit Reserve Estimation

This PFS considers a range of economic and technical risks. A key outcome of this PFS are recommendations for further work required to manage or mitigate the risks identified. The extent to which these risks and other public reporting requirements are material to the reserve estimate, as set out in JORC (2012), are detailed in Table 1 (Appendix A) completed by the relevant competent person (CP).

The results of this PFS demonstrated a positive financial outcome (positive NPV) combined with the assessment of the relevant CP indicate that a reserve estimate can be reported for Bulletin, East Lode and West Lode open pit mineral resources.

Reserves were estimated at cut-off grades for each ore type, which were based on unit processing costs, overheads and process recoveries specific to each ore type. All reserve estimates are represented as contained in situ gold content and have been deemed to be economically viable based on Lerchs-Grossman economic assessment (Lerchs & Grossmann, 1965); the financial viability has been validated using a detailed financial model.

6.15 Open Pit Ore Reserve Estimates

The Open Pit Ore Reserves estimate is based on the mineral resource model estimates classified as indicated after consideration of all mining, metallurgical and financial aspects of the operations. No inferred mineral resource has been considered in any part of the derivation of the open pit ore reserves. The Open Pit Ore Reserve estimates are presented below in Table 6-19 to Table 6-22.

Table 6-19: Bulletin Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	446,312	1.79	25,741
Total	**446,312**	**1.79**	**25,741**

Table 6-20: East Lode Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	1,014,228	1.77	57,628
Total	**1,014,228**	**1.77**	**57,628**

Table 6-21: West Lode Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	1,736,255	2.11	117,971
Total	**1,736,255**	**2.11**	**117,971**

Table 6-22: Total Open Pit Ore Reserve Estimate

	Tonnage (kt)	g/t	Contained Au oz
Proved	0	0	0
Probable	3,196,795	1.96	201,340
Total	**3,196,795**	**1.96**	**201,340**

7 UNDERGROUND MINING

7.1 Overview

The Wiluna UG concept consist of 3 distinct areas:

Zone 1: This zone primarily comprises virgin ground in the ELN region of the underground mine. It also contains two small, high grade stopes under the Happy Jack portal, which require minimal development for access. This area is likely to be mined using open stoping. Additionally, it contains a diamond drill drive enabling drilling into the southern area of ELN to potentially convert the large, inferred resource located in that area.

Zone 2: This is a deeper mining region situated in the BUR area of the underground mine, also primarily consisting of virgin ground. A small portion can be accessed from previously mined workings, which provides easier ore extraction during the initial mining. Due to the depth of this zone, the stopes will need to be filled. Initial plans involve using Cemented Rock Fill (CRF) to provide stability for surrounding stopes and Rock Fill (RF) to complete the filling process. Diamond drilling can also be conducted in this area to confirm additional inferred resource.

Zone 3: This zone mainly consists of remnant stopes in the WOD region. Access to this area for dewatering is immediate upon commencing activities to access the stoping fronts.

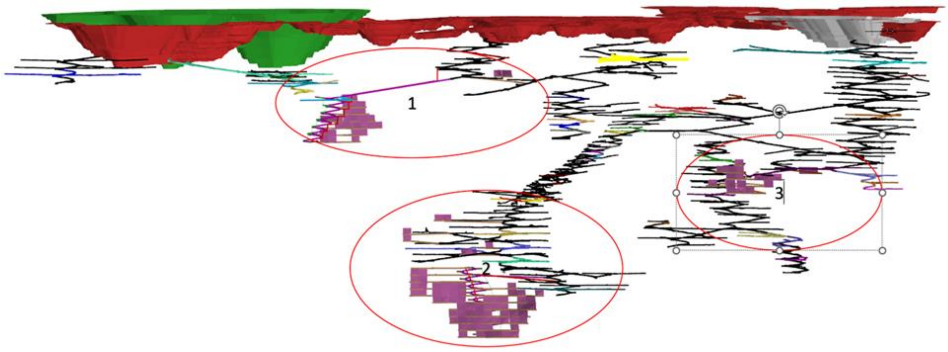


Figure 7-1: Location of planned mining zones

7.2 Current Status of Underground Mining Operations

The Bulletin and Happy Jack mines are currently under care and maintenance. Water levels are being maintained as per care and maintenance plans, shown in Figure 7-2, below. Happy Jack South has been abandoned, with water levels immediately below the portal.

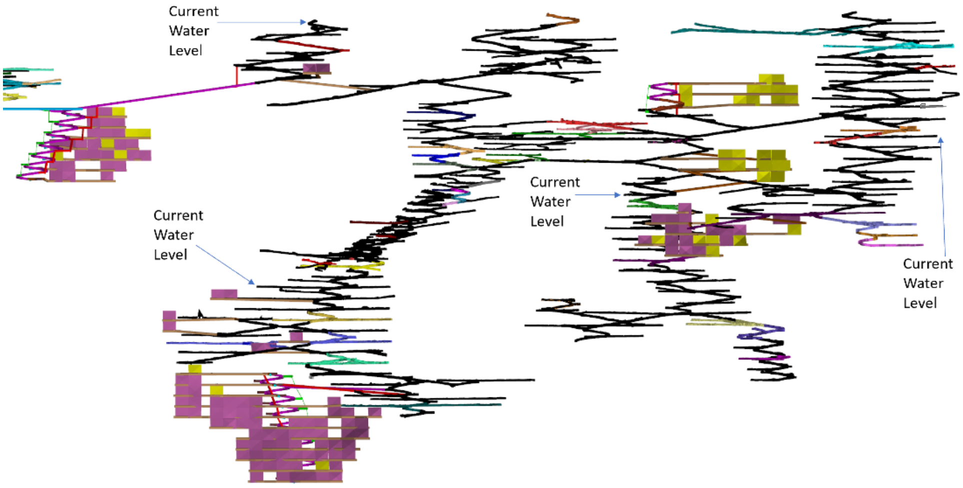


Figure 7-2: Current Water Levels

Essential electrical infrastructure in the way of substations, pumps, ventilation fans and refuge chambers has been retained to service care and maintenance requirements. Other non-essential infrastructure has been removed and stored safely on surface.

Further information about transition from care and maintenance to operations is contained in Section 6.9.

7.3 Description of Considered Mining Method Options

7.3.1 Retreat Open Stoping

Planned method for zones 1 and 3 and partial method of zone 2. This method was selected as it was the historic method of the mine. Geotechnical review was completed on the areas planned and it was determined that the ground was competent for such a method.

7.3.2 Open Stoping with Pillars

Due to the planned sequencing of the mining, retaining pillars would have been less efficient in the area it was planned for open stoping. Historical mining showed that the pillars were not required to maintain a competent rock mass in the chosen stoping areas.

7.3.3 Open Stoping with Cement Rock Fill (CRF)/Rock Fill (RF)

After geotechnical review, this method was selected to mine the virgin area of zone 2. This method would provide a stable pillar after each stope to continue the retreat method of stope sequencing planned. It would also enable the continued use of production drilling using downholes for the stoping as it would be possible to mine back through the CRF and re-access the top of the stoping areas.

7.3.4 Open Stoping with Pastefill

This method was not the preferred method of fill due to cost. It provided a significantly higher capital investment to set up the paste infrastructure as well as higher operating cost.

7.4 Materials Handling

The planned material handling will be Load and Haul utilising Boggers and Trucks. No other option was investigated due to the mine historically utilising this technique and subsequently being set up for such a method.

7.5 Zone Information

7.5.1 Zone 1

Zone 1 is to be accessed via the existing Happy Jack South Portal. This area will need to be fully dewatered to access the mining fronts initially. Once dewatered, the two small high grade stopes near existing workings can be mined immediately if desired. However, priority should be given to accessing the diamond drill platforms to confirm the inferred resource to the south of the planned stopes (Figure 7-1). Drilling from these platforms will also be useful in assessing the uncertain extent of voids from historical mining from the East Lode underground workings as part of mining program risk management.

After establishing the diamond drilling area, the decline can be extended to access the stopes. Due to the shallow depth of the stoping region and the competent ground conditions, this area can be mined using open stoping. As a result, mining will proceed from north to south on each level and from top down across a region. Three levels (1130, 1105, and 1080) have multiple fronts available, which will enable simultaneous activities on the level.

Given the total tonnes and grade are the lowest of the three zones, this area's mining life will be split over three years. This approach aims to maintain a higher average grade from the mine on an annual basis.

7.5.2 Zone 2

Zone 2 can be accessed via the Bulletin Portal but will require some dewatering to reach the mining fronts. There are seven stopes accessible from previous mine workings, which can be quickly reached once the area is dewatered, providing some ore from this region if needed. The rest of the zone will require capital development to access the ore in the virgin ground. This area may also need grade control drilling, and diamond drilling should be conducted to potentially convert inferred resource to measured or indicated categories (Figure 7-1).

Due to the depth of this zone, mining solely via open stoping will not be feasible, as the area will need to be filled. The initial plan is to use CRF to provide a stable pillar in the stope for a retreat mining sequence, as well as the stope above or below depending on sequence. One benefit of filling the area is that it allows for multiple levels to be mined simultaneously. For example, a stope could be mined on one level, leave another level as a pillar, and then mine the next level concurrently. Having these multiple fronts will help ensure production targets can be met, as ore should always be available.

Given that this area is the highest grade, it would be the best candidate for mixing ore from Zone 1 if both are available at the same time.

7.5.3 Zone 3

Zone 3 is accessed via the existing Happy Jack North portal.

As the top area of this zone was maintained during the care and maintenance period, it can be accessed immediately, providing early access for dewatering to access the ore body. Similar to

Zone 1, this area can be mined using open stoping due to its shallow depth and competent ground conditions. Consequently, it will follow the same mining sequence as Zone 1, proceeding north to south per level and top down across mining zones.

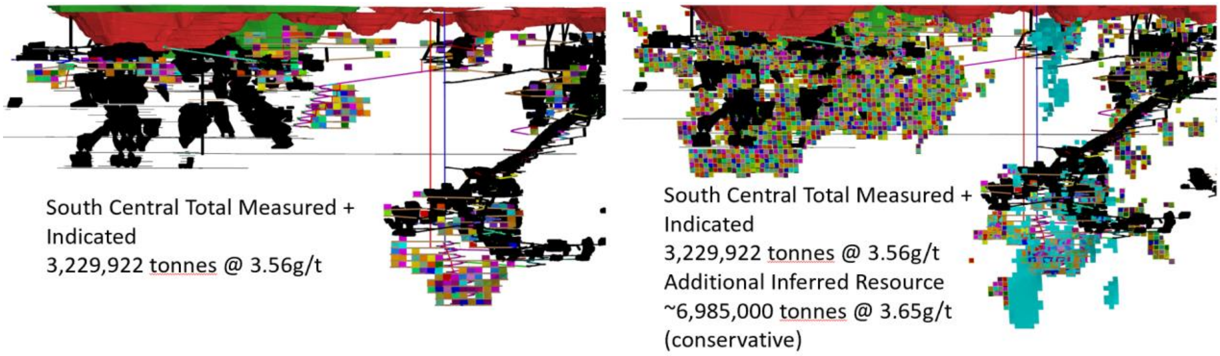


Figure 7-3 Measured + Indicated resource vs Measured, Indicated and Inferred in Zone 1 and 2

7.6 Stoping Sequence

Zone 1

This zone will be mined as Retreat Open Stoping with no fill required. It will be mined top down, and the first stope will be at the northern extent of each level. The two stopes at the base of the currently developed Happy Jack South development can be taken in any order. As previously mentioned, this area will require dewatering and potentially rehab before any mining activity can commence.

Zone 1 also has Diamond Drill Drives designed at the top of the ore drive decline. This area should have priority placed upon it to ensure that drilling of the large inferred resource can begin as soon as possible.

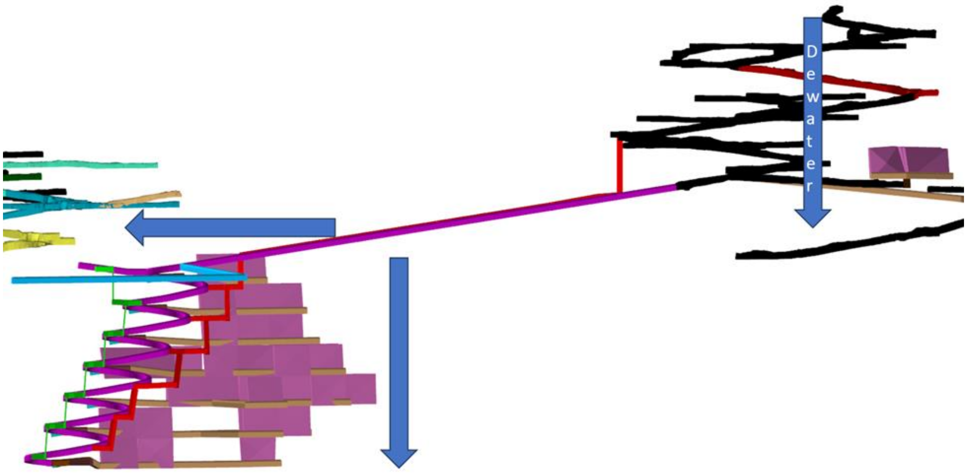


Figure 7-4: Zone 1 Sequence

Zone 2

Zone 2 will be mined with a combination of Retreat Open Stoping and Long Hole Stoping with Cement Rock Fill (CRF) and Rock Fill (RF). The stopes that are developed off the previous workings will be Open Stoping as per Zone 1 however any new stope off the newly designed development in Burgundy will be filled using a combination of CRF to support the required pillar for the next stope and RF to fill the remaining void. The stope circled in Figure 7-5 is the exception to this, which will be left open as there are no surrounding stopes above or to either side.

As the development enters the level in the middle of the planned stoping area, it allows for 2 mining fronts per level. This area has been designed as retreat for the outer extents inward however, as it requires filling, this sequence can be altered and the fill schedule adjusted accordingly. It should be noted that by doing this, a higher portion of CRF is likely needed which will impact mining schedule. A zone pillar has been left at the 450 level in order to have more mining fronts open in Burgundy as the mine life progresses. The 450 level will be mined once the 375 level is completed.

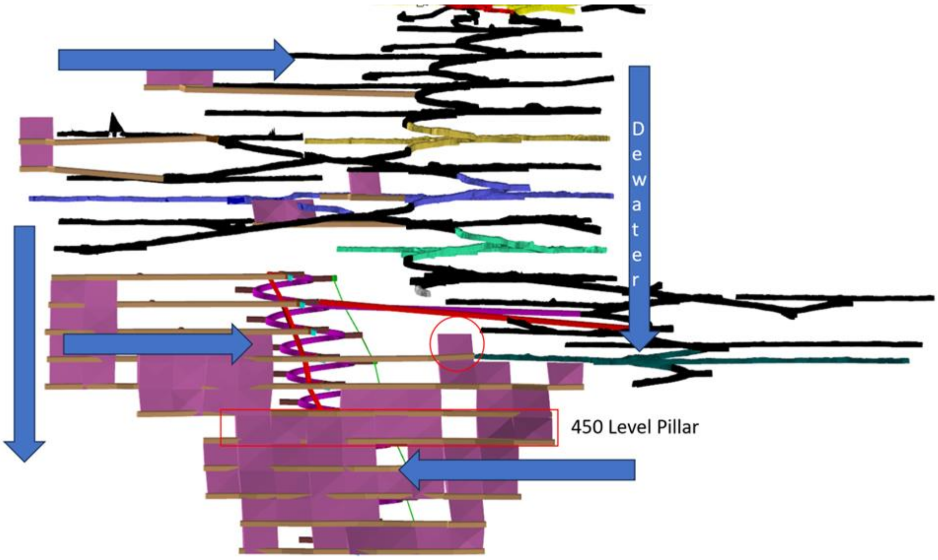


Figure 7-5: Zone 2 Sequence

Zone 3

Zone 3 will be similar to Zone 1 in that it will Retreat Open Stoping with no fill. The difference comes in that Zone 3 can have four unique mining fronts once the lower portion (Zone 4) is dewatered and rehabbed.

Figure 7-6: Zone 3 Sequence

7.7 Design Capacity and Operating Schedule of the Mine

The underground mine production schedule was planned to be levelled at 500Mtpa for a four-year production life. However, when the stopes were levelled for measured and indicated resource, the tonnes were unable to meet this with the planned production zones. However, the upside case listed further into the report does meet this parameter.

Schedule Parameters are listed below:

Table 7-1: Schedule Parameters

Resource	Rate	Description
Lateral Development	700m/month	Total development target for 3 jumbos
Production Drill	10,000m/month	Total Stope Drilling for 2 Simbas
Stope Bogger	41,000t/month	Stope tonnes for 1 stope bogger and 3 trucks
Stope Backfill (CRF/RF)	1,550t/day	Combination rate for filling of stopes for both CRF and RF inclusive small curing time
Rehab Rate	60m/day	Target for Rehab given historical rehab is spot bolting + spot meshing

No rate is applied for development as it is assumed development bogger + trucks will follow jumbos around the development heading in the mining cycle.

7.7.1 Selection of mining and stoping methods

Mining Method

The mining method will be a continuation of the mining method previously employed by Wiluna Mining before entering care and maintenance. Thus Zones 1 and 3 will be mined with Retreat Uphole Open Stoping and Zone 2 will be a combination of Retreat Uphole Open Stoping and Long Hole Stoping with CRF filling.

Material handling

Material handling will be completed using load and haul as per previous operations within Wiluna Mining before care and maintenance.

Ground Support

Ground support will be a continuation of previous practises at Wiluna Mining. Development will be support with split sets and mesh, intersections will have cablebolts and stope brows will also be cablebolted.

Explosives Recommended

Given Wiluna Mining has a history of ground water inflows, it is recommended that emulsion be used for both development and production charging. Emulsion has been proven to operate well in wetter conditions. Emulsions can also be precisely tailored to achieve controlled and consistent fragmentation over ANFO, as well as improved perimeter control. This precise fragmentation also makes the mine workings safer for persons working underground.

Development Profiles

A list of development is listed below:

Table 7-2: Development Type and Profile

Dev Type	Act_Type	Profile	Description
Access	ACC	5.5mWx5.5mH Arched	Level Access from Declines
Diamond Drill Drive	DDD	5.5mWx5.5mH Arched	Drill drive for Diamond Drill exploration
Decline	DEC	5.5mWx5.8mH Arched	Decline Ramp
Escapeway Drive	ESD	4.5mWx4.5mH Arched	Drive to access escapeway
Escapeway Raise	ESR	1.2m Diameter	Raise for escapeway
Incline	INC	5.5mWx5.8mH Arched	Incline Ramp
Ore Drive North	ODN	4.5mWx4.5mH Arched	Ore drive developing north
Ore Drive South	ODS	4.5mWx4.5mH Arched	Ore drive developing south
Return Air Drive	RAD	5.5mWx5.5mH Arched	Drive for ventilation return
Return Air Raise	RAR	4mx4m Square	Raise for ventilation return
Sump	SMP	4.5mWx4.5mH Arched	For water storage

Production Drilling and Blasting Operations

Zones 1 and 3 will utilise Uphole Retreat Open Stoping. This will involve drilling upholes from the extraction level, blasting the stope, extracting the ore and then leaving a void before moving onto the next stope in the level. Given the extraction method, the stoping should be done top down.

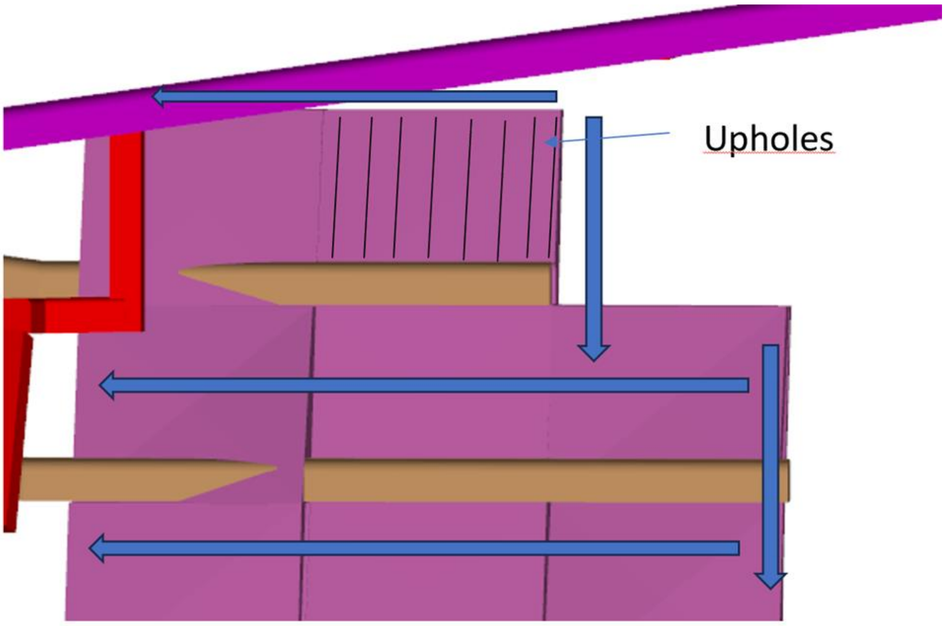


Figure 7-7: Drilling Plan Zone 1 and 3

Zone 2 will be mined with a combination of Retreat Uphole Open Stoping as well as Longhole Stoping using CRF/RF fill. Stopes in the downhole section will also retreat from level extents into the middle of the level where the access is. This enables 2 mining fronts per level allowing filling to occur while production happens in the same level if required however some form of dust management will likely be required. A level pillar has been left at 450 level to enable mining to occur above and below this level at the same time opening up a further 2 mining fronts for a total of 4 for the area if required.

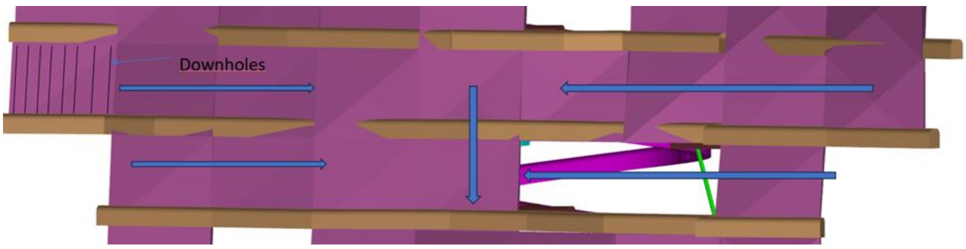


Figure 7-8: Drilling Plan Zone 2

7.8 Mining Schedule

The mine schedule was levelled at a planned 500ktpa. However, as only Measured and Indicated Resources could be analysed, there are not enough tonnes in the planned mining zones to reach this target. The reserves mining schedule is listed below. As such, if the target is required for underground to be 500ktpa, the reserves case does not produce sufficient underground ore.

The schedule is completed with Mine Recovered Tonnes as per Wiluna Mining standard previously. As such, dilution of 5% has already been factored into the schedule figures.

A dilution and mining recovery (ore loss) assessment was completed and a dilution factor of 0.25m on the hanging wall and footwall of the stopes. Stopes preliminarily design using MSO then altered as required. A mining recovery (ore loss) factor of 95% was used.

Table 7-3: Reserve Case Physicals

	2027	2028	2029	2030	2031
Production (t)	0	186,784	418,158	513,473	290,301
Grade (g/t)	0	4.03	4.35	4.54	3.64
Lateral Development (m)	133	4,729	7,972	3,115	4
Vertical Development - EWR	32	81	252	118	
Vertical Development - RAR	50	157	217	132	
Rehab (est. m)	1,000	4,500	3,000	2,800	1,100

Table 7-4: Reserve Case Resource Breakdown

	2027	2028	2029	2030	2031
Measured Tonnes	0	29,664t	208,376t	136,089t	73,268t
Measured Grade	0	4.25g/t	5.89g/t	5.6g/t	4.48g/t
Indicated Tonnes	0	117,828t	122,688t	296,424t	171,029t
Indicated Grade	0	5.1g/t	4.63g/t	5.34g/t	4 g/t
Inferred Tonnes	0	0	0	0	0
Inferred Grade	0	0	0	0	0
Planning Internal Diltion (0 g/t grade)	0	39,292t	87,094t	80,959t	46,002t

Planned internal dilution is waste blocks that need to be mined to produce a mineable stope shape. Any inferred blocks have been set to zero grade and classed as waste. These blocks provide additional dilution to the measured and indicated ore contained within the stope shape.

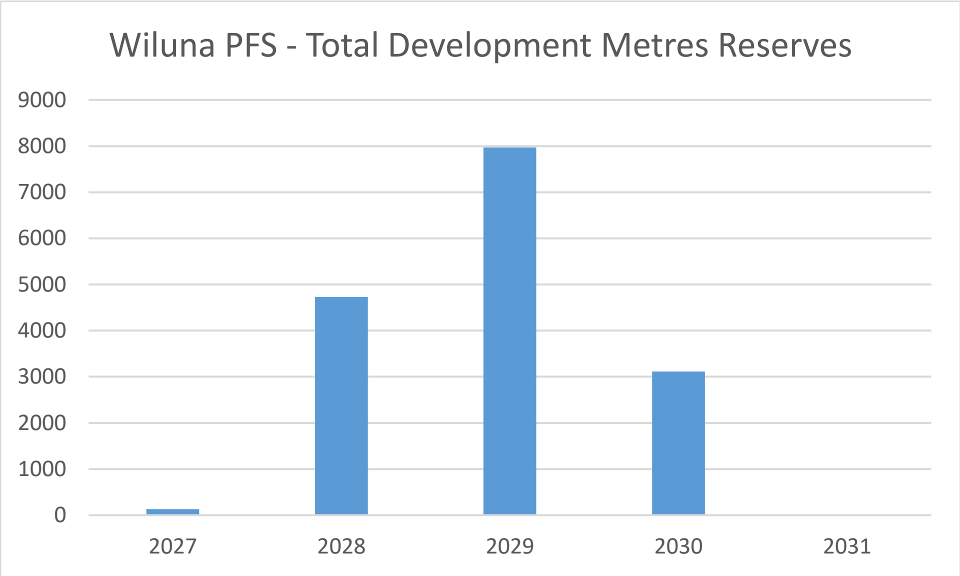


Figure 7-9: Reserve Case Development Metres

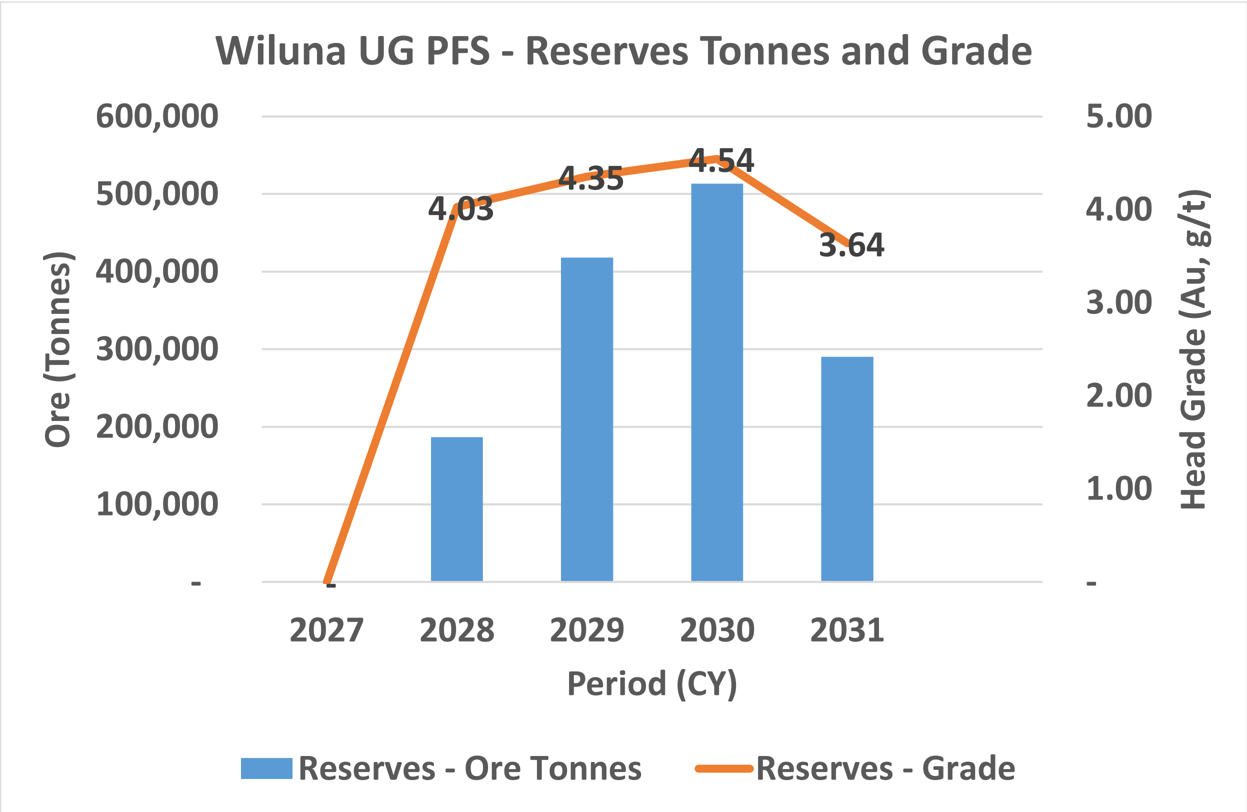


Figure 7-10: Reserve Case Tonnes and Grade

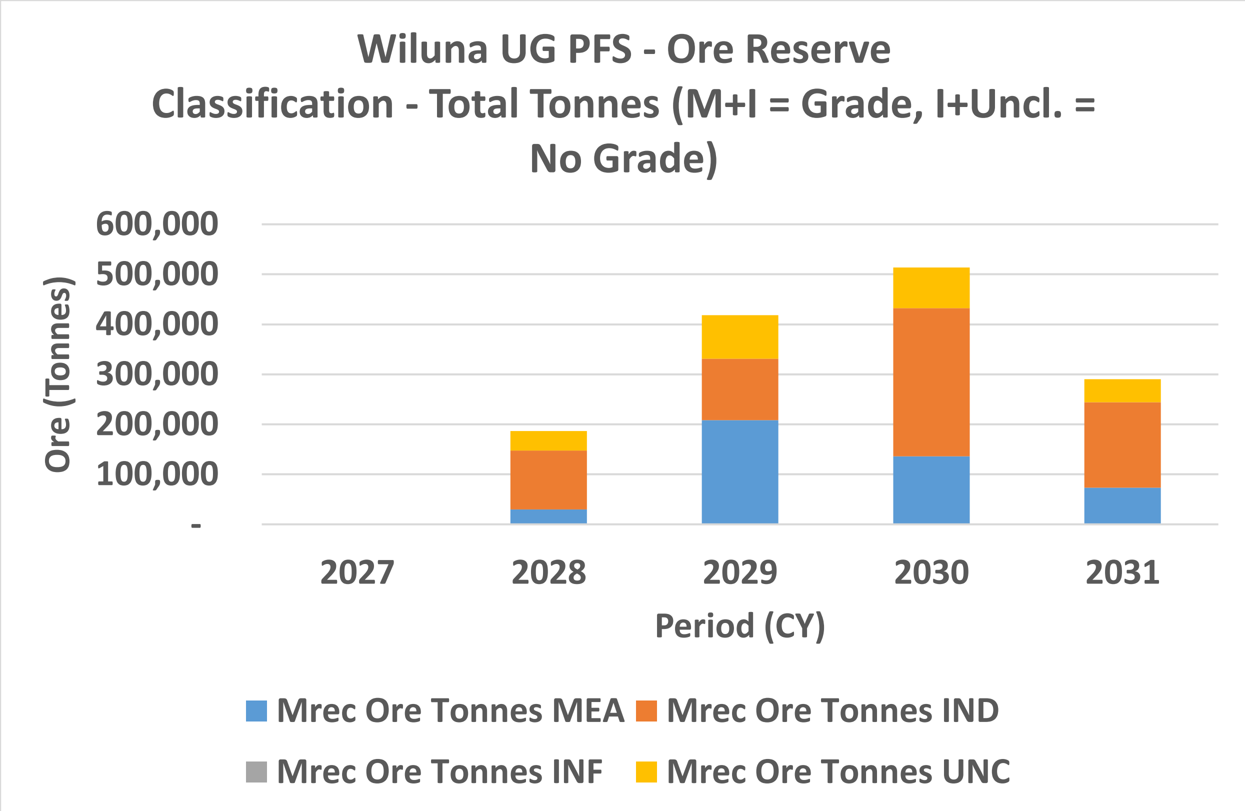


Figure 7-11: Reserve Case Ore Reserves per Year

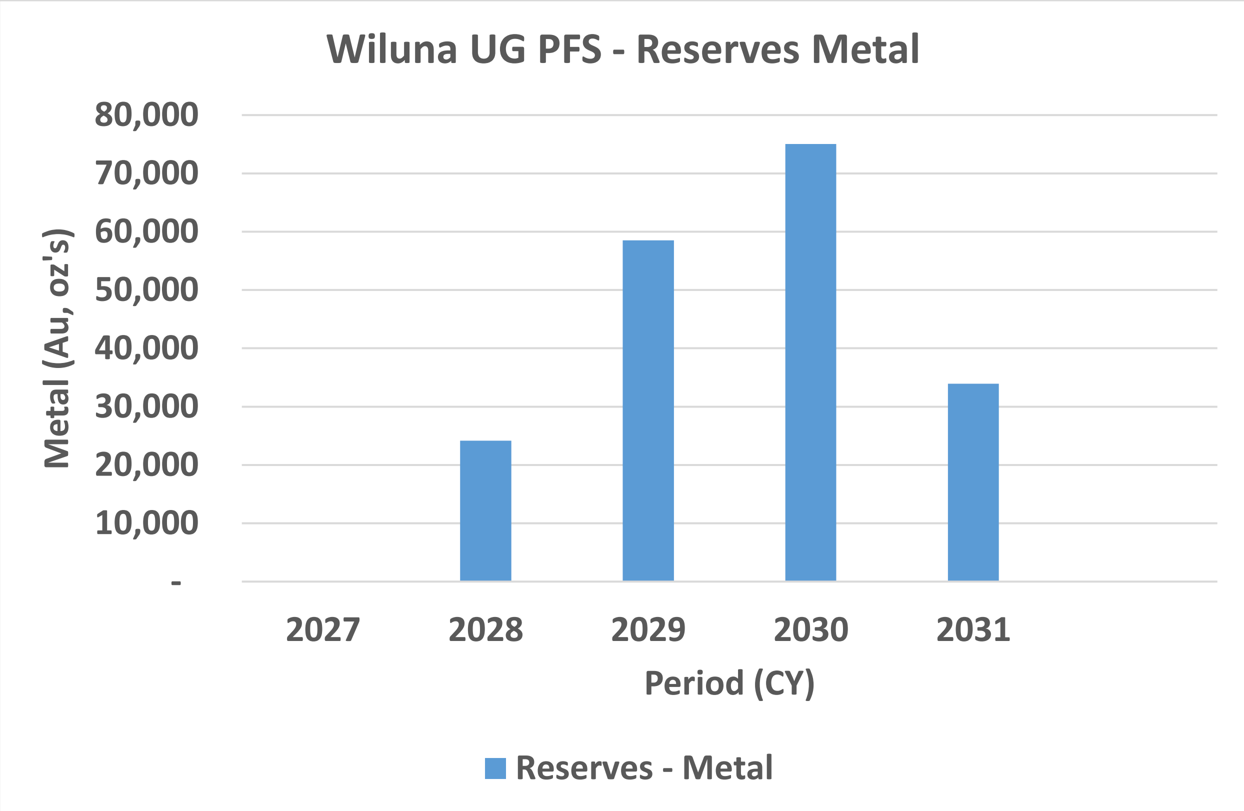


Figure 7-12: Reserve Case Metal Tonnes per Year

Table 7-5: Reserve Case Fleet Numbers

	2027	2028	2029	2030	2031
Development Jumbo	1	3	3	2	0
Rehab Jumbo	1	1	1	1	1
Production Drills	0	2	2	2	2
Stope Bogger	0	1	1	1	1
Development Bogger	1	1	1	1	1 (for waste movement for CRF)
CRF Bogger		1	1	1	1
Stope Trucks	0	3	3	3	3
Development Trucks	2	2	2	2	1 (for waste movement for CRF)

7.8.1 Wiluna PFS Production Target Case

The Production Target case provides the required tonnages to support production with a duration of four and a half years rather than the four years initially targetted. The tonnages have been able to be increased with the addition of material primarily in the upper area of Zone 3 (Figure 7-13). There are also stopes in the other areas in yellow which can be brought into the schedule. These stopes could not be included in the Reserve schedule as there is too much Inferred resource within these stopes.

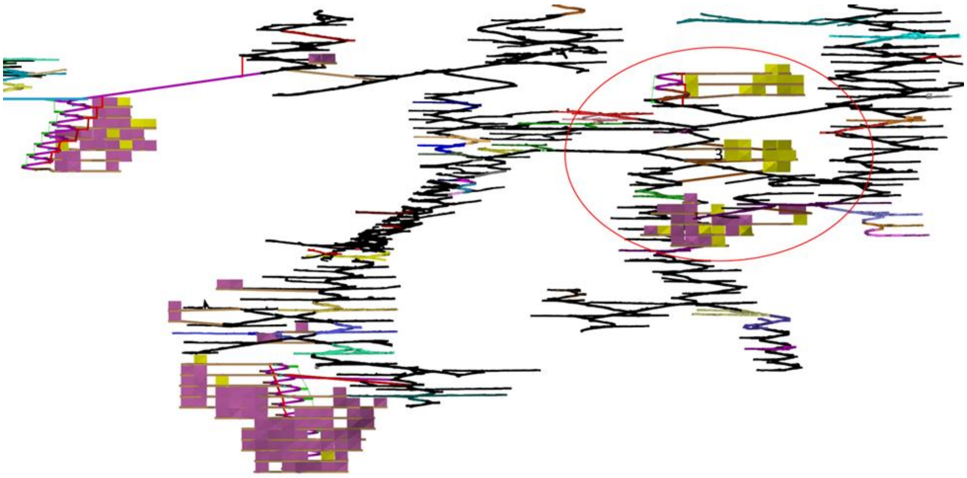


Figure 7-13: Additional Stopes Included with Production Target

As this is a Production Target case, Inferred-heavy areas are mined toward the end of the schedule. As such, only a maximum of 10% Inferred material is included in the first three years of production.

There will be no change in the activities at the start of the schedule (dewatering and rehab) as these areas are still required to open the primary ore areas. The development for the upper and mid Zone 3 begins in December of 2026 to enable the Inferred resource to be brought into the schedule in 2027 and 2028. There is a small portion of ore (~28,000t) that falls into start of 2029 however will be mined quickly. If production targets can be exceeded, this ore will likely be mined before the end of 2028.

As with the Reserve case, there is an opportunity to include the ore at the top of Zone 1 early in the schedule to increase the tonnages by ~112,000t at 3.69g/t.

Mining Sequence

Zone 1

Zone 1 will be mined exactly the same as the Reserve case but will include the additional stopes that have been brought in with the Inferred resource. Priority should still be given to the Diamond Drill Drives to enable drilling to potentially convert Inferred resource to Measured/Indicated. All stoping will be retreat open stoping.

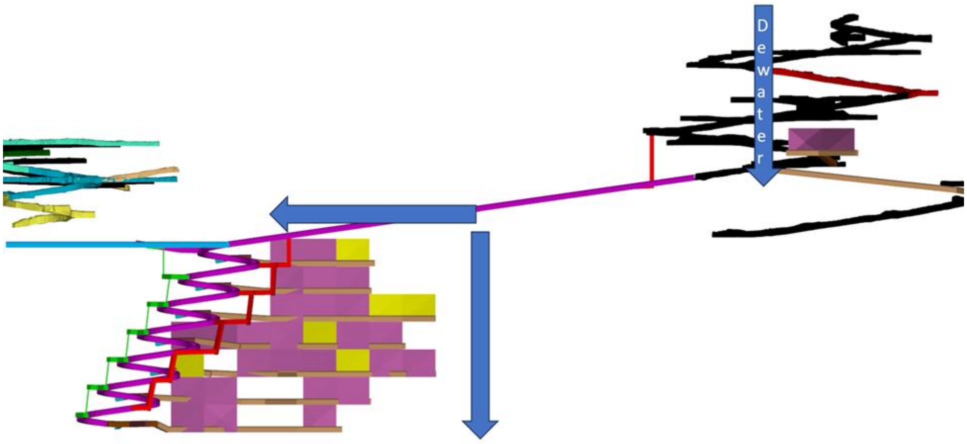


Figure 7-14: Zone 1 Sequence Production Target

Zone 2

As with Zone 1, Zone 2 will be mined exactly as the Reserve case with additional stopes brought in for additional tonnes. As with the Reserve case, there will be a mix of Retreat Open Stoping and Long Hole Stoping using CRF/RF fill.

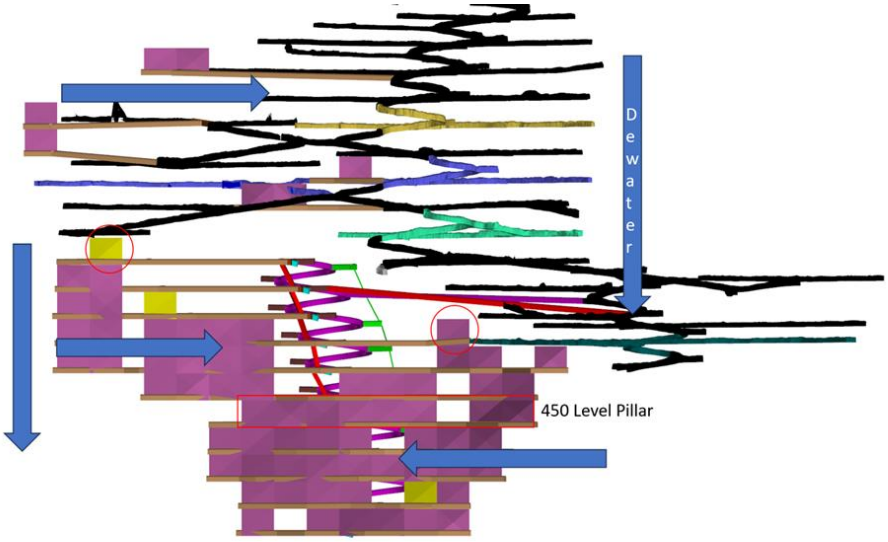


Figure 7-15: Zone 2 Sequence Production Target

Zone 3

There is no change for the planned sequence of Zone 3 in terms of extraction in the zones. Retreat Open Stoping will still be used to extract the ore. The major difference comes with the inclusion of the three extra mining fronts in Zone 3. These will be mined the same way as the Reserve mining front as shown in Figure 7-16. Dewatering will still be required however won't be required for the top and middle mining fronts.

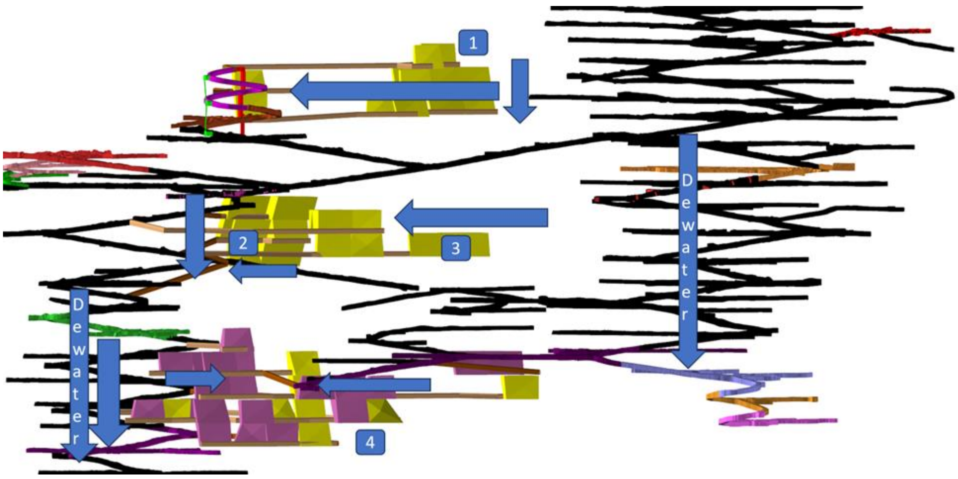


Figure 7-16: Zone 3 Sequence Production Target

Production Target Case Mining Schedule

The Production Target case had no changes in the levelling compared to the Reserve case. No changes are expected for the overall sequence of extraction per mining front within Zone 3.

The physicals are shown below.

Table 7-6: Production Target Physicals

	2027	2028	2029	2030	2031	2032
Production (t)	0	210,463	411,592	511,423	531,401	289,641
Grade (g/t)	0	3.94	4.32	4.35	4.55	3.91
Lateral Development (m)	155	4,804	8,270	4,715	1,735	158
Vertical Development - EWR	0	53	252	178	0	0
Vertical Development - RAR	25	132	217	182	0	0
Rehab (est. m)	1,000	4,500	3,100	2,900	2,900	

Table 7-7: Production Target Resource Breakdown

	2027	2028	2029	2030	2031	2032
Measured Tonnes	0	31,078t	178,483t	129,732t	82,387t	28,791t
Measured Grade	0	4.06g/t	6.86g/t	5.88g/t	3.99g/t	6.68g/t
Indicated Tonnes	0	118,428t	123,165t	283,606t	132,820t	108,270t
Indicated Grade	0	5.31g/t	4.83g/t	4.95g/t	5.34g/t	3.95g/t
Inferred Tonnes	0	16,355t	26,522t	26,920t	189,363t	101,674t
Inferred Grade	0	4.13g/t	4.68g/t	4.70g/t	6.62g/t	5.75g/t
Planned Internal Dilution (0g/t Grade	0	62,713t	80,976t	95,417t	110,402t	50,905t

Table 7-8: Production Target Development Metres

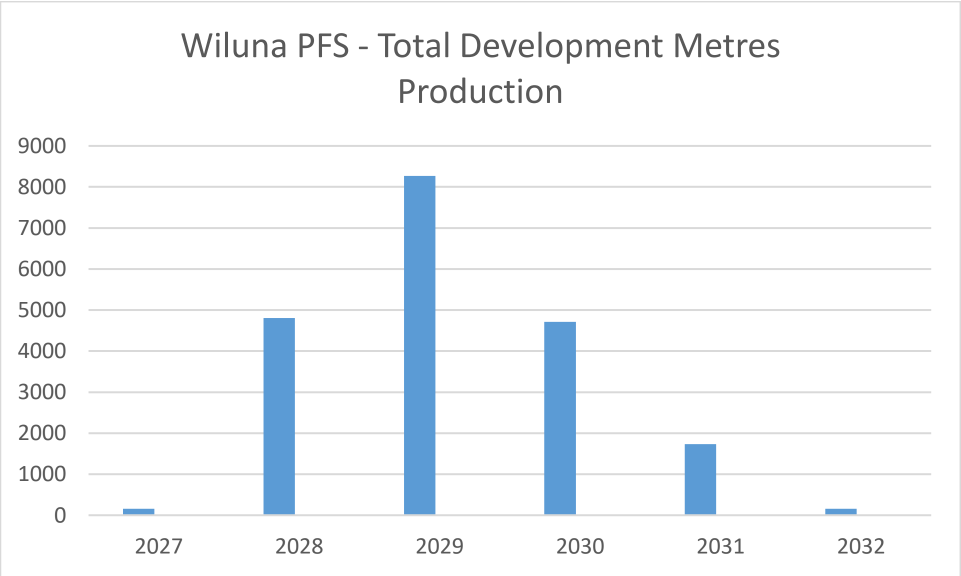


Table 7-9: Production Target vs Reserves target Tonnes and Grade

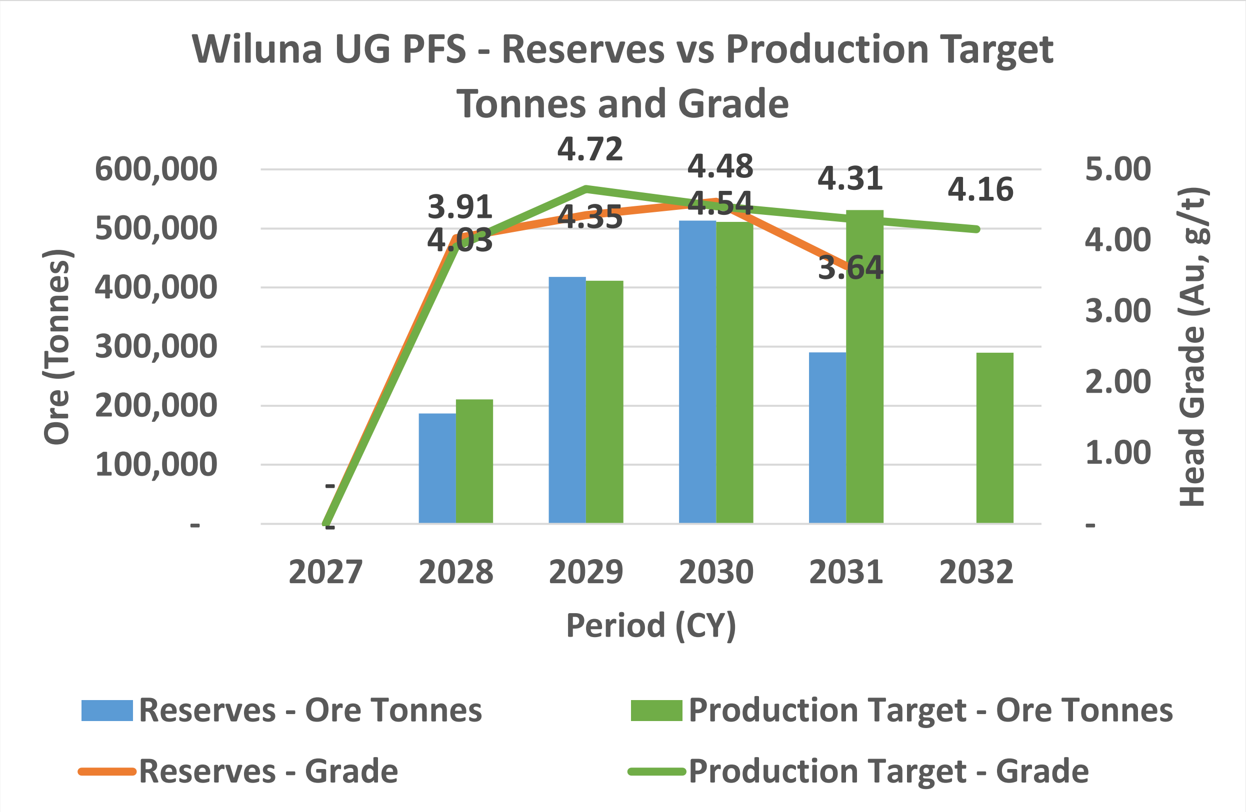


Table 7-10: Production Target Ore Breakdown

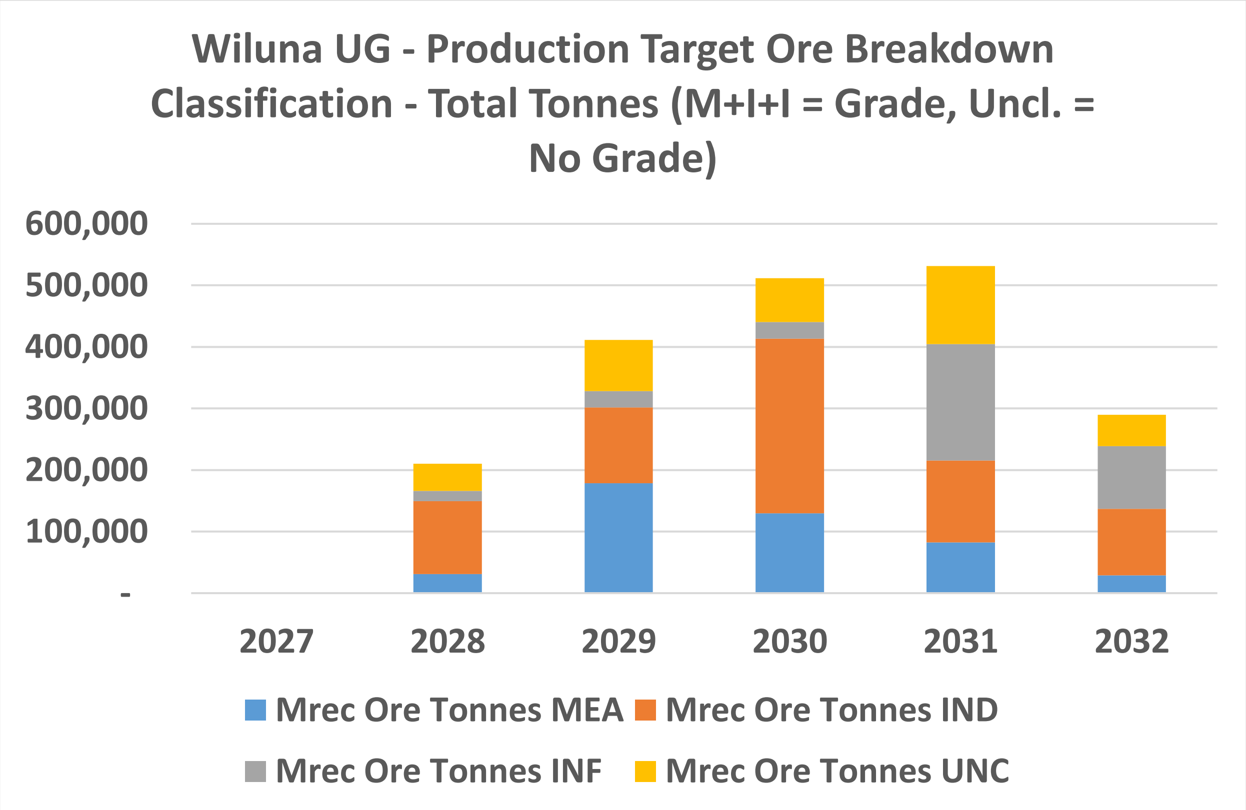


Table 7-11: Production Target Metal

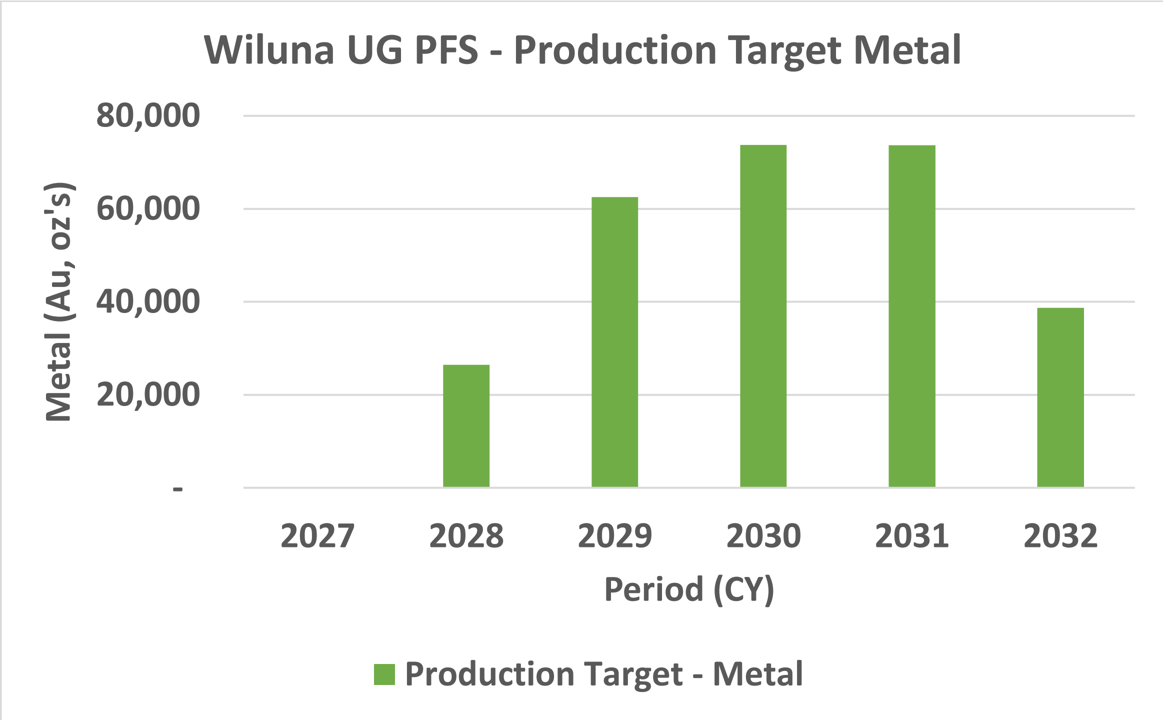


Table 7-12: Production Target Fleet Numbers

	2027	2028	2029	2030	2031	2032
Development Jumbo	1	2.5	3	2	2	1
Rehab Jumbo	1	1.5	1	1	1	
Production Drills	0	2	2	2	2	2
Stope Bogger	0	1	1	1	1	1
Development Bogger	1	1	1	1	1	1 (for waste movement for CRF)
CRF Bogger		1	1	1	1	1
Stope Trucks	0	3	4	4	4	4
Development Trucks	2	2	2	2	2	1 (for waste movement for CRF)

7.8.2 Schedule Conclusions

The Reserves case for Wiluna UG will not achieve the required ore production of 500kt per year over four years, nor will it meet the total required tonnage of 2.0Mt. The Production Target can deliver the total required 2.0Mt, but this will take an additional six months to achieve. Drilling is recommended in Zone 3's planned stoping areas to convert this resource and provide greater confidence in the ore bodies.

7.9 Mine Development Resumption

With the resumption of underground mining post care and maintenance, the following actions will be required:

- dewatering of some old and recent mine workings,
- rehabilitation of some old workings continuing from the point reached before administration,
- minor rehabilitation of more recent workings.

Allowance for rehabilitation has been made in both the physical schedules and the capital and operating costs.

During care and maintenance period, non-essential infrastructure was removed from the mines and stored on surface. Some of this infrastructure will need refurbishment, for which an allowance has been included in the capital costs. However, minor unidentified items may incur additional costs.

New horizontal and vertical capital and operating development will be necessary for the future work program and mine schedule.

7.9.1 Bulletin

During the care and maintenance period under administration, the main parts of the Bulletin mine remained dewatered, but are only accessible to light vehicle and IT, due to limited ventilation.

- Bulletin Decline below 1150 Level: Currently flooded. Dewatering and likely rehabilitation are required the mine plan. An allowance of 6 months from schedule commencement has been included for dewatering.
- Woodley Decline below 1050 Level: Similar conditions to Bulletin decline. A 6-month allowance for dewatering is also included.

Dewatering and rehabilitation of these areas must be coordinated as the mining plan links the two areas.

7.9.2 Happy Jack North

- A connection exists between Happy Jack North and Bulletin along the old rail drive on 1150 Level, mainly serves as a secondary egress route. Traffic here is limited to light vehicles, ITs and jumbos.
- Above the old rail drive, Happy Jack North is fully accessible, but currently lacks refuge chambers. Below the rail drive is flooded to just below the level.
- A connecting drive between Happy Jack South and Essex Decline at 1260-1286mRL is planned. Both declines will need full dewatering prior to breakthrough to prevent inrush.

This connection is needed to ensure that second egress is provided to all points in Happy Jack South.

- An allowance of 3 months for dewatering Essex decline has been included from schedule commencement.
- Golden Age decline is currently dewatered to 650 Level.

7.9.3 Happy Jack South

Underground mining at Happy Jack South was undertaken by previous owners, and the decline was subsequently abandoned. Primary ventilation and second egress were via a vertical raise bore from 1480 bench in the pit to the 1380 Level. This raise bore also contained the second egress ladderway.

Under current ownership:

Approximately 2/3 of the Happy Jack South decline was rehabilitated before entering administration.

The ladderway between 1380-1480 levels collapsed and was removed.

Mine electrical services were withdrawn, allowing the mine to flood to less than 10m vertical below the portal.

Re-accessing this rehabilitated section will require dewatering to the rehabilitation face, and a geotechnical inspection. The remaining approximate 1/3 of the Happy Jack South decline will need rehabilitation after dewatering, before further decline development.

A pump lowered down the vent raise from 1480 Bench in the pit will enable dewatering down to the 1380 Level and establish a through airway in the Happy Jack South Decline. This setup will facilitate the assessment and rehab of the upper section of the decline as services are reinstated without needing secondary ventilation from the portal.

Rehabilitation below 1380 Level will require installing primary ventilation fans on the surface and a secondary ventilation fan in the decline above the 1380 Level.

A connecting drive between Happy Jack South and Essex Declines is planned for secondary egress for Happy Jack South. Development can proceed from either end, however both declines will need full dewatering and rehabilitated before breakthrough.

7.9.4 Ore Transport

Run of mine ore will be loaded into trucks underground and hauled to the Bulletin and Happy Jack ROM pads adjacent to the respective pit ramp crests, where it will be rehandled to road train for transport ~1km to the treatment plant.

Loader and truck numbers will vary according to scheduled total tonne-kilometre materials movement.

7.9.5 Development Waste

Development waste will be tipped at the following locations:

- Bulletin – tiphead located adjacent to the top of the open pit ramp, filling the southern end of Bulletin pit
- Happy Jack – tiphead located in Happy Jack South pit

- There will be opportunity for disposal of some development waste in stoping voids as Cemented Rock Fill or as loose rock fill.

There will be some scope for disposal of development waste into mined stope voids, which will reduce the total tonne-kilometre materials movements required.

7.9.6 Escapeways and Refuge Chambers

The mine is serviced with two means of vehicle egress above 1150mRL in Bulletin and Happy Jack North, with connection via the rail drive.

Below 1150mRL for the Happy Jack North and Golden Age Declines there is a series of connecting escapeway raises equipped with ladderways servicing the emergency second egress from the mine. These escape ladderways have been inspected and maintained during care and maintenance and are in full working order.

The Bulletin Decline is flooded to ~1150mRL and the Woodley Decline to ~1050mRL. For mining in these areas, the ladderways will need to be inspected after dewatering, and assessed and repaired or replaced as appropriate.

With the progressive dewatering and rehabilitation being undertaken in Happy Jack South, the original ladderway had failed and was removed as scrap. When Happy Jack South was abandoned under administration, a replacement of the scrapped ladderway had not yet been established, and no second egress was yet in place. Second egress will be obtained with the planned development connection between Happy Jack South and Essex declines.

The mine plan for Happy Jack South provides for a parallel decline to be developed, which will serve to extend the second egress into the new workings. Detailed design f this connection drive will be required. When the parallel decline is in proximity to the orebody and commences the spiral to maintain position, a series of small diameter raises will be excavated and equipped with escape ladderways.

Currently there are refuge chambers located in the Bulletin workings at the following levels, servicing the care and maintenance requirements:

- 1340
- 1220
- 1140
- 978
- 875
- 750 (4 person portable)

New mining areas have had escapeways designed to link with the existing escapeway networks. These new escapeways are shown in green the figures below.

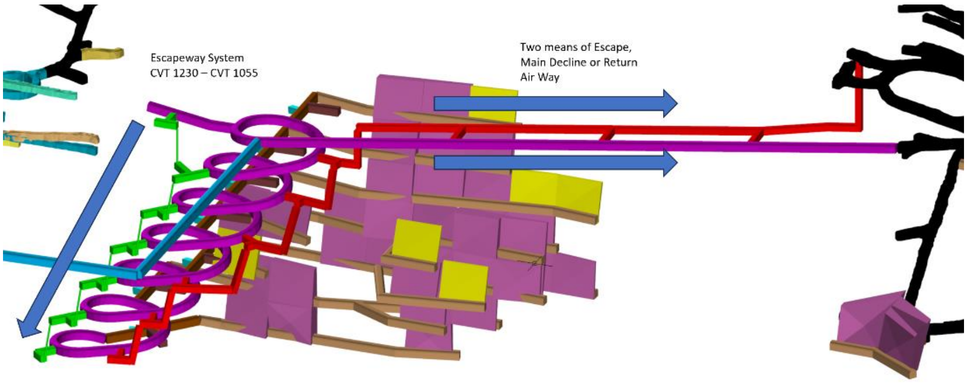


Figure 7-17: Zone 1 New Escapeways

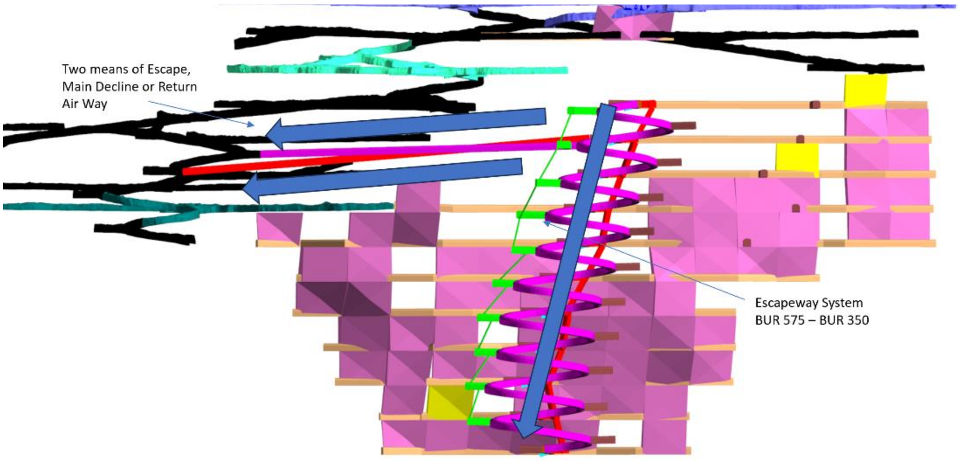


Figure 7-18: Zone 2 New Escapeways

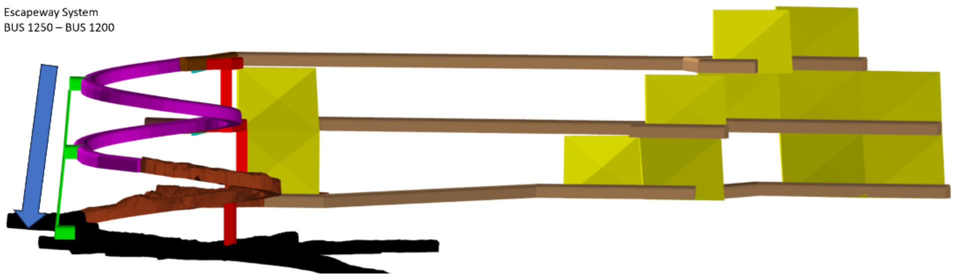


Figure 7-19: Zone 3 New Escapeways

Additional refuge chambers will be deployed as the mine workings are extended to ensure maximum 750m walking distance from working areas for personnel in case of an emergency. Based on currently deployed refuge chamber locations;

- 4 chambers will be required to service the decline to the base of Burgundy.
- 2 chambers will be required to service Zone 3. Likely 1 permanent and 1 portable.
- 5 chambers will be required to service Zone 1

- A total of 2 additional 4 person portable chambers are recommended to assist in reaching areas just outside regulation distances and to manage potential entrapment conditions.

The site asset register shows nine static refuge chambers with capacities ranging 12-20 personnel at the mine, plus two IT-portable four person refuge chambers, all owned by Wiluna Mining. Three static refuge chambers and one IT-portable four person refuge chamber are available for redeployment in the mine. One of these refuge chambers is stripped down for maintenance.

Existing spare refuge chambers will be deployed as required, with an additional 2 refuge chambers to be purchased as indicated by the mine schedule. Budget unit price of $180k for 16 person refuge chambers has been allowed.

Raises for second egress will be excavated and equipped with escape ladderways as the mine workings extend with new development. Budget capital of $4,850/m has been allowed for excavation and the supply and installation of ladderways into the excavated raises.

7.10 Mine Services

A full suite of mine services had been established at Bulletin, Happy Jack North and Happy Jack South for mining operations prior to Wiluna Mining going into administration.

Some mine services items are owned by Wiluna Mining and have been retained on site during care and maintenance. Non-essential infrastructure has been removed from underground and stored on surface.

Equipment that had been supplied by the mining contractor, or was being hired, has been demobilised from site with Wiluna Mining entering administration. Isolated items, such as Flygt pumps, have been hired during administration under care and maintenance to keep the mine dewatered and in a state of operational readiness.

Mine services and infrastructure requirements for the resumption of underground mining are:

7.10.1 Electrical

The high voltage supply installation systems for Happy Jack South (HJS) and Happy Jack North (HJN) that were in place have been removed for care and maintenance, with only the HV cable from the previous HJN installation remaining.

The high voltage supply installation and reticulation system for Bulletin remains in place and in service, meeting the care and maintenance requirements of the underground mines.

The mine asset register shows the following electrical assets owned by Wiluna Mining, which are deployed and which are available:

Item	Owned by Wiluna Mining	Deployed	Available
Substation 11kV/1kV	7	7	0
Ring Main Unit 11kV	5	3	2
Distribution Board 1kV - 5 way	4	2	2
Distribution Board 1kV - 4 way	4	2	2
Distribution Board 1kV - 3 way	7	7	0

Distribution Board 1kV - 2 way	2	1	1
Jumbo Flygt Pump Starter 1kV	9	2	7
Jumbo Starter 1kV	6	0	6
Flygt Pump Starter 1kV	9	7	2
Primary Fan Starter	3	3	0
Secondary Fan Starter 1kV	14	4	10
Mono Pump Starter	10	5	5
Transformer Panel (<5kVA)	6	2	4
Scraper Starter	1	0	1
Primary Vent Status Panel	1	0	1
Vent Warning Panel	1	0	1
Booster Fan Panel 1kV	1	0	1
Comms Booster	5	2	3
AutoMine/MineGem Teleremote Panel	2	0	2
Refuge Chamber - 20 person	2	1	1
Refuge Chamber - 16 person	4	1	3
Refuge Chamber - 15 person	1	1	0
Refuge Chamber - 12 person	2	2	0
Refuge Chamber - 4 person (portable)	2	1	1
Cribroom UG	1	1	0
Portable Toilet	1	0	1
Electrical Workshop	1	1	0
Mechanical Workshop	1	1	0
Coax cable and Acc	1	0	1
Batch Plant	1	1	0
Lighting Plant	2	0	2
Compressor	4	2	2
SatStat 2500l	1	0	1
Secondary Fan - 110kW twin stage	0	0	0
Secondary Fan - 90kW twin stage	0	0	0
Secondary Fan - 90kW single stage	6	3	3
Secondary Fan - 55kW twin stage	1	0	1
Secondary Fan - 55kW single stage	1	0	1
Secondary Fan - 45kW single stage	2	0	2
Primary Fan - 110kW	4	2	2
Mono Pump - Mono 106, 110kW	3	1	2

Mono Pump - Netzsch 103, 55kW	5	4	1
Mono Pump - Mono 084, 55kW	2	0	2
Mono Pump - 90kW at Fish Tank	1	1	0
Mono Pump - Mono 088, 75kW	2	1	1
Flygt Pump - 37kW	1	0	1
Flygt Pump - 20kW	1	0	1
Flygt Pump - 5kW	1	0	1
Sulzer Pump - 35kW	3	0	3

Currently power to the Bulletin underground mine is provided by overhead power line from on-site gas-powered turbine generation and HV cable in a borehole to underground. Surface fans for Bulletin and Happy Jack North were powered by diesel gensets, as well as the Happy Jack North and Happy Jack South underground mines. These gensets were demobilised when the mines went into care and maintenance, and no high voltage power infrastructure is currently in place for Happy Jack North. The 11kV cable that fed the Happy Jack North underground mine remains in place and is serviceable.

No power infrastructure is currently in place for Happy Jack South.

This study has assumed the provision of electrical power for Happy Jack North and Happy Jack South underground mines, including surface ventilation fans, by overhead powerline from the main site powerhouse, which contains gas turbine and diesel generation sets. Power consumption has been assumed at unit cost of $0.14/kWh, based on gas turbine generation. Please refer to Section 12.3.2.

Power consumption for the base case underground mining plan was estimated at 3.4MW peak demand, with ramp up at the early stages and trail off once peak development is completed. With the greater activity levels the production case estimate for power consumption was 4.2MW at peak demand, with similar ramp up and trail off preceding and following the peak development period.

Consideration will be required as to the capacity of the powerhouse to service all site requirements with the addition of underground mining. It has been assumed that the overhead line to Bulletin has the capacity to also serve Happy Jack North and Happy Jack South underground mines. With the addition of underground mining to the demands placed by processing of mine ore and tailings in the treatment plant, with the inclusion of the Wiltails trommel, concentrator and BIOX plant under planned throughput loading, proper review of site power supply and reticulation will be required. Further commentary is contained in Section 12.3.2.

7.10.2 Drainage and Mine Dewatering

Currently the Bulletin and Happy Jack North mines are under care and maintenance.

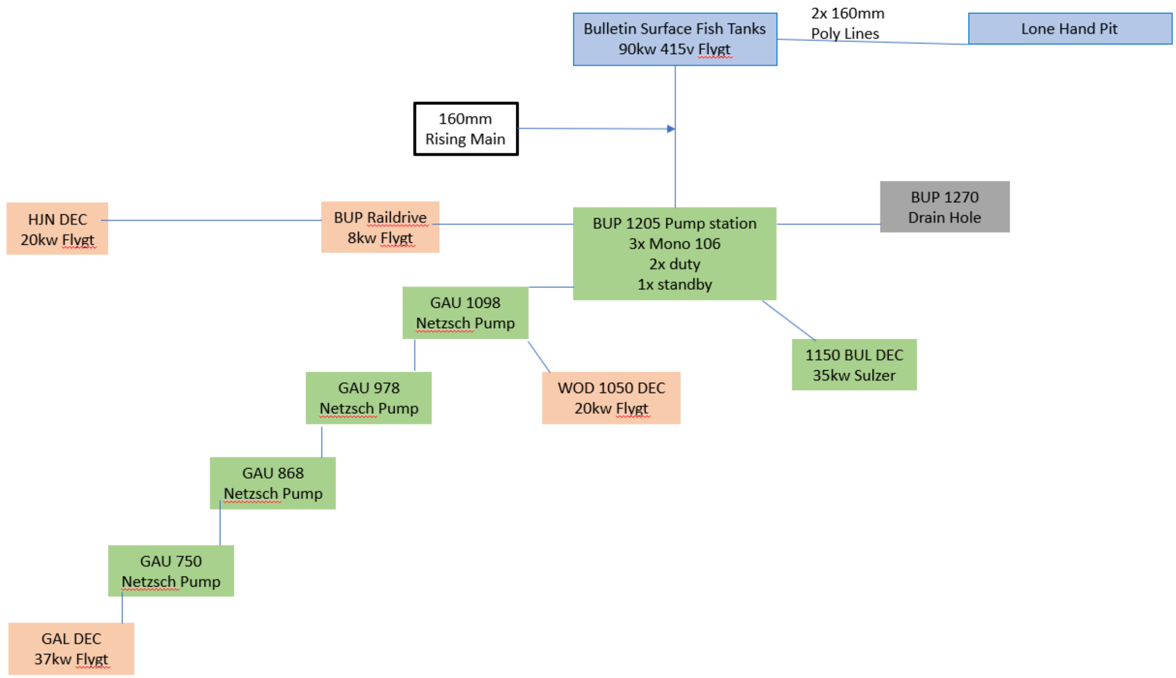


Figure 7-20: Care and Maintenance Dewatering System

There is a main pump station at 1205 Level with three WT106 Mono pumps (duty and standby pumps), with ~11l/s static groundwater inflow to the mine, plus service water during operation. Currently all three pumps are unserviceable, with an estimated combined repair cost of $70k, which has been allowed for in the capital costing. A hire pump is being utilised while the repairs are being carried out. These pumps deliver via a 150mm cased borehole to the fish tank on surface, which then stage-pumps to Lone Hand Pit. With discharge to the northern end of Lone Hand Pit, which has a large surface area, good sedimentation occurs, with clear water being reclaimed from the southern end of the pit and returned to the mine as service water.

Total static dewatering volumes from Bulletin/Happy Jack North mines is ~11l/s, or ~1Ml/day. Given that Lone Hand Pit has ~16Ml/vertical metre capacity there is significant surge capacity available during peak mine dewatering rates.

Excess water in Lone Hand Pit can be transferred to the evaporation pond south-west of East Pit if required.

During previous normal operations the mining contractor supplied and maintained all face pumps underground, and following administration these were removed. Under care and maintenance all face pumps currently underground at Wiluna Mining are hired, with no Flygt pumps in the mine being owned. For the resumption of underground mining a full suite of face pumps to meet the mine's needs at Bulletin, Happy Jack North and Happy Jack South will be required.

The historic underground workings below East Pit were accessed by shaft, and the more recent mechanised workings accessed by decline, which all lie to the south of Happy Jack South Decline, are currently flooded to ~1370mRL. The northern extents of the historic shaft workings are suspected to closely approach the planned Happy Jack South underground workings, which comprise Zone 1 in the mine plan.

Given the uncertain extent of the historic workings, careful management of the hazard presented by stored water underground will be required. Following risk analysis, detailed procedures will be required to effectively manage this risk.

Detailed design of development and stoping voids will be required prior to commencement of development towards the historic East Lode workings.

The static groundwater inflow to East Pit and the old underground workings is ~30l/s.

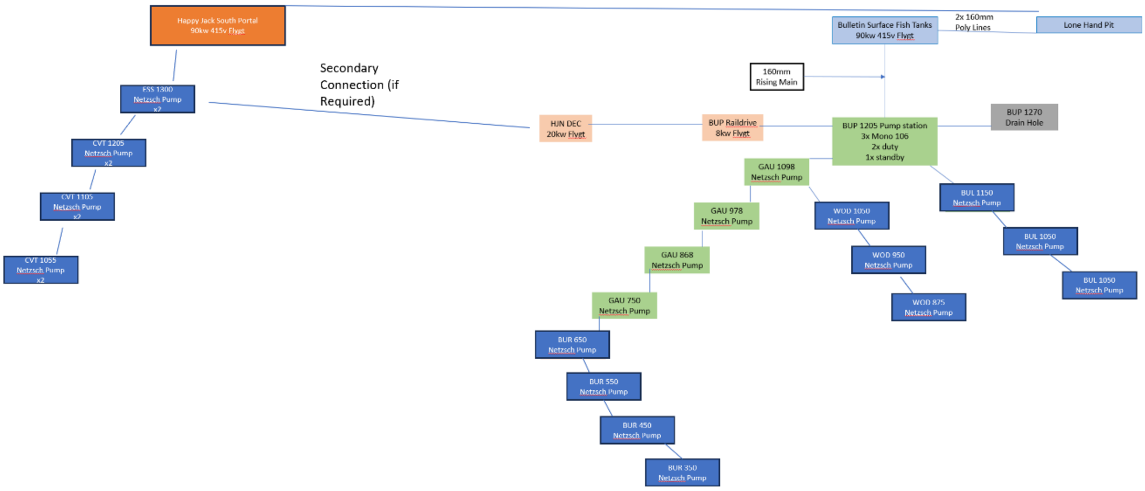


Figure 7-21: Planned Mine Dewatering System

No pumping infrastructure is currently in place for Happy Jack South pit or underground, with water levels immediately below the portal.

7.10.3 Mine Ventilation

7.10.3.1 Ventilation arrangement during previous operation and care and maintenance

A fully operational ventilation system had been in effect during operations immediately prior to administration and then care and maintenance. This comprised of 3 surface fans on Bulletin Raise (3 * twin 110kW secondary fans) and 3 fans on the Happy Jack North Raise (3 * single 110kW secondary fans). Surface fans had been installed at Happy Jack South but not yet put into operation. This combined arrangement was powered locally, from diesel gensets located adjacent to the raises. Under care and maintenance all surface fans have been removed, along with the gensets and electrical infrastructure.

In addition, 2 * 110kW booster fans were located in Golden Age Lower on 675 Level to service ventilation requirements of the lower levels. A single 90kW booster fan was located in Bulletin at 1170 Level servicing Bulletin workings. The booster fans at Golden Age Lower 675 Level and Bulletin 1170 Level currently serve as the primary ventilation fans during care and maintenance, providing enough airflow to enable maintenance and operation of the mine dewatering system.

7.10.3.2 Diesel fleet

Ventilation will be required to service the diesel equipment fleet as shown in Table 7-13.

Table 7-13: Diesel Fleet

Vehicle	Quantity	Total Airflow (m^3/s)	Component Airflow (m^3/s)
Haul Truck (63 tonne, 27m3 bucket)	4	142	36
Load Haul Dump ST14	3	45	15
2 Boom Electric Hydraulic Jumbo	3	4	6
Explosives Loading Truck	2	15	15
Drill, Boomer M20	2	2	6
Personnel Vehicles	1	5	8
Bolter Screener	1	3	6
Fuel Truck (10m3 Capacity)	1	1	9
Scissor Lift (3 Tonne Capacity)	1	1	6
Boom Lifter (0.5 Tonne)	1	2	6
Grader	1	2	5
Shotcrete Units	0	0	
Backfill Transmixer (7.1m3, drum)	0	0	
BackHoe Loader	0	0	
Spray Mech (30m3/h)	0	0	
Total	**20**	**223**	

7.10.3.3 Ventilation requirements

The ventilation arrangement in the mine is based on the peak diesel equipment fleet. These references §10.52 - Mines Safety and Inspection Regulations (1995), with minimum allowance of $0.05m^3/s$ per kW for engines that produce less than 1,500 ppm Carbon Monoxide and 0.06 m^3/s per kW for engines that produce more than 1,500pm.

7.10.3.4 Ventilation modelling

The existing VentSim model from site was used as the starting point for modelling purposes. This model was updated to include the planned development and stoping activities.

7.10.3.5 Ventilation Plan and Scheduling

The Bulletin, Happy Jack North and Happy Jack South decline portals will act as mine air intakes. Exhaust air will exit the mine via Bulletin Raise 1, Bulletin Raise 2, Bulletin Raise 3, and Happy Jack South Raise.

Primary exhaust fans will be located on Bulletin Raise 3 and Happy Jack South Raise. No primary exhaust fans will be required on Happy Jack North Raise.

The existing booster fans at Golden Age Lower 675 Level and Bulletin 1170 Level which currently serve as the primary ventilation fans during care and maintenance will be required to service the planned mining program in conjunction with the new primary fans for Bulletin Raise 3 and Happy Jack South Raise.

7.10.3.6 Fan Selection

The recommended fan is a single stage axial primary fan, mounted vertically on the Happy Jack South Raise. Specifically, this is a Clemcorp CC220/1.2 (single motor with variable frequency drive). This fan set up is shown in Table 7-14, below. The fan has a blade angle of 65°.

Table 7-14: Primary Fan Set Up

Airflow Qty (m^3/s)	Duty Fan Total Pressure (Pa)	Electrical Power (kW)	Efficiency
165	1465	324.8	79%

Utilising a variable speed drive on this can fan can save substantial amounts of money due to much greater efficiency of operation than the previous operation, which used secondary fans mounted over the raises.

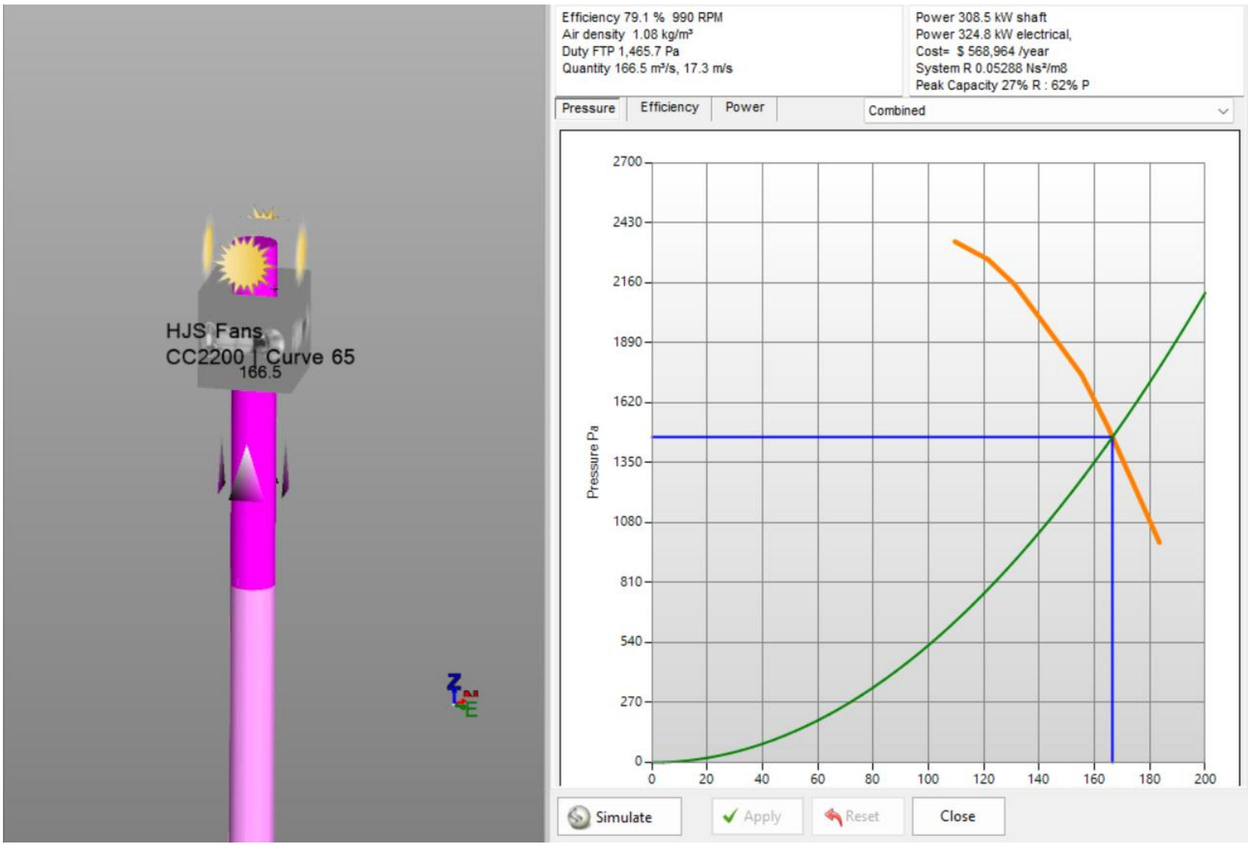


Table 7-15: Primary Fan setup

However, in the event of a procurement delay for primary fans the short-term ventilation duty for rehabilitation and initial development could be serviced by mounting secondary fans above the raise, however the normal bearings will require changeout with thrust bearings for vertical mounting, and fabrication of a mounting plate.

After Happy Jack South has been dewatered and the services reinstated, development of the parallel declines will occur toward Zone 1, with the haulage/access decline acting as the intake airway and the parallel decline being the return airway. The connecting drive between Happy Jack South and Essex Decline will act as the second egress for Happy Jack South.

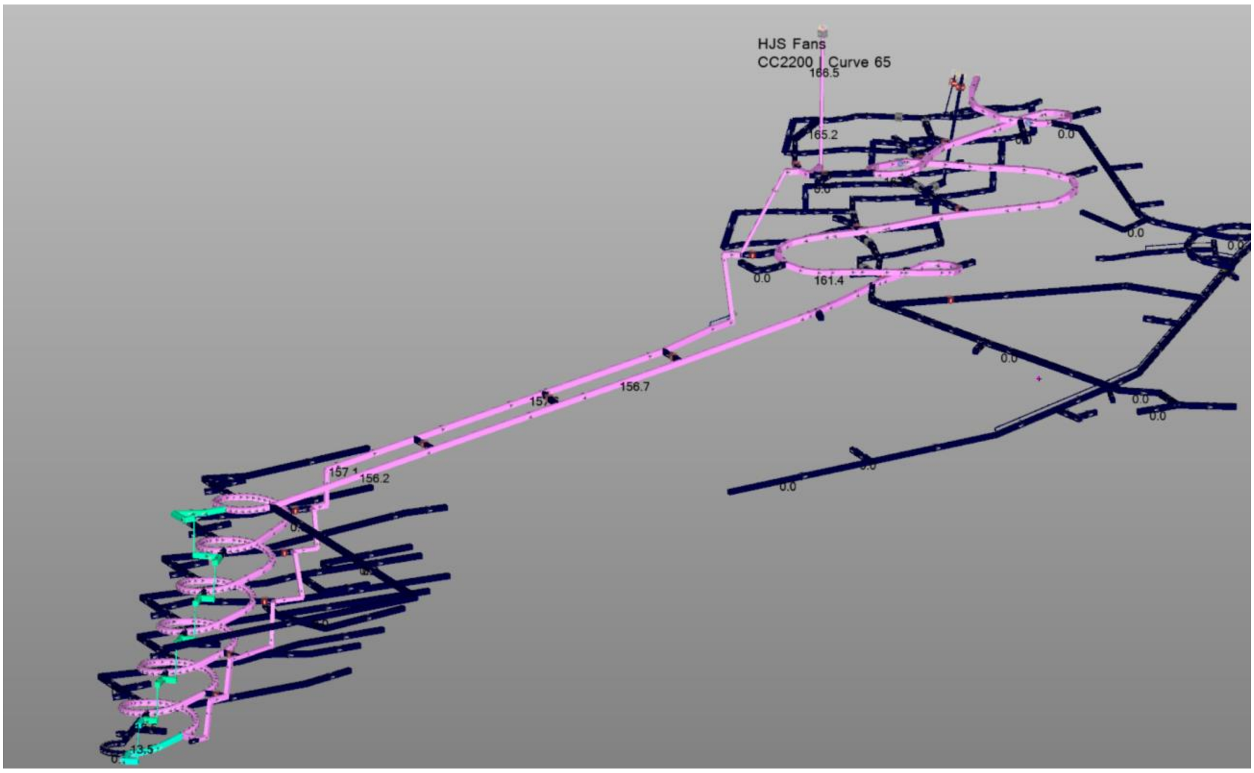


Figure 7-22: Happy Jack South

With the length of development run to establish a return vent circuit in the Golden Age Lower and Happy Jack South declines it will be necessary to purchase large twin stage 110kW secondary fans. Good management of vent duct condition will be necessary to ensure full airflows are achieved at furthest extent of the vent run. Deployment of heavy-duty vent duct such as Protan will assist in this regard.

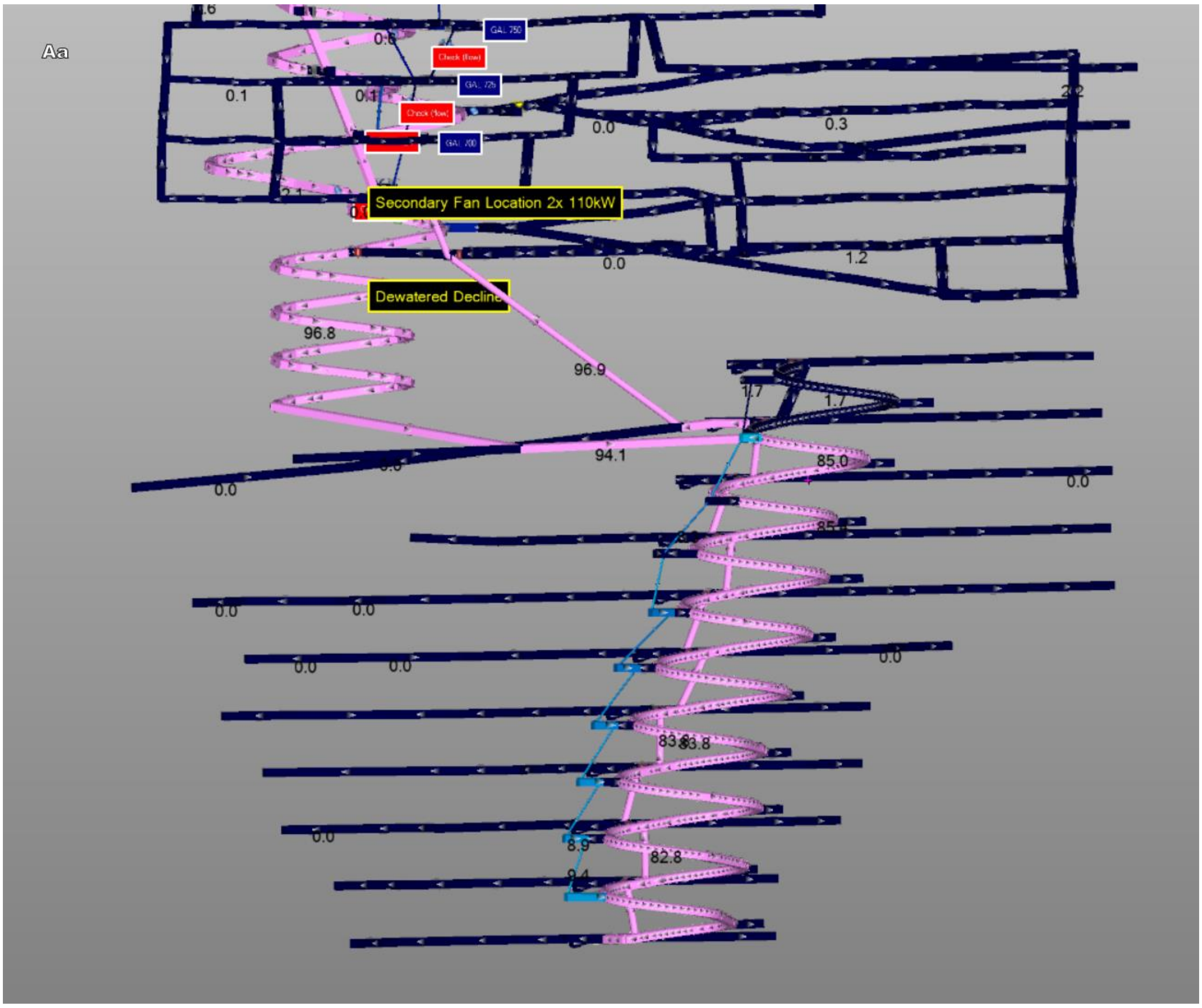


Figure 7-23: Golden Age Lower

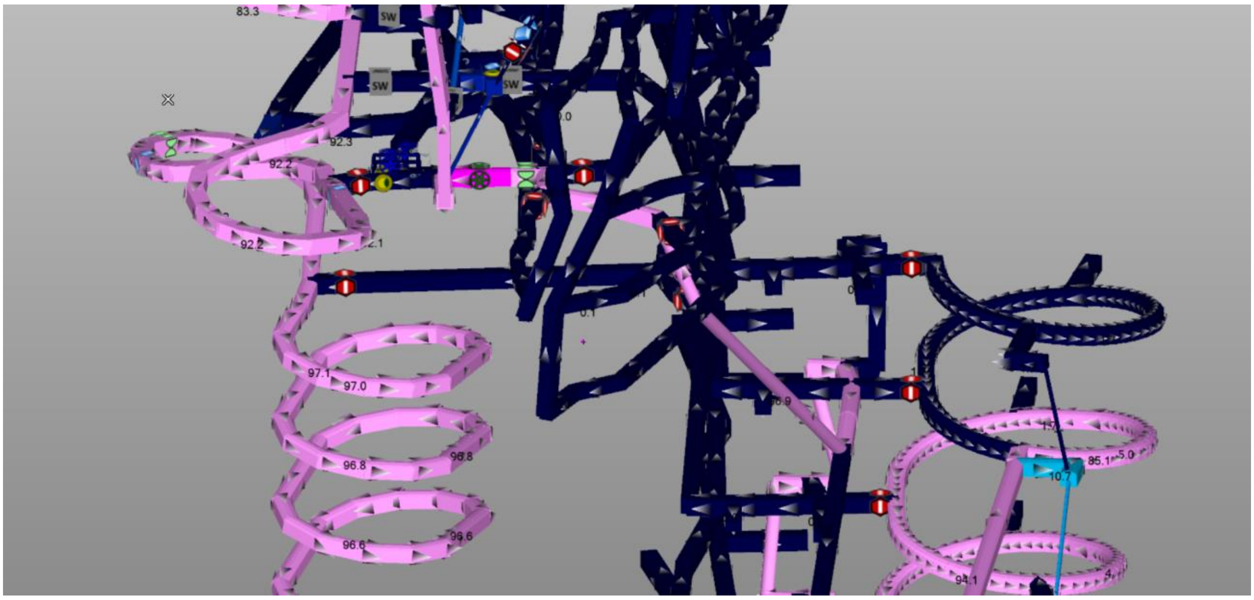


Figure 7-24: Golden Age Lower Fan Manifold

7.11 Capital Requirements and Costing

Budget costing has been obtained from Clemcorp of ~$600k each for the surface fans to service this duty. Note that this is the mechanical cost for the fan. Adding transformers, cabling, installation, and associated works (~$1.8 million). Although currently a competitor to Howden, Clemcorp and Howden previously held close collaboration. This fan identified and associated budget costing is reasonable for this instance.

Noting that VentSim is owned by Howden, and only contains Howden fan curves in the VentSim database, additional research may uncover a cheaper and more appropriate fan in this application.

7.11.1 Compressed Air

Compressed air requirements at Bulletin are met by two existing compressors located near the surface workshop. These have been retained in their current location during care and maintenance to service refuge chambers underground.

Two additional compressors have been stored on surface and will require installation as part of deployment at Happy Jack to service future underground operations at Happy Jack North and Happy Jack South.

7.11.2 Mine Service Water

Previous underground mining operations were serviced from header tanks on surface, which were supplied by return water from Lone Hand Pit, which is saline.

The return pump at Lone Hand Pit, header tanks at Bulletin and Happy Jack, and underground reticulation systems remain in place.

7.11.3 Communications

During operations the mines were serviced by a two-way radio system through the underground workings, with three main channels and a line-of-sight channel.

The comms hut servicing Happy Jack North and Happy Jack South was disconnected and removed to storage under care and maintenance. Currently the two-way radio system services only Bulletin underground.

To resume underground operations there will be some expenditure associated with reinstalling the existing comms system. All leaky feeder cable and boosters in Happy Jack South have been inundated with flooding of the mine and will need to be replaced at an estimated cost of $100,000.

7.11.4 Magazines

Licensed surface magazine remains in place and in service.

Licensed underground magazine remains in place at Bulletin 1050, and in service. The overhead crane for handling bulk explosives is non-compliant, and requires replacement, at an estimated cost of $40,000.

7.11.5 Mine Offices, Muster Room and Changeroom

Offices for mine management, technical services and contractors are located at the main office area adjacent to the treatment plant, as well as changerooms servicing all work groups.

Prior to administration the underground mining muster room was located here also, however as the muster room was hired it was removed by the owner during administration and will need to be replaced. Options for hiring or buying a muster room should be investigated. Cost for purchase and installation of a replacement muster room is estimated at $238,000.

In the event that concurrent underground and open pit mining activity occurs, no allowance has been made for additional muster room capacity.

A significant inventory of office and technical equipment remains on site from operations prior to administration, including gas monitors, anemometers, digital cameras, self-rescuers and caplamps (for staff only – previously the contractor supplied their own), Sea Snake hole probe with camera, handheld radios, clinometers, plus a comprehensive inventory of survey equipment, including total stations, GPS, Hilti drills, CMS, drones etc.

With the mine now in care and maintenance, many software licences held during operations have been surrendered. These will need to be reinstated, which has been allowed for in the Owner's Costs.

7.11.6 Mine Workshop and Stores

The surface workshop at Bulletin, owned by Wiluna Mining, served the Bulletin, Happy Jack North and Happy Jack South mines prior to administration. This workshop includes areas for heavy vehicle, light vehicle and electrical maintenance, stores and washpad.

Minor equipment and tooling will be required for the workshop, and it has been assumed that the contractor will supply and own this.

Fixed plant maintenance is serviced from the main workshop at the treatment plant.

7.11.7 Fuel and Lubricant Storage

Infrastructure for the storage and dispensing of diesel fuel and lubricants is located adjacent to the Bulletin workshop area, which was in use prior to administration, and remains at this location.

Minor measurement and automation equipment will be required, for which an allowance of $50k has been included.

A SatStat underground fuel storage and dispensing system with 2 * 2500l pods is owned and held at the site on surface but has not been deployed underground during recent mining operations. Deployment of SatStat underground would incur additional cost to set-up in an approved area.

7.11.8 Concrete and Fibrecrete Batch Plant

There is a batch plant located at the mine, which is suitable for mixing structural concrete and fibrecrete.

Suitable crushed and screened rock for concrete and fibrecrete can be sourced on site.

7.12 Backfill

With fair to good ground conditions, previous underground mining operations utilised non-fill mining methods, and no current infrastructure for mine fill other than loose rock fill exists on site.

In the event that a mining method requiring fill is employed at Wiluna the mine fill infrastructure and delivery requirements will need to be designed, costed and scheduled.

Fill types which may be utilised are:

- Pastefill;

- Loose rock fill
- Cemented rock or aggregate fill

Introduction of a filling mining method which involves additional surface disturbance will require Mining Approval.

7.13 Mine Vehicles

All mobile mining equipment utilised during mining operations had been supplied by the mining contractor and were demobilised following administration.

Resumption of underground mining will require the full suite of mobile equipment, with anticipated numbers varying according to activity levels. It has been assumed for this study a contractor model will be utilised. Estimated numbers of different equipment types are shown in the table below, with timing to be governed by the demands of the schedule.

Table 7-16: Mobile Equipment List

Vehicle	Quantity
Light Vehicle - Wiluna Mining	5
Development Jumbo – 2 boom	4
Production Drill	2
Cabolt Jumbo	1
Loader – large	4
Loader – small	0
Truck - large	4
Charge-up Wagon - Dev	2
Charge-up Wagon - Prod	1
Spraymec	
Agi	
IT	3
Grader	1
Service Truck	1
Water Truck	1
Forklift	1
Light Vehicle - contractor	17
Crew Bus - 20 seater	1
Crew Bus - 10 seater	1
Stores Truck	1

Wiluna Mining owns two Automine panels suitable for teleremote and semi-autonomous operation of Sandvik loaders underground.

Wiluna Mining owns two ageing light vehicles – a Landcruiser twin cab ute and Landcruiser single cab ute – both of which would need to be replaced for resumption of mining. Light vehicles will be required for management, technical services, geology and survey, with 5 twin cab utes allowed for in capital and owner's maintenance costs.

7.14 Manning

Due to the relatively short mine life of ~4 years the operating model is based on all activity being carried out by a mining contractor. Prior to the mine entering administration Byrnecut Australia Pty Ltd had been carrying out all mining activities.

The general roster for different categories of personnel has been nominated as:

- Wiluna Mining staff – 8:6
- Contractor staff – 4:3
- Foremen and administrative staff – 8:6
- Underground operators and maintenance – 7:7
- Underground truck drivers – 14:7

The anticipated staffing and roster has been assumed to be similar to that operated immediately prior to administration.

Estimated numbers of personnel required for the resumption of underground mining activities are summarised in the table below.

Table 7-17: Personnel List

Designation	Roster	Total
Construction/Contract Manager		1
Underground Manager (existing)	8:6	1
Alt Underground Manager/Senior Engineer	8:6	1
Production Engineer	8:6	3
Drill and Blast Engineer	8:6	3
Planning/Scheduling Engineer	8:6	3
Geology Manager (existing)	8:6	1
Senior Mine Geologist	8:6	2
Mine Geologist	8:6	6
Senior Geotechnical Engineer	4:3	1
Geotechnical Engineer	8:6	2
Senior Mine Surveyor	8:6	1
Mine Surveyor	8:6	4
Project Manager	4:3	1
Mine Foreman	8:6	2
Training Coordinator	4:3	1
Trainer	8:6	2

Mine Control	8:6	4
Admin	8:6	2
Storeperson	8:6	2
Underground Supervisor	7:7	8
Jumbo Operator	7:7	16
Nipper	7:7	8
Loader Operator	7:7	16
Production Driller	7:7	8
Cabolt Operator	7:7	4
Charge-up Operator - Dev	7:7	8
Charge-up Operator - Prod	7:7	8
Truck Driver	14:7	15
Service Crew	7:7	12
Grader/Watercart Operator	7:7	4
Fibrecrete Sprayer (Provisional)	7:7	4
Agi Driver (Provisional)	7:7	4
Diamond Driller	7:7	8
Mobile Maintenance Manager	4:3	1
Mobile Maintenance Foreman	7:7	2
Fitter (budget 0.9/mobile equipment)	7:7	21
Electrical Supervisor	7:7	1
Electrician	7:7	5
Trades Assistant	7:7	4
Light Vehicle Fitter	7:7	4
TOTAL		203
Existing		2
REQUIRED ROOMS		**201**

Assumptions:

- Assumed numbers of mobile equipment, subject to confirmation from mine schedule
- Assumed 0.9 fitters total per piece of mobile equipment

7.15 Underground Mining Costs

7.15.1 Underground Mining Capital Costs

There is a significant inventory of electrical, pumping and ventilation equipment on site that is owned by Wiluna Mining. With the exception of essential equipment required underground for care and maintenance, almost all of this equipment is on surface, with some items off-site for assessment and repair.

The infrastructure equipment requirements for the mining program have been broadly estimated. Equipment available onsite and off-site for repair has been extracted from the site asset register, and the shortfall has been included in the inventory of capital equipment required for purchase.

As part of further studies more definitive costings for capital items will need to be obtained for a more accurate figure for capital requirements.

The muster room that was in use prior to care and maintenance was a hire unit, and has been demobilised from site by the building owner. A replacement building will be required, and capital for purchase, installation and kitting out has been included in the capital schedule.

Contractor mobilisation and establishment, and demobilisation have been including in capital estimates, based mainly on the Byrnecut contract in place prior to care and maintenance.

Costs have been allowed for escapeway excavation and supply and installation of ladderways, based on the mine development schedule. Combined cost of $4,850/m includes:

- Excavation cost has been obtained from the Byrnecut contract, which used Raising Australia as a sub-contractor
- Budget pricing from Wilshaw for supply and installation of ladderways

The overhead crane in the underground magazine is no longer serviceable and requires replacement, for which a capital allowance has been included.

A lump sum of $800,000 has been included for excavation and equipping of a pump station in the Golden Age Lower part of the mine. With the significant extra depth of mining, this was to reduce the vulnerability of the mine from a single pump failure if the dewatering pumps were daisy-chained in series. This should attract more detailed design and costing as part of any future study.

Capital has been allowed for purchase and installation of primary fans for Bulletin, Happy Jack North and Happy Jack South. There is currently an overhead powerline running from the powerhouse to Bulletin. Capital has been allowed for a spur line to the Bulletin and Happy Jack areas to enable direct power feed from the powerhouse, negating the requirement for local diesel gensets for all surface mine power and underground power at Happy Jack South.

Allowance has been included for high voltage switching and surface and underground reticulation, including substations and HV cables.

The mine's existing mine rescue equipment is ageing and due for replacement, as identified by site prior to the mine entering administration. Allowance of $284,000 is included for BG4 self-contained breathing apparatus, plus associated maintenance and repair gear.

The mine currently has two aging light vehicles which will require replacement. Five full mine-spec twin cab vehicles will be required, budgeted at $90,000 per vehicle.

Table 7-18: Summary Underground Capital Costs

(in '000s)	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Reserve Case	$ 16,160	$ 8,380	$ 4,819	$ 2,084	$ 222	$ 655	
Production Case	$ 16,160	$ 7,992	$ 4,810	$ 2,178	$ 524	$ 131	$ 524
Case3	$ 16,160	$ 7,992	$ 4,810	$ 2,178	$ 524	$ 655	

There is no difference in the total projected capital expenditure between the three cases considered. Where the differences lie is in timing of the expenditure – with the Production Case having access to Inferred material occurring at the back end of the schedule there are some delayed activities, and the demobilisation is deferred.

7.15.2 Underground Mining Operating Costs

Underground mining operating costs have been derived from analysis of the Byrnecut Contract actual costs for May and June 2022. At this time the underground mine was producing between 47k to 60k ore tonnes/month (at an annualised rate of 570kpa to 770ktpa) and between 660-695m of Lateral Development (inclusive of Capital Stripping m equivalent).

Fuel usage was derived from a first principles estimate based on diesel equipment used in the mine and checked against actual fuel usage from the non-generator usage from the Bulletin Diesel Tanks. Non-diesel usage at Bulletin totalled 135kl and 147kl for May and June, while the first principle estimates totalled 143kl/month. Fuel costs were not part of the Byrnecut contract and were added to the relevant activity based on the equipment numbers assigned to each activity.

Activities were designated as follows:

- Development
- Production
- Mine Services - Pumps
- Electrical
- General
- Haul - Grader
- Mine Services - IT
- Load
- LV (Light Vehicle)
- Chargeup
- Haul - Truck
- Mine Services - Trucks
- Vent
- Overheads
- Mechanical (Un-allocated)
- Labour (Un-allocated)
- Mine Services (Un-allocated)

The costs as supplied were grouped as follows:

- Ownership Cost
- Mechanical Costs
- Wages - Fitters
- Stock
- Site Costs
- Labour Costs

After accumulation by activity and cost group, and with the addition of Corporate overhead and Profit margin of 3% and 7.5% respectively, the total, fixed and variable unit costs were calculated based on the physicals mined/developed in the month. No attempt was made to split the development costs into capital and operating as there was no basis supplied in the costs, only a split of the development type in the physicals. The costs are summarised in Table 7-19.

Table 7-19: Summary Underground Operating Costs (Contract) (Production Case)

Item	UOM	Amount (Variable)	Amount (Fixed)	Amount ($/t ore)
Development	$/m	$4,656		$47.27
Stope Drilling	$/m drilled	$89.30		$20.17
Bogging/Loading	$/t material	$9.26		$13.42
Hauling	$/t.km	$2.02		$21.36
Overheads / Owners Cost	$pa		$101,220,000	$51.79
Mine Services	$/t ore	$4.30		$4.30
Total (Excl Dev.)	**$/t ore**			**$111.0**
Total (Incl Dev.)	**$/t ore**			**$158.3**

7.15.3 Underground Mining Owner's Costs

In addition, Owner's Costs have been calculated based on the following:

- Staff salaries plus assumed on-costs of 60%, including construction/contract management
- Electrical power for mining operations (based on power from gas turbine generation at $0.14/kWh)
- Mine design software purchase and maintenance/support costs as per schedule
- Light vehicle maintenance (assumed at $1,500/month)

Table 7-20: Summary Underground Mining Owner's Costs

(in '000's)	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Reserve Case	$ 50,315	$ 8,507	$ 12,832	$ 12,824	$ 12,094	$ 4,058	
Production Case	$ 62,368	$ 8,776	$ 13,309	$ 13,546	$ 13,146	$11,727	$ 1,866
Case3	$ 56,818	$ 8,776	$ 13,309	$ 13,546	$ 13,146	$ 8,042	

The owner's costs are all time dependent, and with the varying durations of the mining program between the cases the owner costs vary accordingly.

Based on the mining, process and general and administrative (G&A) costs outlined above, and considering the realised gold price along with royalties, refining charges and transportation costs, the cut-off grade (COG) for mining was calculated as 2.6 g/t. I.e. at $2,880/oz, this is $241/t which for the purposes of this study, approximately covers all mining and treatment costs. This was the beginning of an iterative process. Future calculations should take into account metallurgical recoveries and any increase in gold price.

8 TAILINGS RE-MINING (WILTAILS)

8.1 Introduction

The Wiluna tailings consist of tailings produced during previous operations that are stored in pit voids or tailings storage facilities. A PFS was completed for tailings retreatment by Blackham Resources in 2019 which considered a total of 32.8 Mt at 0.57 g/t Au to be mined. This included all the pit voids as well as TSF West, TSF H, TSF C Upper and TSF C Lower.

Mining One has only considered remining and processing only the tailings storage facilities in this study, as the pit voids may not have dewatered sufficiently to allow mining by excavator and transport by truck.

Tailings processing uses a drum scrubber followed by a slurry pump to deliver the slurry to the CIL plant. The scrubber was commissioned in October 2023 and has been operating since then (Figure 8-1). This follows a three month trial of tailings processing from March to May 2023 through the mill, which confirmed the recovery assumptions for TSF West.

Figure 8-1: Wiltails feed system to CIL plant (TSF Western Cell in the background)

8.2 Geotechnical and Slope Design

A geotechnical study was undertaken by Knight Piésold Pty (KP) in 2021 (Appendix G3) and Mining One was provided with geotechnical design criteria for slope designs for the Western Cell

TSF and TSF H (Table 8-1). TSF C does not require similar design requirements as the whole TSF is planned to be reclaimed.

Western Cell TSF shares a common embankment with TSF C and TSF H shares a common embankment with TSF J, requiring an extraction strategy that considers the short and long term stability of the common embankments.

Table 8-1: Recommended geometry in Western Cell and TSF H

	Western Cell	TSF H
Maximum bench height, m	4	4
Bench face angle	30 deg (1V:7H)	30 deg (1V:7H)
Inter-Ramp face angle	10.3 deg (1V:5.5H)	10.3 deg (1V:5.5H)
Overall slope angle	10.3 deg (1V:5.5H)	10.3 deg (1V:5.5H)

A slope design for the Western Cell was provided. For TSF-H, however, a new slope design was created aligned with the historical design.

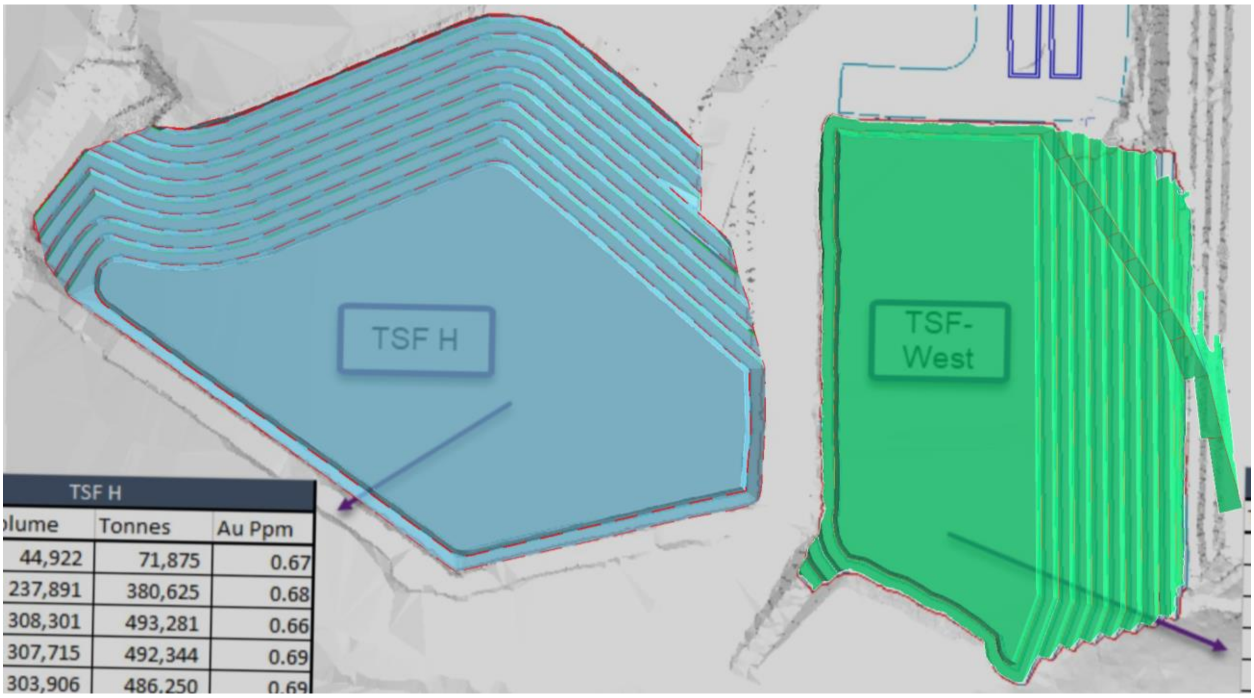


Figure 8-2: Western Cell and TSF-H Slope Designs

A trafficability study was undertaken by Knight Piésold (2022) by conducting a load bearing assessment of the TSF's (TSF H and Western Cell). For the majority of locations and depths, the Factor of Safety (FOS) were >1.9, well above 1.5 FOS requirement. Where the in-situ undrained shear strength falls below FOS 1.5, strategies have been recommended for the wheeled equipment (Trucks, Grader, FEL). This does not apply to the excavators, with the FOS well in excess of 1.5 for all materials.

8.3 Mining

Trial mining of TSF Western Cell was undertaken for 3 months from March to May 2023 (inclusive).

Wiluna are currently reclaiming TSF Western Cell using a fleet of 40t 6x6 wheel drive Articulated Trucks, loaded by either 50t Doosan backhoe configured excavators or 80t Doosan backhoe configured excavators Support equipment includes a dozer, water truck and grader. See Figure 8-3, below.

Figure 8-3: Wiltails - TSF Western Cell Tailings Reclamation – Excavator and Trucks

Mining is conducted in 2.5m flitches. No problems have been encountered to date with equipment sinking or bogging in the relatively soft tailings material.

The current mining of TSF Western Cell involves a short haul to the base of the TSF where the reclaimed tailings are dumped on the ROM pad (Figure 8-4). This allows for blending with other materials (currently historic reclaimed heap leach stacks) before being reclaimed by a Front End Loader (FEL) and fed into a hopper before being conveyed into a scrubbing trommel.

Figure 8-4: Wiltails - TSF Western Cell Tailings Reclamation – Haulage route from Mining Face to ROM Dump and Rehandle into Trommel

8.4 Schedule

A top-down quarterly target schedule of all the TSF material available in the historic TSFs has been developed in MineSched™ software for the tailings reclamation, based on the following sequence:

- TSF Western Cell;
- TSF H;
- TSF C – Upper; and
- TSF C – Lower.

The schedule was assumed to start in January 2024 and complete in January 2032 (32 periods) The total targeted material movement amounted to 25,179 kt. The production rate was limited to a maximum of 800 kt per quarter, except for the first two quarters of 2024, during which the production target was set at 650 kt.

Table 8-2: TSF Reclaim Total Available Material

Stage		Total Tonnes, kt	Au g/t	Contained Au Ounces, oz
Stage-1	Western Cell	1,612	0.67	34,487
Stage-2	TSF H	3,818	0.67	82,346
Stage-3	TSF C Upper	7,137	0.60	138,798
	Western Cell	52	0.60	1,006
Stage-4	TSF C Lower	11,558	0.45	168,141
	Western Cell	1,002	0.65	21,009
	Total	**25,179**	**0.55**	**445,786**

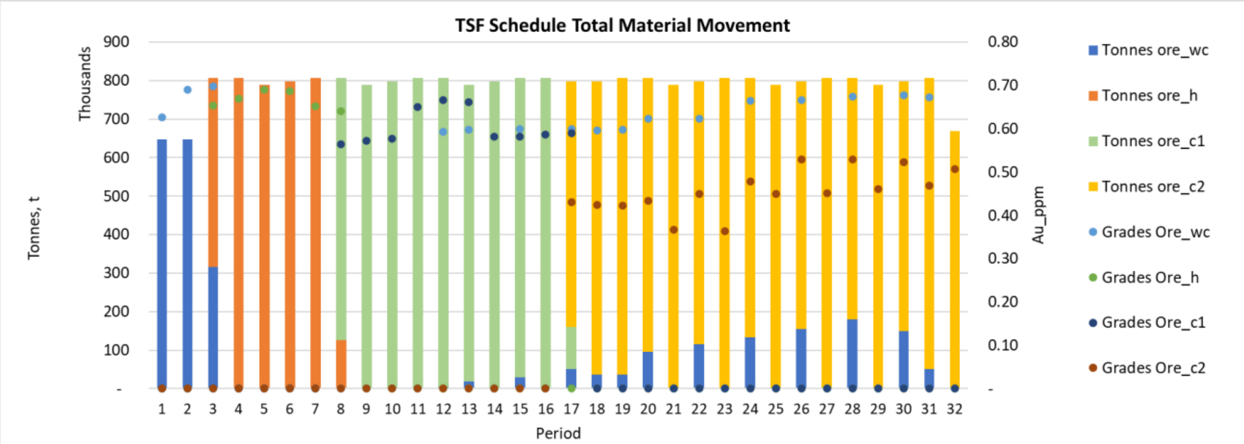


Figure 8-5: TSF Schedule Material Movement by Period

In addition, Mining One has estimated 260kt of the Western Cell TSF will be treated in November and December 2023, bringing the total available inventory to 25,443kt.

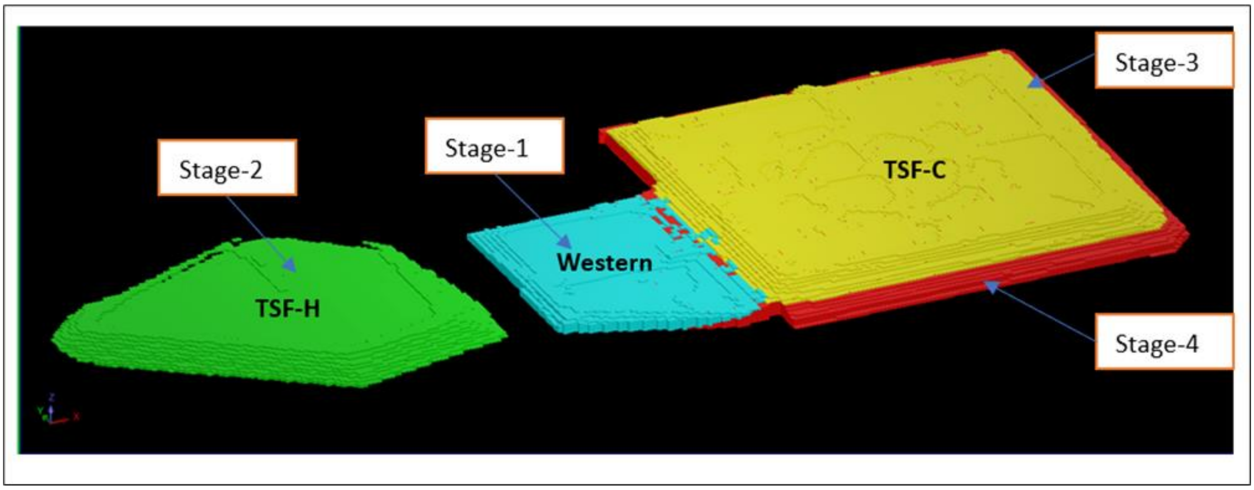


Figure 8-6: TSF Schedule Stages

8.4.1 TSF Western Cell

Initially, TSF Western Cell is constrained by a design that incorporates the geotechnical recommendations outlined by Knight Piésold (KP, 2021). The eastern bank is designed to remain in place until the upper part of TSF C is mined, then the remaining wedge of TSF Western Cell is taken with TSF C lower. Total tonnes of the Western Cell is 2,666 kt with TSF Western Cell classified as an Indicated Mineral Resource and considered a Probable Ore Reserve.

8.4.2 TSF H

The TSF H cell is constrained by a design Mining One generated that incorporates the geotechnical guidelines outlined by Knight Piésold (KP, 2021). TSF H is planned to be mined in a top-down sequence. The total tonnes of TSF-H available are 3,818 kt, classified as an Indicated Mineral Resource and considered a Probable Ore Reserve.

8.4.3 TSF C

There are not constraints for TSF C Cell and it is planned to be mined in a top-down sequence. TSF-C total tonnes available are 18,695 kt.

TSF C is classified as Indicated Mineral Resource and is considered as a Probable Ore Reserve.

8.5 Ore Reserve

An Ore Reserve has been prepared for the Wiltails reclamation, involving portions of the following TSF's:

- TSF Western Cell;
- TSF H;
- TSF C – Upper; and
- TSF C – Lower.

In the Ore Reserve case, only the portion of the reclaimed tailings that is mined, processed and re-deposited as tailings in the new TSF, together with Ore Reserves for open pit and underground is considered.

The Ore Reserve has a strike date of 01/11/2023, based on a survey pickup at that time. This total differs slightly from the total evaluated in the financial and economic analysis, which commences from 01/01/2024.

The Wiltails Tailings Ore Reserve Estimate is provided in Table 8-3.

Table 8-3: Wiltails Tailing Ore Reserve Estimate

		COG*	Tonnage (kt)	Au g/t	Contained Au oz	Recovery	Recovered Au oz
Proved			-	-	-	-	-
Probable	Western Cell	0.0	2,730	0.65	57,350	48.9%	28,040
	TSF H	0.0	3,818	0.67	82,350	48.9%	40,270
	TSF-C Upper	0.0	7,137	0.60	138,800	43.1%	59,820
	TSF C Lower	0.0	9,277	0.44	132,320	39.3%	52,000
Total		**0.0**	**22,962**	**0.56**	**410,820**	**43.2%**	**180,130**

*No cut-off has been applied as the entire volume of historic tailings dams are intended to be mined and treated.

All Probable Ore Reserves are based on Mineral Resources classified as Indicated.

There are no Inferred Mineral Resources included in the schedule. None of the Probable Ore Reserves have been derived from Measured Mineral Resources.

For further details, refer to Table 1, Section 4 in Appendix A.

8.6 Production Target

For the Production Target case, an additional 1,636kt (200kt Western Cell, 1,436kt TSF C Lower) of Indicated Mineral Resource is scheduled, for a total inventory of 24,598kt at 0.55g/t (Table 8-4), as at 01/11/2023.

For evaluation as part of this PFS, starting at 01/01/2024, the total inventory scheduled is 24,334kt at 0.55g/t Au. The difference is the material estimated to be treated between 01/11/2023 and 01/01/2024 (November and December, 2023).

The Production Target estimate is based on Indicated Mineral Resources.

Table 8-4: Wiltails Tailings Production Target Estimate

		COG*	Tonnage (kt)	Au g/t	Contained Au oz	Recovery	Recovered Au oz
Proved			-	-	-	-	-
Probable	Western Cell	0.0	2,930	0.65	61,690	48.9%	28,040
	TSF H	0.0	3,818	0.67	82,350	48.9%	40,270
	TSF-C Upper	0.0	7,137	0.60	138,800	43.1%	59,820
	TSF C Lower	0.0	10,713	0.45	155,050	39.3%	52,000
Total		**0.0**	**24,598**	**0.55**	**437,890**	**43.0%**	**191,190**

*No cut-off has been applied as the entire volume of historic tailings dams are intended to be mined and treated.

8.7 Tailings Reprocessing

The newly constructed scrubber circuit reclaims historic tailings for reprocessing.

The list of historic tailings estimated as available for retreatment from 01/01/2024 is provided in Table 8-5. Leach test work was conducted on each of the deposits, with the average leach extraction of 42%.

Table 8-5: Tailings Storage Facilities with Tonnes, Grade and Recovery

Deposit	Tonnes (kt)	Au Grade (g/t)	Recovery (%)
TSF Western Cell	2,666	0.65	48.9
TSF H	3,818	0.67	48.9
TSF C Upper	7,136	0.60	43.1
TSF C Lower	11,558	0.45	39.3
Total	**25,179**	**0.55**	**42.1**

8.8 Tailings Re-mining Costs

8.8.1 Capital Costs

There are no additional capital cost requirements for tailings re-mining. The reclaim scrubbing trommel plant and associated materials handling infrastructure has recently been completed (2023).

Sustaining capital of 5% of mining operating cost has been applied to cover mining equipment costs.

8.8.2 Operating Costs

The operating costs for the tailings re-mining assumes the following:

- 2024 – 2024 Budget costs, based on 2023 operating costs
- 2025/2025+ - Shared overhead and ancillary equipment with Open Pit mining
- 2030/2030+ - Shared overhead in conjunction with Underground mining

The estimated costs are summarised in Table 8-6.

Table 8-6: Tailings Re-claim Operating Costs

Item	UOM	Cost
2024	$/t	$5.97
2025-2029	$/t	$2.47
2030 +	$/t	$4.95

8.9 Approvals

Mining of the Western Cell TSF has received government approval.

An approved Project Management Plan (PMP) exists which covers the existing mining operations, including:

- Tailings reclamation from the Western Cell TSF
- Conventional Processing to 2.2Mtpa
- Deposition and storage of tailings in TSF K to 518.5mRL.

Mining Proposals are required for the mining of tailings from TSF C and TSF H, and ongoing treatment of tailings.

- Engagement with regulators has commenced, and compilation of a Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities. This proposal includes an increase in production rate from 2.2 to 3.2Mtpa.

The Wiluna Mining Corporation is currently subject to Deed of Company Arrangement (DOCA).

Approvals for bore pumps and extension of overhead powerlines and discharge pipelines at the Eastern borefields, require a Mining Proposal and Heritage Clearance remains outstanding.

9 PROCESSING

9.1 Introduction

In 2021, Wiluna constructed and commissioned a new flotation circuit as part of the Stage 1 upgrade to produce a gold-bearing concentrate. The flotation circuit was designed to treat 0.75 Mtpa of sulphide ore. The circuit operated for most of 2022.

In 2022, Wiluna completed a Stage 2 Feasibility Study and a Stage 3 Pre-Feasibility Study, which proposed increasing the throughput of sulphide flotation from 0.75 to 1.50 Mtpa and then constructing a pressure oxidation circuit for onsite processing of the concentrate. The overall project NPV for both studies was negative.

For this PFS, different throughputs and flow sheets were reviewed considering the revised mine plan but concluded that doubling the throughput and installing a pressure oxidation circuit was still not economically viable. The capital costs of increasing the throughput and constructing a pressure oxidation circuit were significant and would not be offset given the lower grades in the revised mine plan.

Considering that Wiluna already had a BIOX circuit, the BIOX circuit was reviewed and found to have favourable economics at a sulphide throughput of 0.75 Mtpa. The existing crushing, grinding and flotation circuits would recover a sulphide concentrate that would be oxidised by the BIOX circuit before leaching and gold recovery to produce gold doré. Concurrently historic tailings would be retreated through the scrubber and leach/adsorption circuit to supplement gold production.

9.2 Process Review

As part of the process review, operating data from the 2022 sulphide flotation campaign and available data from the historic BIOX operation were reviewed, as was the recent campaign reprocessing Western Cell tailings through the existing grinding circuit.

Considering the extensive operating data available, no additional test work was conducted as part of this PFS, however, BIOX variability test work is planned for the next stage of study to update and confirm expected performance.

9.2.1 Tailings Reprocessing

The test work from Wiluna's 2019 WilTails PFS was previously reviewed and discussed in Mining One's Value Optimisation Study[8]. The operational data from the recent campaign is presented below.

With the construction of the new scrubber being finalised in the second half of 2023, a campaign of tailings from the Western Cell TSF was processed through the existing grinding circuit from March to May 2023. The reconciled data is presented in Table . The feed grade was higher than the modelled inventory of 0.65 g/t for the Western Cell, with recovery in line with the test work.

[8] 5350_M_7689_Final, Wiluna Value Optimisation Study, Mining One, April 2023.

Table 9-1: Reconciled Tonnes, Grade and Gold Recovery from Western Cell Tailings

		March	April	May
Milled Tonnes	dmt	99,910	78,742	95,953
Feed Gold Grade	g/t	0.92	0.80	0.89
Gold Recovery	%	48.0	48.8	47.5

9.2.2 Flotation

The flotation test work from Wiluna's 2019 Stage 1 PFS and 2022 Stage 2 FS were previously reviewed and discussed in Mining One's Value Optimisation Study. Operational data was also reviewed but was limited to the second half of the year as that was the data that was available for the Value Optimisation Study. Data for the first half of the year was provided for this PFS and the full year dataset reviewed.

As discussed in the previous report, the models developed by WMC from the flotation test work were not found to be reliable predictors of performance for mass recovery, concentrate gold grade and concentrate arsenic grade as a function of feed gold grade. The model for feed gold grade to gold recovery was reasonable.

The feed gold grade to gold recovery data is presented in Figure 9-1 and compared to the WMC modelled curve. The daily data is scattered but generally follows the WMC modelled curve from the flotation test work, with the monthly reconciled data aligning reasonably with the modelled curve. The WMC modelled curve was trimmed to the inflexion point and an equation of fitted as below, where Au is the feed gold grade in g/t.

$$Flotation\ Au\ Recovery = \begin{cases} -2.908Au^2 + 24.18Au + 37.882 & if\ Feed\ Au\ Grade < 4.5 \\ 88.57 & if\ Feed\ Au\ Grade > 4.5 \end{cases}$$

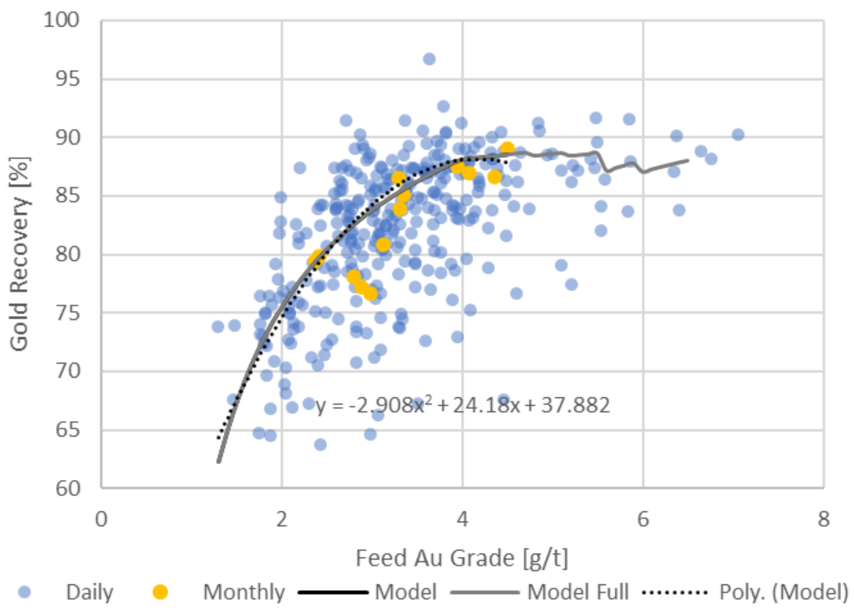


Figure 9-1: Daily and Monthly Reconciled Gold Recovery to Feed Gold Grade for 2022

The mass recovery data is presented in Figure 9-2, with the previous WMC model shown for comparison. The data did not follow the previous model, but rather followed a general linear trend. Hence, mass recovery was modelled linearly as below.

$$Flotation\ Mass\ Recovery = 0.8852 \times Feed\ Au\ Grade + 0.7963$$

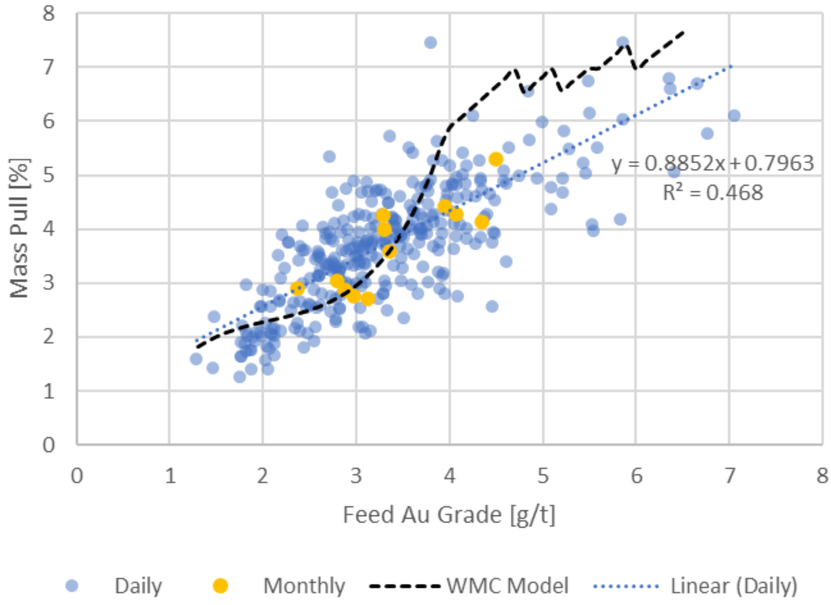


Figure 9-2: Daily and Monthly Reconciled Mass Recovery to Feed Gold Grade for 2022

Given there are models for mass recovery and gold recovery and considering that the previous WMC model for concentrate gold grade was not accurate, no model for concentrate gold grade was required. Instead concentrate grade is calculated based on the mass and gold recoveries. Furthermore, for BIOX operation, concentrate sulphide sulphur grade is a more important parameter than concentrate gold grade as it is the sulphide sulphur that is oxidised.

For the concentrate arsenic grade, the WMC model as a function of feed gold grade was not a reliable predictor. Instead, a model as a function of feed gold to arsenic ratio was developed as shown in Figure 9-3. This aligns with the Stage 2 test work that found that a gold to arsenic ratio >12 was required to consistently produce concentrate <6,500 ppm.

$$Concentrate\ As\ Grade = 0.2484 \times Feed\ Au\ Grade\ /\ Feed\ As\ Grade + 9.8508$$

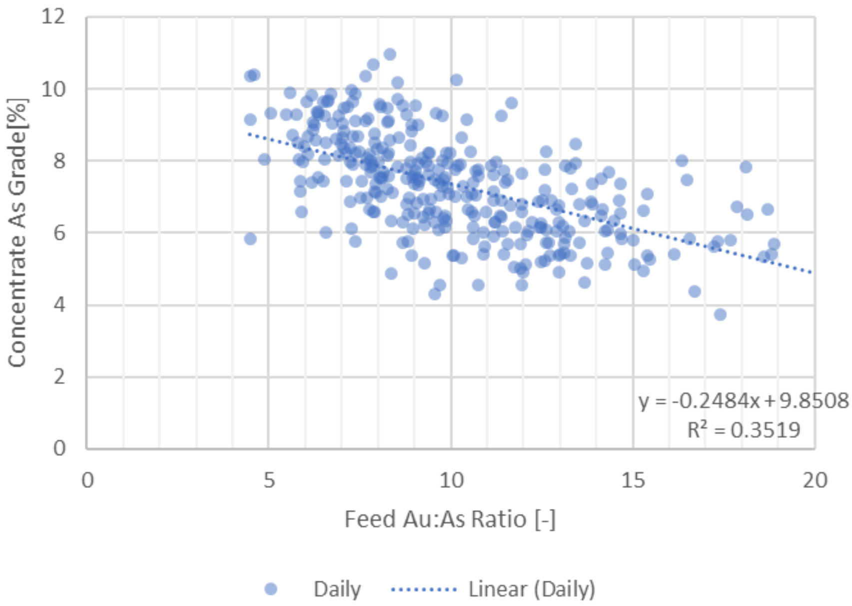


Figure 9-3: Daily Concentrate Arsenic Grade to Feed Gold: Arsenic Ratio for 2022

For the concentrate sulphur grade, the 2022 data typically varied between 17 and 25%, with no obvious correlation. It was noted that there was an issue with the ELTRA carbon/sulphur analyser from June and that the sulphur assays were recorded by a portable XRD after that. Even then, the data for the first half of the year did not show a clear correlation. However, a simple linear regression as a function of feed sulphur grade was modelled as a general trend for concentrate sulphur grade, noting the relatively low sensitivity of concentrate to feed sulphur grades. The concentrate grades for 2022 exceeded 15% sulphur and are suitable for BIOX treatment.

$$Concentrate\ S\ Grade = 1.3937 \times Feed\ S\ Grade + 20.323$$

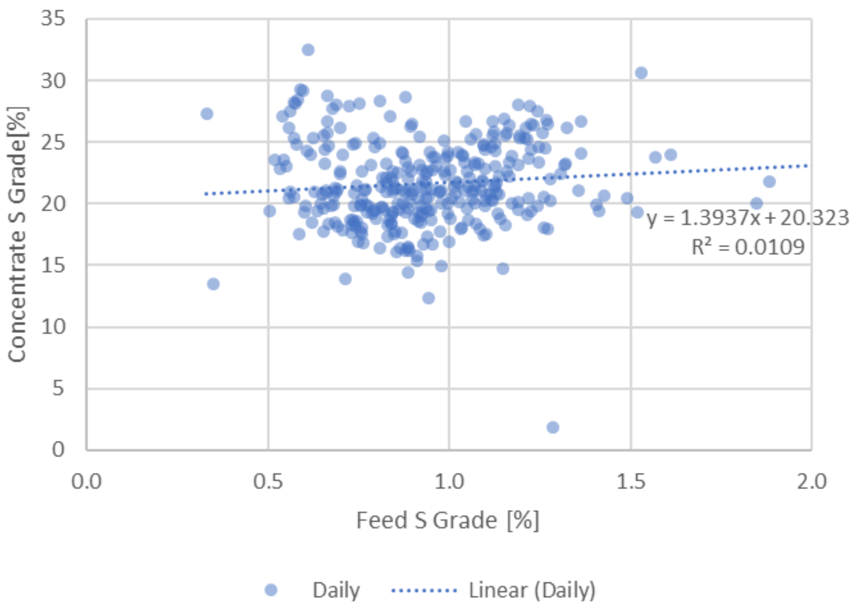


Figure 9-4: Daily Concentrate Sulphur Grade to Feed Sulphur Grade for 2022

Grinding circuit operation was also reviewed. Throughput was ramped up quickly and exceeded nameplate of 62.5 kt/month (750 kt/year) by March 2022. With the exception of April, which had a toll treatment campaign, throughput exceeded nameplate capacity in each month.

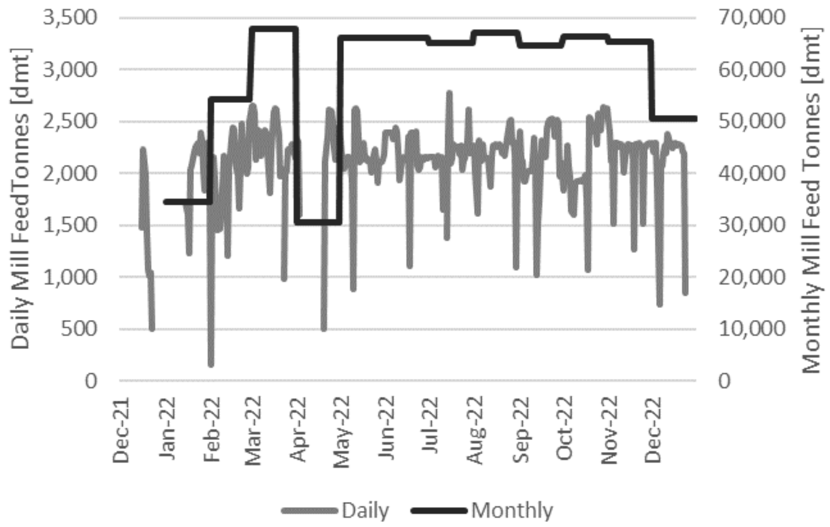


Figure 9-5: Daily and Monthly Mill Feed Tonnes Treating Sulphide Ore

The grind size P_{80} typically ranged between 80-100 µm as shown in Figure 9-6, which is coarser than the target P_{80} from the previous BIOX operation of 75 µm. The coarser grind size could result in a slower sulphide oxidation rate and lower oxidation extent, which could impact the downstream leach extraction and gold recovery. It is planned to conduct test work to assess the impact of a coarser grind size in the next stage of study.

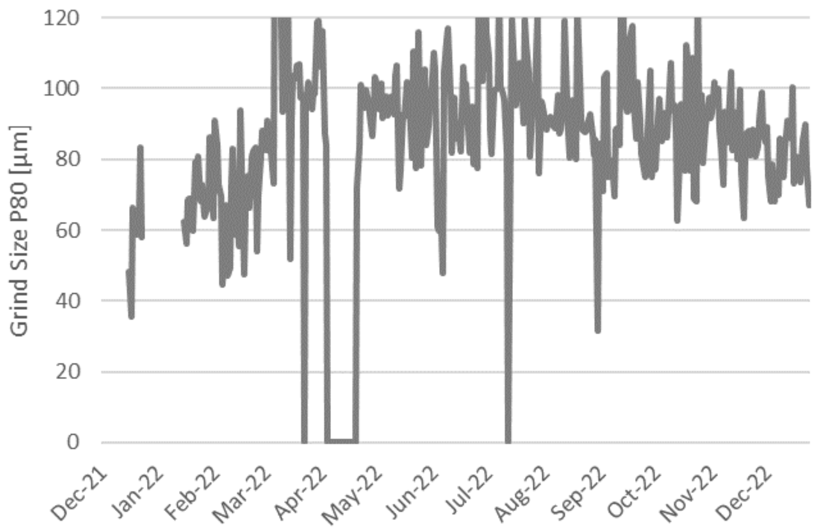


Figure 9-6: Daily Average Primary Grind Size P_{80}

The flash flotation cell was consistently operated from August 2022, and found to recover very high concentrate gold grades as shown in Figure 9-7. Operating the flash flotation cell also improved the downstream concentrate thickener and pressure filter by reducing overgrinding.

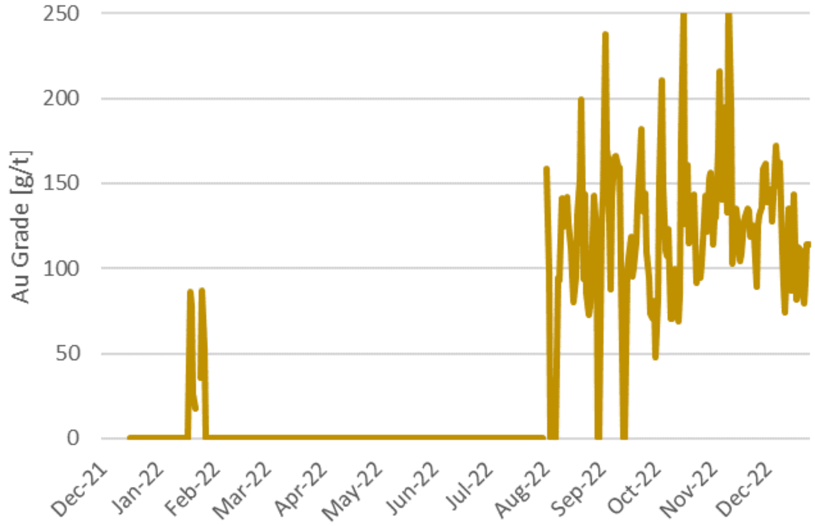


Figure 9-7: Daily Flash Flotation Concentrate Gold Grade

9.2.3 BIOX

The BIOX circuit was originally designed to treat 27.6 tpd of sulphide sulphur through six reactors and was later expanded to 35 tpd (~1,085 t/month) in the second half of 1996 through a total of nine reactors. The circuit demonstrated 35 tpd up until late 1999 as shown in Figure 9-8. The mill feed sulphide sulphur grade trended down over the first few years, and from late 1999 averaged approximately 1% as shown in Figure 9-9. Despite mill feed tonnes exceeding 70 kt/month, the lower mill feed sulphide sulphur grade resulted in the BIOX circuit operating below capacity.

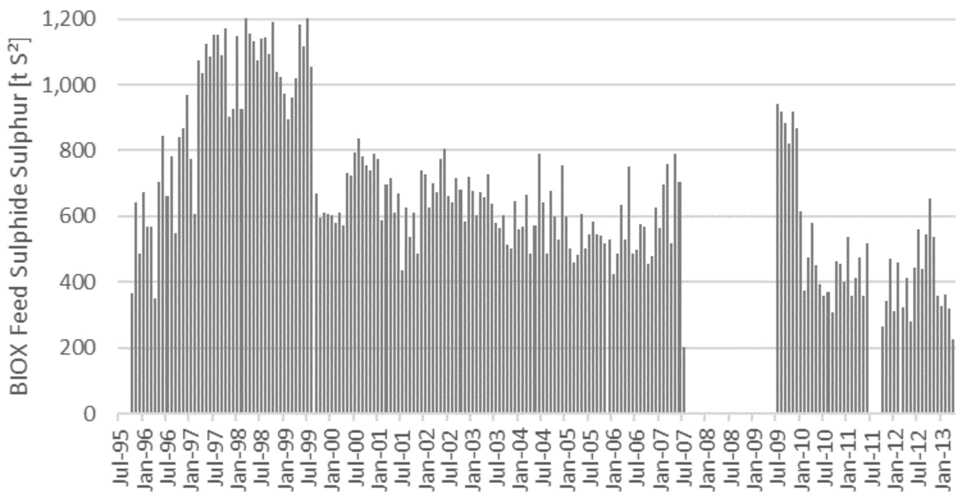


Figure 9-8: Monthly BIOX Feed Sulphide Sulphur Tonnes

With the restart by Apex in late 2008, mill feed tonnes exceeded 70 kt/month for the first year, however, averaged approximately 30 kt/month and 400 kt/year from 2010 due to limited ore supply from underground.

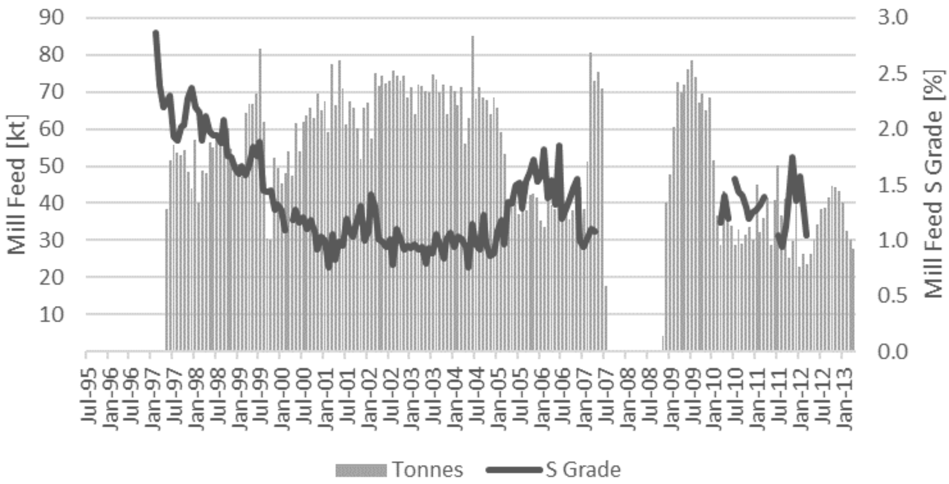


Figure 9-9: Monthly Sulphide Mill Feed Tonnes and Sulphide Sulphur Grade

The BIOX feed sulphide sulphur grade was consistent and averaged 22% S^{2-} as shown in Figure 9-10. The feed tonnes varied in line with mill feed tonnes and sulphide sulphur grade as above.

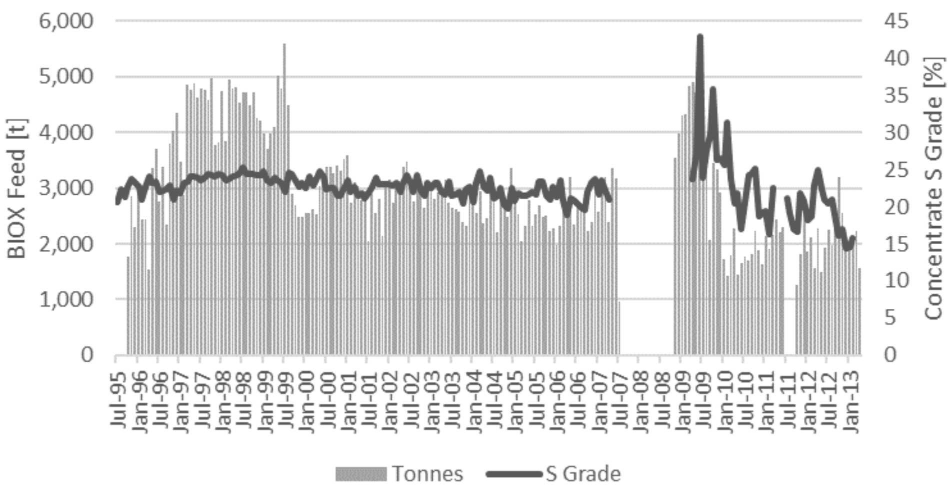


Figure 9-10: Monthly BIOX Feed Tonnes and Sulphide Sulphur Grade

The sulphide oxidation by the BIOX circuit was consistent and up to 95% as shown in Figure 9-11. Overall gold recovery for the sulphide ore typically ranged between 80-85%.

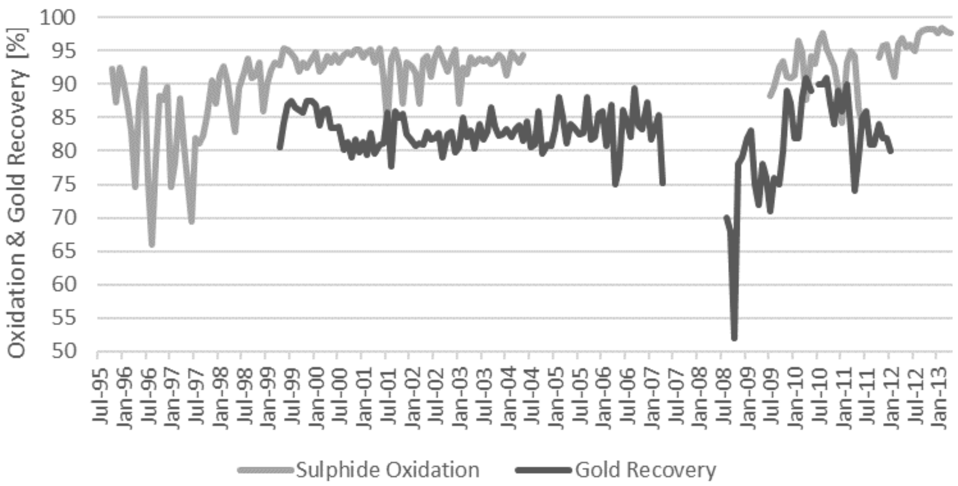


Figure 9-11: Monthly Sulphide Oxidation and Overall Gold Recovery

9.2.3.1 BIOX Test Work

Considering the extensive historic data, no additional test work was conducted as part of this PFS, however, BIOX variability test work is planned for the next stage of study to update and confirm expected performance for the proposed future feed. The BIOX test work will be conducted by the vendor Metso, and will include variability samples. The test work will also assess the impact of grind size on recovery.

9.3 Process Design

The feed to the processing plant will be a combination of free milling oxide/transition/sulphide material, refractory sulphide and historic tailings. Most of the feed to the comminution circuit will be refractory sulphide ore, with campaigns for free milling oxide/transition/sulphide ore. Tailings reclaim will be independent of the comminution circuit and will be fed through the scrubber circuit. The flow sheets for the different ore types are outlined below.

- Refractory sulphide ore: crushing, grinding, flotation, BIOX, leaching and gold recovery.
- Free milling oxide/transition/sulphide: crushing, grinding, leaching and gold recovery.
- Tailings retreatment: repulping, leaching and gold recovery.

The design is to treat 750 ktpa of refractory sulphide ore, perform a flotation upgrade of the gold-bearing pyrite/arsenopyrite to approximately 20% sulphide sulphur, oxidation of the concentrate in the BIOX circuit, and leaching and gold recovery from the BIOX residue to produce gold doré.

The key design criteria for the proposed ore processing are summarised in Table 9-2. The throughputs represent an annualised rate for a given campaign, and the tailings discharge rate reflects the plan to increase the current permitted limit from 2.2 to 3.2 Mtpa.

The full process design criteria, process flow diagram, mass balance and mechanical equipment list are provided in Appendix F1, Appendix F2, Appendix F3 and Appendix F4.

Table 9-2: Key Process Design Criteria

Design Criteria	Units	Value
Throughput - Annualised		
Tailings Retreatment	dry t/y	Up to 3,200,000
Free Milling Oxide	dry t/y	1,700,000
Free Milling Transition/Sulphide	dry t/y	1,300,000
Refractory Sulphide	dry t/y	750,000
Tailings Discharge	dry t/y	3,200,000
Utilisation		
Tailings Reclaim	%	91.3
Crushing & Grinding Circuit	%	91.3
BIOX Circuit	%	94.0
Operating Hours		
Tailings Reclaim	h	8,000
Crushing & Grinding Circuit	h	8,000
BIOX Circuit	h	8,234
Flotation		
Mass Pull	%	$0.8852 \times Au + 9.8508$
Gold Recovery	%	$\begin{cases} -2.908Au^2 + 24.18Au + 37.882 & if\ Au < 4.5 \\ 88.57 & if\ Au > 4.5 \end{cases}$
Concentrate As Grade	%	$0.2484 \times Au/As + 0.7963$
Concentrate S Grade	%	$1.3937 \times S + 20.323$
Leach Gold Recovery		
WilTails – Western Cell & TSF H	%	48.0
WilTails – All Others	%	40.2
Flotation Tailings	%	35.0
Free Milling Oxide	%	84.0
Free Milling Transition/Sulphide	%	78.0
BIOX Residue	%	96.0

The proposed processing plant is comprised of the following main process areas and presented in Figure 9-12.

- Tailings reclaim (existing)
- Crushing (existing)
- Grinding (existing)
- Flotation (existing with new flotation tailings thickener)
- BIOX (refurbish)
- Counter Current Decantation (refurbish)
- Solution Neutralisation (refurbish and new neutralisation discharge thickener)
- BIOX residue leach/adsorption (demolish existing and replace with new)
- Tailings/free milling leach/adsorption (existing)

- Elution and smelting (existing)
- Carbon regeneration kiln (new required)
- Tailings disposal (existing with refurbished final tailings thickener)
- Reagents (some existing, some refurbish)

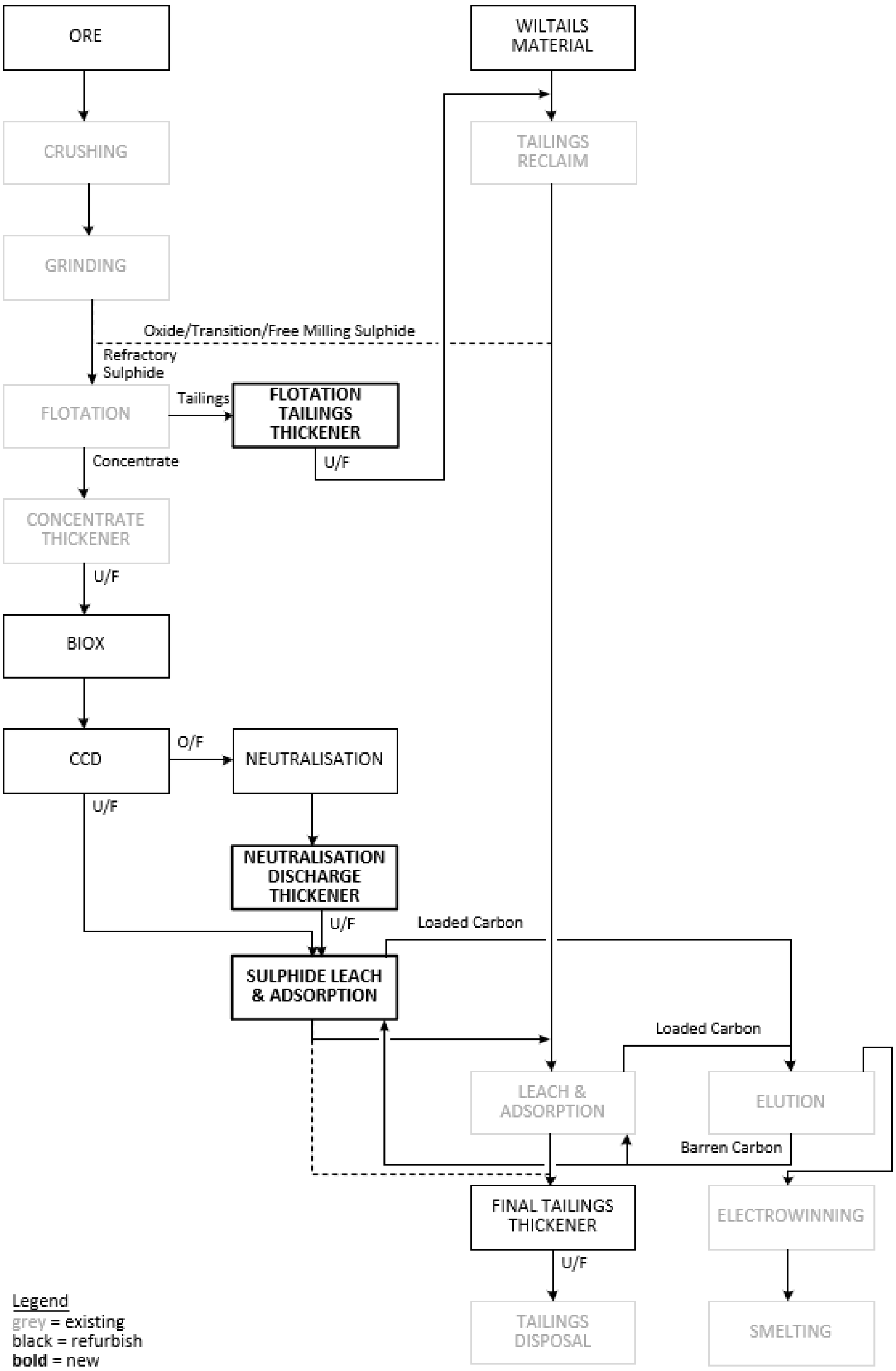


Figure 9-12: Block Flow Diagram

9.3.1 Tailings Reclaim

The newly constructed scrubber circuit in 2023 will be used to reclaim and repulp tailings for reprocessing. There are no changes planned to this circuit. The scrubber circuit was originally designed for a throughput of 250 tph. There is the risk that the scrubber circuit will not be able to deliver the required throughput of 400 tph and will require upgrade.

9.3.2 Comminution

There are no changes planned to the comminution circuit. The comminution properties for the refractory sulphide ore were taken from the WMC 2022 Stage 1 operation and the 2022 WMC Stage 2 FS, and the free milling oxide/transition/sulphide ore from past operation. No additional characterisation has been conducted as part of this PFS.

The nominal grind size P_{80} is 106 µm, although potentially finer as the 2022 operation ranged between 80-100 µm as shown in Figure 9-6 above. There is the risk that the BIOX oxidation rate and hence leach recovery will be negatively impacted by the grind size. Test work will be performed in the next stage of study to verify the sulphide oxidation and leach recovery at the planned grind size and develop a trade-off for finer grind size.

The flash flotation parameters were sourced from the 2022 Stage 1 design criteria and operating data. The gravity gold parameters were sourced from the existing operation.

9.3.3 Flotation

The flotation circuit for the PFS is largely unchanged from the current operation, with a new flotation tailings thickener added to assist with the site water balance.

Circuit mass recovery is expected to be a function of the feed grade as shown in Figure 9-2, however a design mass recovery of 6% has been used for equipment sizing. Previously, the design mass recovery was 7.5% during the Stage 1 design and execution, however, review of the 2022 operation showed mass recoveries of up to 6% during periods of higher feed grade. A conservative design mass recovery of 6% was adopted for this PFS.

Throughput for the concentrate thickener aligns with the 2022 Stage 1 operation, hence no changes are planned for the concentrate thickener. The underflow is pumped to the Filter Feed Tank before being pumped to the BIOX Stock Tank.

For the new flotation tailings thickener, thickening test work was previously conducted by Outotec in 2019 and recommended a specific settling rate of 1.00 $t/m^2 \cdot h$. No additional thickening test work was required as part of this PFS as this test work was deemed sufficient. A specific settling rate of 1.00 $t/m^2 \cdot h$ was used to calculate the required diameter to be approximately 11 m.

9.3.4 BIOX

The BIOX circuit comprises the reactors, Counter Current Decantation (CCD) thickeners, solution neutralisation, cooling water and blower air services, each of which require refurbishment to restart the circuit.

The combined storage capacity of the Concentrate Filter Feed Tank and the BIOX Stock Tank is greater than 48 h to sustain BIOX operation during grinding circuit outages.

The grind size of the BIOX feed can influence the oxidation rate. The upper limit is P_{100} 150 µm, and the P_{80} is typically 75 µm as advised by the vendor. The P_{80} during the previous BIOX operation was 75 µm. The grind size P_{80} from the 2022 sulphide campaign was coarser than this at 80-100 µm as above, which could result in a slower oxidation rate and a lower sulphide oxidation, which could impact the downstream leach extraction and gold recovery. Test work is planned for the next stage of study to determine the impact of a coarser grind size on the sulphide oxidation and leach gold recovery and confirm the required leach time.

The total combined BIOX reaction time is a minimum of five days, which is similar to previous operation and consistent with the vendor recommendation.

Operating parameters for air flow rate, temperature and pH are from the previous operation.

Low pressure air is provided by four blowers, operating with three on duty and one in standby. The air is cooled to 50°C prior to injection into the reactor sparge rings, with cooling water for the aftercoolers cooled by the blower cooling tower.

The heat load for the BIOX reactors is within the previous capacity, hence the design parameters for the previous four cooling tower cells were used. The cooling water is circulated through the cooling coil baffles in each reactor to maintain the temperature to the target 42°C.

The proposed throughput for the CCD and solution neutralisation circuits are within the previous capacity, hence design parameters were used from the previous operation. The underflow slurry density from the fourth CCD is 35% solid, which aligns with the original design and also the proposed density from the 2022 Stage 3 PFS.

For the neutralisation discharge thickener, no settling test work has been conducted to inform the specific settling rate. A settling rate of 0.25 $t/m^2 \cdot h$ was assumed, which aligns with the settling rate for the pressure oxidation solution neutralisation thickener from the 2022 Stage 3 PFS. The thickener diameter was calculated to be approximately 6 m based on the settling rate.

9.3.5 Leach, Adsorption & Gold Recovery

The BIOX residue is high grade at approximately 100 g/t and will be leached and adsorbed in a dedicated circuit. No gold leach kinetic test work was conducted as part of this PFS, however, is planned for the next stage of study. A minimum leach/adsorption time of 48 h is assumed and also aligns with another BIOX operation. The leach/adsorption time during previous operation was higher, but this was due to the large installed volume of the sulphide CIL tanks. The required leach/adsorption time will be confirmed by the leach kinetic curve as part of the next stage of study.

Carbon concentration is 20 g/L and aligns with previous operation. Carbon management will be counter-current flow with intertank screens and the loaded carbon pumped to the Loaded Carbon Screen.

Tailings reprocessing and free milling oxide/transition/sulphide ore will be leached/adsorbed through the existing nine-tank circuit as per current operation. Loaded carbon will be pumped to the Loaded Carbon Screen.

There are no changes planned for the gold recovery circuit, with the loaded carbon from both the BIOX residue and tailings leach/adsorption circuits processed as per current operation. A review of the recovery circuit is recommended to ensure it is optimised for the higher grade BIOX circuit.

9.3.6 Tailings Disposal

To assist with the site water balance, it is proposed to refurbish the unused oxide/grinding thickener to recover water for re-use in the scrubber circuit. The diameter of the oxide/grinding thickener is 36.6 m. Thickening test work was previously conducted by Outotec in 2016 on leach tailings and reported a range of settling rates between 0.20 to 1.50 $t/m^2 \cdot h$. A specific settling rate of 0.50 $t/m^2 \cdot h$ was used to calculate the required thickener diameter to be approximately 32 m.

9.4 Process Description

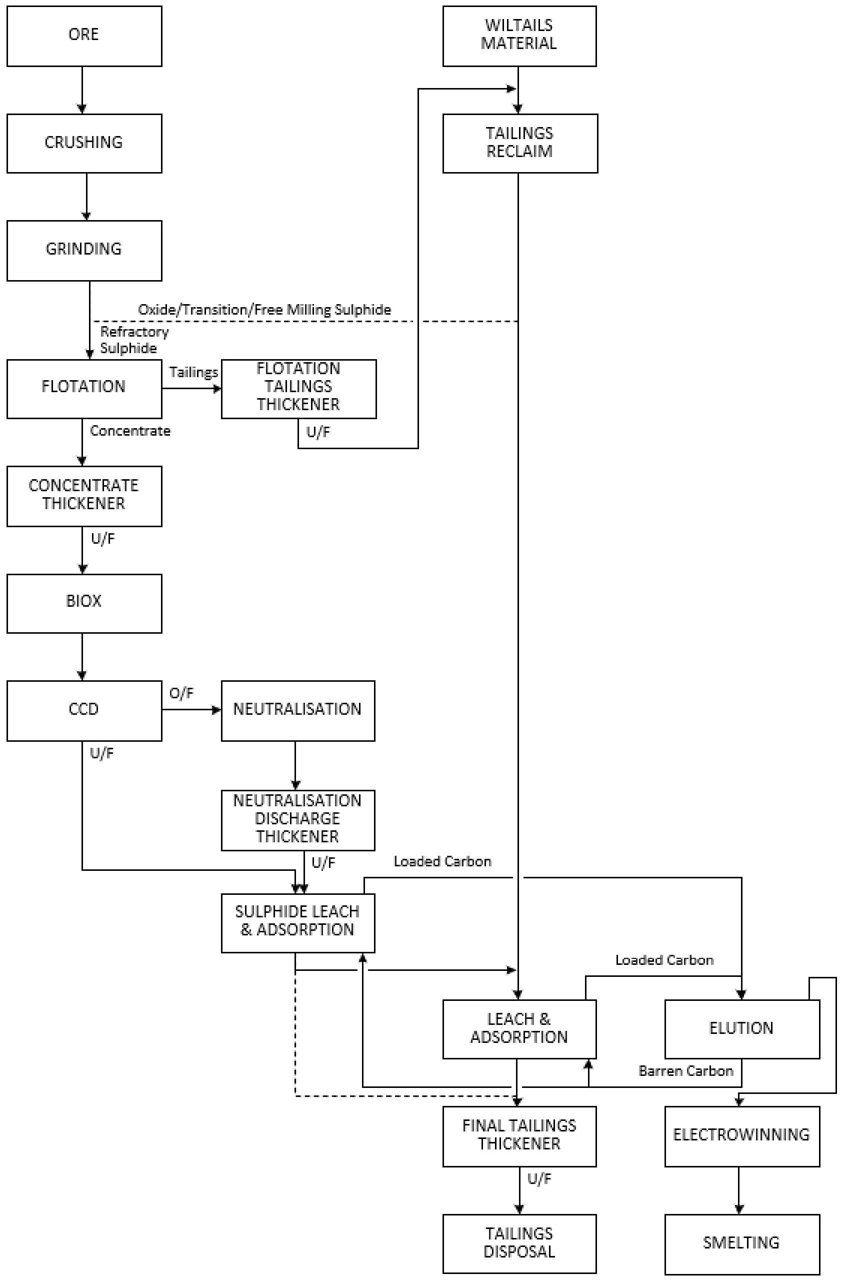


Figure 9-13: Block Flow Diagram

9.4.1 Tailings Reclaim

Tailings from historic TSFs are loaded onto the belt feeder by front end loader, and conveyed to the scrubber. Thickened flotation tailings from the flotation circuit will be added to the scrubber feed chute for co-processing along with the historic tailings. Process water from the process water pond is added to the scrubber feed chute for repulping. The process water pond contains TSF decant return water and mine dewatering water. The scrubber discharge is pumped to the trash screen with the undersize reporting to the surge tank ahead of transfer to the tailings leach/adsorption circuit.

9.4.2 Comminution

Ore from the ROM is fed into the ROM bin by front end loader, which feeds the primary jaw crusher. The crushed product is conveyed to the double deck screen, with the 6-8 mm undersize conveyed to the ore shed, and the oversize and midsize conveyed to the secondary and tertiary cone crushers. The cone crushers discharge onto the crusher discharge conveyor.

Crushed ore is loaded into the Mill 1 Feed Bin by front end loader and conveyed to Ball Mill 1. Ball Mill 1 discharge is pumped to the Mill 1 Cyclone Cluster, with the overflow reporting to the two trash screens and the underflow reporting to the Rod Mill. The Rod Mill operates in open circuit and discharges into the Mill 2 Discharge Hopper. The Mill 2 Discharge Hopper pumps to the Mill 2 Cyclone Cluster, with the overflow reporting to the two trash screens and the underflow reporting to the Underflow Distribution Box. The Underflow Distribution Box diverts to either the Flash Flotation Cell or Ball Mill 2.

The flash flotation cell is a dual-outlet SkimAir SK-240, which recovers a high grade concentrate that is pumped to the concentrate thickener. The dilute top outlet flows to the Mill 2 Discharge Hopper to maintain the grinding circuit water balance and the coarse bottom outlet flows to the Ball Mill 2 feed chute. The flash flotation cell can be bypassed by the Underflow Distribution Box.

A proportion of the Mill 2 Discharge Hopper is also diverted for gravity gold recovery through the Knelson concentrator and Acacia intensive leach reactor. The pregnant leach solution from the reactor is transferred to the pregnant tank in the gold room for electrowinning and smelting to produce gold doré.

The undersize from the two trash screens is pumped to either the flotation Conditioning Tank for the refractory sulphide ore, or to leach Tank 0 for the free milling oxide/transition/sulphide ore.

9.4.3 Flotation

The five rougher flotation cells, two cleaner cells and four cleaner scavenger cells upgrade and recover a sulphide concentrate grading approximately 20% sulphide sulphur. The concentrate is pumped to the Concentrate Thickener and thickened to 60% solids, with the underflow pumped to the Concentrate Filter Feed Tank and the overflow pumped to the Process Water Tank. The plate pressure filter that was previously used to filter the concentrate for export is not required, and instead the thickened concentrate will be pumped to the BIOX Stock Tank at the BIOX area.

The tailings will be pumped to a new flotation tailings thickener and thickened to 60% solids. The underflow will be pumped to the tailings reclaim scrubber or the Final Tailings Hopper if the scrubber is offline, or the CIL feed, and the overflow pumped to the Process Water Tank at the flotation area.

9.4.4 BIOX

9.4.4.1 BIOX Reactors

The BIOX Stock Tank combined with the Concentrate Filter Feed Tank provides storage capacity to sustain bacterial activity during grinding circuit outages by maintaining feed to the reactors and provides concentrate blending to support circuit optimisation.

The discharge from the BIOX Stock Tank is diluted to 20% solids and pumped to the feed distributor where it is combined with a pre-mixed nutrient solution that promotes bacterial growth. The feed distributor splits the stream evenly between the primary reactors.

The BIOX circuit has nine existing reactors, six of which are required to be refurbished based on the proposed throughput. The primary reactors are operated in parallel and the secondary reactors operated in series. Three primary reactors and three secondary reactors are required to provide a minimum of five days reaction time. Slurry is transferred from the primary reactors to the first secondary reactor using airlifts, and between the secondary reactors via launders.

Low-pressure air is injected into each reactor through a sparge ring installed below the agitator to provide oxygen for the oxidation reactions.

Cooling water is circulated through cooling coil baffles installed in each reactor to cool the slurry from the exothermic reaction and maintain the target reactor temperature.

Calcrete slurry is added to maintain the slurry pH between 1.0-1.6 and counter the sulphuric acid produced by the oxidation reactions.

Slurry from the last secondary reactor gravity flows to the first CCD thickener for washing. There is approximately a 30% mass loss of the flotation concentrate resulting from the oxidation reactions.

9.4.4.2 Counter Current Decantation

The oxidation of the concentrate solubilises arsenic, iron and sulphur and produces sulphuric acid, which require washing ahead of the leach/adsorption circuit. The BIOX residue is washed through four-stages of CCD, with the underflow slurry pumped sequentially from the first to the fourth CCD, and wash water added to the fourth CCD flowing counter current down to the first CCD. Flocculant is added to the feedwell of each CCD as a settling aid in the solid liquid separation.

The underflow slurry from the fourth CCD is pumped to the BIOX residue leach circuit, while the overflow from the first CCD flows to the solution neutralisation circuit.

9.4.4.3 Solution Neutralisation

The overflow from the first CCD is acidic and contains soluble arsenic, which require neutralisation

calcrete slurry is added to raise the pH and precipitate the soluble arsenic as stable ferric arsenate.

Low-pressure air is also injected into the tanks to maintain dissolved oxygen levels for the neutralisation reactions.

Previously, the neutralisation discharge flowed into a hopper and was pumped to the final tailings hopper for co-disposal at the TSF. Considering the constraints of the site water balance, a neutralisation discharge thickener will be installed to recover some of this water for re-use within the processing plant. The neutralisation thickener could also be a means of gold recovery as the overflow can contain fine suspended gold, which was reported in FY13 to contain close to 2 koz for the year to May 2013. The underflow slurry is pumped to the BIOX residue leach circuit and the overflow pumped to the process water tanks for re-use. This may improve recovery.

9.4.4.4 BIOX Services

Air is supplied by four blowers and injected into each BIOX reactor sparge ring and each neutralisation tank sparge ring.

Cooling water is circulated through the through cooling coil baffles installed in each reactor. The cooling water is circulated back to the four cooling tower cells for evaporative cooling.

9.4.4.5 Inoculum Build-up and Start-up

A small bacterial population is available from the previous operation and remains refrigerated. If this population is found to be unrecoverable, a new population can be sourced from another operation, or Metso.

The population needs to be grown in volume in order to recommission the BIOX circuit. The inoculum build-up process will have four stages, defined as A, B, C and D. These occur outside of the BIOX reactors. The inoculum from Stage D is then transferred to one of the primary reactors and used to build up and inoculate the other reactors.

The inoculum build-up process should commence approximately 20 weeks prior to the recommissioning of the BIOX circuit. Ten litres of inoculum is reactivated in the laboratory and transferred to a 100 L tank containing acidified concentrate slurry as part of Stage A. When the 100 litres of inoculum is active, it is transferred to a 1,000 L tank for Stage B. The 100 L and 1,000 L tanks will be equipped with agitators, air spargers and heaters, and cooling coils in the 1,000 L tank.

When the 1,000 litres of inoculum is sufficiently active, it will be transferred to the Nutrient Make-up Tank for Stage C. The tank volume is 13.5 m^3. This will need to be fitted with an air sparger and temporary cooling coils. When the 13.5 m^3 of inoculum is active, it will be transferred to one of the neutralisation tanks for Stage D. The tank volume is approximately 100 m^3 and will initially be filled to 50% before slowly increasing to full by adding fresh concentrate slurry. The tank will be fitted with temporary cooling coils.

When the 100 m^3 of inoculum is active, it will be transferred to one of the primary reactors. The reactor volume is approximately 470 m^3 and will initially be filled to 50% before slowing increasing to full by adding fresh concentrate slurry once the bacteria are active. When the first reactor is full, it will be used to inoculate the other two primary reactors. When the three primary reactors are active, continuous feeding will commence at a reduced rate. This will commence transfer to the first secondary reactor, which will then flow to the two remaining secondary reactors. When there is overflow from the last secondary reactor, the BIOX reactors will be inoculated and active.

9.4.5 Leach, Adsorption & Gold Recovery

There are separate leach/adsorption circuits for the BIOX residue and the tailings/free milling due to the high grade of the BIOX residue. Loaded carbon from both circuits is treated through the existing gold recovery circuit.

9.4.5.1 Leach & Adsorption – BIOX Residue

BIOX residue from the fourth CCD underflow is treated in six agitated tanks consisting of one conditioning tank and five leach/adsorption tank in series. Each tank is agitated to ensure uniform mixing, and slurry flows from one tank to the next by launder.

Slaked lime slurry is added to the conditioning tank to raise the pH, before flowing into the first leach/adsorption tank.

Sodium cyanide is added to the first leach/adsorption tank to leach the contained gold.

There is approximately 20 g/L of activated carbon in each tank to adsorb the leached gold. Barren carbon is added to the last leach/adsorption tank and is transferred counter-current using intertank screens and airlifts between tanks. Loaded carbon from the first leach/adsorption tank is pumped to the Loaded Carbon Screen.

Tailings from the last leach/adsorption tank can be pumped to the tailings leach/adsorption circuit for further gold extraction or alternatively flow to the Carbon Safety Screens for tailings disposal.

9.4.5.2 Leach & Adsorption – Tailings & Free Milling

Slurry from the tailings reclaim Leach Surge Tank and the grinding Leach/Flotation Feed Hopper are treated in nine agitated tanks consisting of three leach tanks and six adsorption tanks as per the existing circuit.

Loaded carbon is pumped to the Loaded Carbon Screen.

Tailings flow to the Carbon Safety Screens.

9.4.5.3 Gold Recovery

Loaded carbon from both the BIOX residue and tailings leach/adsorption circuits are pumped to the Loaded Carbon Screen and processed in 2.5 tonne batches through the existing desorption circuit. The loaded carbon is washed with hydrochloric acid and desorbed in the elution column. The pregnant eluate from the elution column is pumped through the electrowinning cell with the gold bearing sludge dried prior to smelting. The barren eluate from the electrowinning cell is returned to the leach circuit.

9.4.6 Tailings Disposal

The undersize from the Carbon Safety Screen flows to a new Tailings Transfer Hopper and is pumped to the refurbished oxide/grinding thickener, renamed as the final tailings thickener. The overflow from the final tailings thickener flows to the Process Water Pond for re-use and the underflow pumped to the Final Tailings Hopper for disposal at the TSF.

9.4.7 Reagents

9.4.7.1 Flotation Reagents

The flotation reagents are unchanged from the Stage 1 operation. Frother is delivered to site in IBCs, transferred to the storage tank and dosed to the flotation cells. Potassium amyl xanthate is delivered to site in bulk isotainers, transferred to the storage tank and dosed to the flotation cells. Copper sulphate pentahydrate is also delivered to site in bulk isotainers, transferred to the storage tank and dosed to the flotation cells.

9.4.7.2 Flocculant

There are three separate flocculant mixing systems for the flotation, CCD and final tailings thickeners. The flocculant mixing system at the flotation plant doses the Concentrate Thickener and the new Flotation Tailings Thickener, the system at the CCDs doses the four CCDs and the new neutralisation discharge thickener, and the system in the general reagent area doses the final tailings thickener.

Flocculant for each system is delivered to site as a dry powder in bags. The bags are loaded into the powder hopper, which is then blown into the wetting head to produce a 0.25% w/w flocculant solution. Flocculant is mixed in an agitated tank and transferred to the storage tank. Dedicated dosing pumps deliver the flocculant from the storage tank to the respective thickener.

9.4.7.3 BIOX Nutrients

A pre-mixed nutrient (Nitrogen: Phosphorus: Potassium 16:3:9) is delivered to site as a dry powder in bulk bags. Bags are loaded by hoist onto the bag splitter above the Nutrient Make-up

Tank. The tank is agitated and pre-filled with water to make-up the nutrient solution to the target strength. The nutrient solution is pumped to the Nutrient Tank at the BIOX area where it is dosed using duty/standby pumps into the feed distributor.

9.4.7.4 Calcrete

Calcrete is trucked to site and stored in a stockpile near the general reagent area. The calcrete is fed via the feed bin and conveyor to the Calcrete Mill where it is ground in closed circuit with the hydrocyclones. The cyclone overflow gravitates into the agitated Calcrete Storage Tank. Calcrete distribution pumps supply a ring main that dose into the BIOX reactors and neutralisation circuit.

9.4.7.5 Quicklime

The quicklime/lime slaking system is unchanged from current operation. Quicklime is delivered to site in tankers and transferred to the lime silo. The quicklime is fed into the lime slaking mill and pumped to the agitated Milk of Lime Storage Tank. Slaked lime distribution pumps supply a ring main that dose into the leach/adsorption tanks. The lime slaking system may require upgrades as the system was previously designed for a throughput of 1.45 dtph.

9.4.7.6 Sodium Cyanide

The sodium cyanide system is unchanged from current operation. Sodium cyanide is delivered to site in bulk tankers and pumped into the cyanide storage tank. The solution is pumped to the storage tank for distribution.

9.4.7.7 Hydrochloric Acid

The hydrochloric acid system is unchanged from current operation. Hydrochloric acid is delivered to site in IBCs and dosed into the Acid Wash Hopper.

9.4.7.8 Sodium Hydroxide

The sodium hydroxide system is unchanged from current operation. Sodium hydroxide is delivered to site in bulk tankers and pumped into the hydrochloric acid storage tank. The solution is then ready to be dosed to the gold recovery circuit.

9.5 Capital Cost Estimate

9.5.1 Introduction

The capital cost estimate was developed by Mincore to an AACE Class 4 estimate with an accuracy level of ±25%. The estimate is presented in Australia Dollars (AUD), with a 2023 Q3 base date. The estimate does not include or allow for escalation or foreign exchange fluctuations. The capital cost estimate was developed in accordance with the scope and defined battery limits.

9.5.2 Summary of Estimate

The capital cost estimate is presented in Table 9-3.

The full capital cost estimate is provided in Appendix F5.

Table 9-3: Capital Cost Estimate Summary

Plant Area	Cost (A$M)
Area 338 – Flotation Tailings Thickener	1.22
Area 333 – BIOX	15.13
Area 334 – CCD	1.85
Area 336 – Neutralisation	1.75
Area 337/339 – Reagents	1.43
Area 304 – BIOX Residue Leach/Adsorption	2.63
Area 306 – Final Tailings Thickener	3.16
Subtotal Direct Cost	27.15
EPCM Cost (20% Direct Cost)	5.43
Total Estimated Cost	32.58
Contingency on Total Estimate (20%)	6.52
Total Estimate	39.10
Owner's Cost (5%)	1.95
Total Cost	41.05

9.5.3 Direct Cost Development

The direct costs were estimated from the mechanical equipment including freight and installation. Earthworks, concrete, structural steel, platework and piping were estimated from preliminary material take-offs. Electrical and instrumentation costs were largely factored as a percentage of the direct cost for each area. A breakdown of the cost by discipline is provided in Table 9-4.

Table 9-4: Direct Cost by Discipline

Discipline	Direct Cost (A$M)	Proportion (%)
Civil/Concrete	0.83	3
Structural Steel	0.91	3
Mechanical Equipment	17.60	65
Platework	4.39	16
Piping	1.32	5
Electrical & Instrumentation	2.10	8
Total Direct Cost	27.15	100

9.5.3.1 Site Construction Rates

The labour costs were estimated based on an assumed EPCM delivery strategy using available construction subcontractors. The estimate assumed an average labour rate and then added a subcontract distributable for each trade discipline as shown in Table 9-5Table . The average labour rate of $85/direct hour reflects a fully burdened rate based on a typical crew mix which is considered to reflect typical industry Enterprise Bargaining Agreements (EBA). While these rates can vary between subcontractors depending on EBA agreements this rate is appropriate for this PFS.

Table 9-5: Construction Installation Hourly Rates

Trade Discipline	Labour Rate (A$/h)	Subcontract Distributable (A$/h)	Installation Rate (A$/h)
Concrete	85	102	187
SMP	85	153	238
E&I	85	102	187

9.5.3.2 Freight

Domestic freight has been included in the estimate at 5% of the material or equipment supply cost for each estimate item except where freight costs have been nominated by a vendor. Ocean freight costs are included at 15% where unknown. Freight costs average 2.3% of the total direct costs reflecting the emphasis on refurbishment of existing equipment and the brownfields nature of the BIOX scope.

9.5.3.3 Concrete

Estimated rates for concrete reflect pricing quoted for another Wiluna project in 2023. Rates for installed slabs on grade and equipment footings have been included separately at $2,920/m^3$ and $3,130/m^3$. Installed concrete scope represents 3% of the direct cost.

9.5.3.4 Structural Steel

Structural steel represents 3% of the direct cost and is essentially for replacement of secondary steel items such as floor grating and handrails. Unit pricing supply rates reflect current domestic pricing. Quantities are allowances based on assessments from previous site inspections.

9.5.3.5 Mechanical Equipment

Installed mechanical equipment items reflect the current equipment list and represent the largest portion of the direct cost at 65%. Budget pricing has been sourced for the key equipment. Estimates and allowances of labour and materials to refurbish existing equipment are largely based on the scoping study assessments previously undertaken.

Vendor installation and commissioning support for the thickeners and blowers has been included.

9.5.3.6 Platework

This pricing is essentially for refurbishment of the reactor tanks where it has been assumed that all tank lining would be replaced. Estimates for quantities and pricing have been included based on this assumption. These costs represent 16% of the direct costs.

9.5.3.7 Piping & Valves

Allowances for services and process piping, fittings and valves have been included based on preliminary pipe sizing and manual valve list. These costs represent 5% of the direct costs.

9.5.3.8 Electrical and Instrumentation

Electrical costs have been included based on the prepared single line diagram, equipment load list, cable schedule and current site layout. Quotations for replacement and upgrades to power and control equipment were sourced from a local contractor. These costs represent 8% of the direct costs.

9.5.4 Indirect Cost Development

9.5.4.1 Engineering & Construction Services

Costs for engineering and construction services have been included as a nominal 20% of the direct costs reflecting the complexity of brownfields projects and are based on an EPCM delivery strategy.

9.5.4.2 Contingency

A contingency provision has been included as 20% of the total cost estimate reflecting the further design work required to be completed and the range of accuracy reflected in the current pricing assumptions.

9.5.4.3 Owner's Cost

A nominal 5% allowance of the total cost has been included for costs such as subcontractor use of Wiluna flight services, use of Wiluna small equipment, use of Wiluna office services, communications, operational services for safety, security and construction coordination.

9.6 Operating Cost Estimate

The processing operating cost estimate for this PFS has been developed to a pre-feasibility study level accuracy of ±25%. The estimate is presented in Australia Dollars (AUD), with a 2023 Q3 base date. The costs have adapted and incorporate existing processing operating costs at Wiluna and represent the overall processing cost for each flow sheet type. Costs have been estimated for the different flow sheets and are presented as annualised and on a respective per tonne basis.

9.6.1 Summary of Estimate

The operating costs were estimated by reviewing previous:

- Resourcing levels and current position salaries.
- Site gas and power demand and their allocation to processing.
- Reagent consumption and unit costs for the 2022 flotation and recent free milling campaigns.
- Maintenance consumables costs.

A summary of the operating cost by processing type is shown in Table 9-6.

Table 9-6: Operating Costs by Processing Type

Type	Unit	Value
Tailings Retreatment (Grinding Circuit)	A$/t tailing	15.20
Free Milling	A$/t ore	22.96
Sulphide Flotation	A$/t ore	39.78
BIOX	A$/t concentrate $A/t ore	303.64 12.36
Tailings Retreatment (Scrubber Circuit)	A$/t tailing	5.94

There are some differences compared to the values reported in Mining One's Value Optimisation Study, which were primarily sourced from the PFS conducted by WMC in 2022 (Stage 3 PFS using flotation and pressure oxidation). The reasons behind some of these differences are outlined below.

- The Free Milling cost is lower at $22.96 compared to $30.20/t ore. The previous financial model apportioned the processing costs between the ore types planned for each month. Free Milling cost was only planned for two months, but the monthly cost was biased high due to the higher cost base required for the other ore types.
- The flotation cost is higher at $39.78 compared to $29.32/t ore. The previous model was based on a refractory sulphide throughput of 1.50 Mtpa, whereas the proposed throughput is 0.75 Mtpa. The processing cost is higher due to the lower throughput.
- The BIOX cost is higher at $303.64 compared to $270.73/t concentrate. The previous cost was estimated based on historical costs provided by Wiluna on a $/t ore basis and converted to $/t concentrate on an assumed mass recovery basis. The current BIOX cost has been estimated from first principles.
- The tailings retreatment cost for the scrubber circuit is lower at $5.94 compared to $7.28/t tailing. The previous model assumed tailings reclaim at 0.50 Mtpa for a total throughput of 2.0 Mtpa, whereas the proposed tailings reclaim is 2.45 Mtpa for a total throughput of 3.2 Mtpa. The processing cost is lower due to the higher tailings retreatment rate.

In developing the operating cost estimates, the focus was on the restart of the sulphide flotation and BIOX circuits, as Free Milling is the established process onsite. However, the same methodology was also applied for Free Milling to calibrate and check the method and compare against recent actual processing costs.

The costs to operate the tailings retreatment circuit were considered as a separate cost basis. The costs to operate the scrubber and leach/adsorption circuit were separated from the costs for the main processing plant as the scrubber circuit can be turned on and off as required.

The breakdown of the operating cost estimate is provided in Appendix F6. The assumptions used in the estimate are detailed further below.

The operating cost for Free Milling will not be discussed in detail as this is the established process. The cost was estimated to be $22.96/t ore, which was comparable to recent actual costs.

A summary of the operating cost to treat 750 ktpa of refractory sulphide ore and up to 3.2 Mtpa of tailings retreatment is provided in Table 9-7 and Figure 9-14 with the power and reagent costs separated between refractory sulphide ore and tailings retreatment. The costs of reagents are the largest contributor to the processing cost, particularly the tailings retreatment, although it is noted that the tailings retreatment costs are high because of the high throughput.

Table 9-7: Operating Cost Estimate Summary for 0.75 Mtpa Refractory Ore and 3.2 Mtpa Tailings Retreatment

Item	Unit	Value
Labour	$M/y	14.47
Power	$M/y	12.13
Reagents & Consumables	$M/y	24.76
Maintenance Materials	$M/y	6.40
Total Processing Cost	**$M/y**	**57.76**
Unit Cost for Comminution + Flotation	$/t Feed	39.78
Unit Cost for BIOX	$/t Concentrate	303.64
Unit Cost for Tailings Retreatment	$/t Feed	5.94

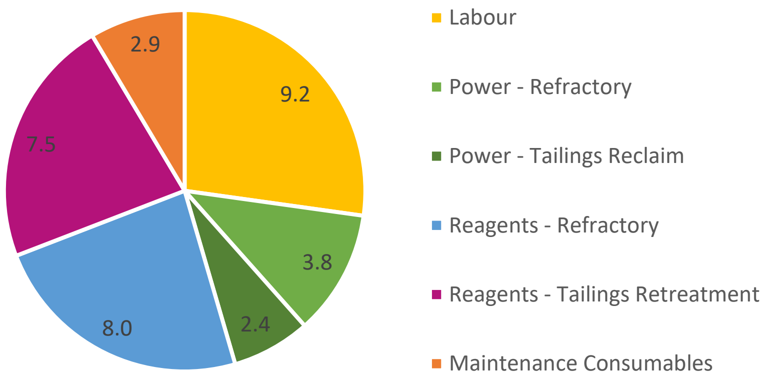


Figure 9-14: Operating Cost Summary ($M/y)

9.6.2 Basis of Estimate

9.6.2.1 Labour

The resourcing estimate was developed based on current staffing levels and the 2022 flotation operation. Resourcing levels will be ramped up from current levels to the final level as shown in Table 9-8. The total staffing includes 53 processing and 28 maintenance personnel.

Individual position salaries are not reported as some salaries have been adapted from current operational roles. Additional on-cost allowances were made on top of base salaries to include superannuation, statutory and site allowances.

The total annual cost for labour is estimated to be $14.47M.

Table 9-8: Labour Resourcing Level

Processing		Maintenance	
Position	**Number**	**Position**	**Number**
Process Manager	1	Maintenance Manager	1
Alternate Process Manager	1	Alternate Maintenance Manager	1
Process Superintendent	1	Maintenance Planner	2
Metallurgist	4	Electrical Supervisor	2
Process Supervisor	4	Electrician	4
Senior Operators	4	Mechanical Supervisor	2
Operators	20	Fitter	6
Gold Room Operator	2	Boilermaker	4
Process Trainer	2	General Trade	2
Laboratory Supervisor	2	Warehouse Officer	2
Laboratory Technician	12	Light Vehicle Fitter	2

9.6.2.2 Power

Power generation at Wiluna is a combination of gas and diesel fired generators. The site gas and power agreements are discussed in more detail in Section 12.3.

Monthly site gas and power costs are allocated between departments based on the number of kWh consumed by that department for the month.

The site gas and power demand during the 2022 sulphide campaign was reviewed to determine the base load for flotation processing. The additional load for the BIOX circuit was then added to estimate the power demand for processing. The power demand for 2022 averaged between 6-7 MW, although it is noted that there was power for underground during this time. The unit power cost was estimated to be $0.144/kWh. For this estimate, the load for underground and the village, warehouse and laboratory was estimated and subtracted. The load for the flotation circuit was reduced by 0.2 MW as the pressure filter for concentrate production will not be operational. The load for the BIOX circuit was estimated based on the mechanical equipment list and added to the total. The power demand for processing was estimated to be 7.7 MW as outlined in Table 9-9.

Table 9-9: Power Consumption Summary for Processing

Plant Area	Installed Power (kW)	Operating Power (kW)
Crushing	-	525
Grinding	-	2,275
Flotation	1,710	1,000
BIOX, CCD & Neutralisation	3,500	2,625
Leach & Adsorption – BIOX Residue	267	200
Leach & Adsorption – Tailings	-	525
Reagents & Services	-	500
Total	**-**	**7,650**

Using the rates as per the different agreements, and an allocation to processing, the annual power cost for processing was estimated to be $9.74M.

Power for the tailings reclaim scrubber circuit is provided by a diesel generator. The operating power is 682 kW, which assuming a diesel efficiency of 0.257 L/kWh, equates to 170 L/h. Assuming a diesel cost of $1.70 per L, this equates to $2.38M based on 8,000 operating hours. The site team plan to connect the scrubber circuit to the main power distribution, which could reduce the power cost for the scrubber circuit to $0.79M.

The combined annual power cost for processing is estimated to be $12.13M.

9.6.2.3 Reagents & Operating Consumables

The reagent and operating consumables costs were estimated based on recent data for Free Milling ore, data from the 2022 flotation campaign, and available historic data for the BIOX operation. Consumption rates for the flotation tailings thickener flocculant and leach tailings thickener flocculant were based on previous test work, and rates for the neutralisation discharge thickener flocculant were assumed based on a similar application.

The reagent and consumables consumption rates are summarised in Table 9-10, with the total annual cost estimated to be $24.76M. This is based on 0.75 Mtpa of refractory ore through the flotation and BIOX circuits and up to 3.2 Mtpa of tailings retreatment. The highest costs are for sodium cyanide, quicklime and copper sulphate, which combined account for $19.68M. The sodium cyanide and quicklime costs for tailings retreatment are significant and account for $14.29M, but this is driven by the high throughput of 3.2 Mtpa.

The mining costs for calcrete have not been included in this processing cost estimate.

Table 9-10: Reagent & Consumable Consumption Rates and Cost Summary

Consumable	Units	Rate	Annual Cost ($M)
Grinding Media 50 mm	kg/t Ore	0.500	0.99
Grinding Media 80 mm	kg/t Ore	0.320	0.66
Grinding Rod 90 mm	kg/t Ore	0.440	0.14
Grinding Rod 70 mm	kg/t Ore	0.460	0.07
Copper Sulphate	kg/t Ore	0.277	1.36
Potassium Amyl Xanthate	kg/t Ore	0.120	0.58
Frother DSF002A	kg/t Ore	0.020	0.07
Frother DSF004A	kg/t Ore	0.030	0.11
Flocculant – Concentrate	kg/t Conc	0.020	0.002
Flocculant – Flotation Tailings	kg/t Tailing	0.030	0.07
BIOX Nutrients	kg/t Conc	6.000	0.32
Flocculant – CCD	kg/t Conc	0.379	0.09
Quicklime – BIOX Residue	kg/t Conc	133.000	1.89
Quicklime – Tailings Leach	kg/t Tailing	3.270	6.04
Cyanide – BIOX Residue	kg/t Conc	15.000	2.13
Cyanide – Tailings Leach	kg/t Tailing	0.550	8.26
Oxygen	m^3/t Tailing	0.134	0.28
Carbon – Combined	kg/t Leach	0.030	0.54
Flocculant – Leach Tailings	kg/t Tailing	0.015	0.22
Hydrochloric Acid	L/Strip	188.00	0.07
Sodium Hydroxide	L/Strip	395.000	0.22
LPG	L/t	0.150	0.58
Other	-	-	0.05
Total	**-**	**-**	**24.76**

9.6.2.4 Maintenance Materials

Maintenance costs include the cost of spare parts, maintenance consumables and maintenance contractors to maintain the facilities. The maintenance costs were estimated by reviewing recent and previous operating budgets and past departmental cost summaries.

A summary of the maintenance costs is provided in Table 9-11, with the total annual cost estimated to be $6.40M.

Table 9-11: Maintenance Cost Summary

Cost Area	Annual Cost ($M)
Tailings Reclaim	0.22
Crushing	0.80
Grinding	1.03
Flotation	0.60
BIOX, CCD & Neutralisation	1.20
Leach & Adsorption	0.72
Water Services	0.18
General	1.66
Total	**6.40**

9.7 Project Implementation

A proposed project execution schedule was developed by Mincore, which can be found in Appendix F5.

The estimated schedule is in the order of 60 weeks to practical completion (completion of dry and wet commissioning).

The preliminary schedule milestone dates from award date are summarised as follows:

Table 9-12: Key Project Milestones

Milestone	End of Week
Detailed Design Commences	Week 4
Early Works Commence	Week 8
Blowers & Agitators Award	Week 12
Other Equipment Award	Week 16
Construction Mobilisation	Week 24
Construction Completion	Week 56
Commissioning Commences	Week 56
Commissioning Completion	Week 60

10 TAILINGS STORAGE

The tailings facilities are spread across the Wiluna mine site, with several paddock tailing storage facilities and abandoned pits used for life of production to date. The tailings facilities are shown in Figure 10-1.

Figure 10-1: Aerial View of Tailings Storage Facilities at the Wiluna Mine Site

The current storage facility is TSF K, which has been in service since June 2020. There has been one crest lift approved from 512 to 518.5 mRL, which is expected to reach capacity by Q3 2025 based on the current planned throughput. There is scope for further lifts to the final elevation of 537 mRL.

10.1 Current Tailings Facilities

The initial construction of TSF K used a starter embankment inside the approved footprint and was constructed to an elevation of 512 mRL. Originally, it was planned to be constructed to 515 mRL, but was reduced to 512 mRL due to timing and availability of suitable material to construct the embankment. The reduced storage capacity was approximately 3.4 Mt and reached capacity in mid 2022.

The crest lift from 512.0 to 518.5 mRL was estimated to increase storage capacity by approximately 6 Mt. The lift commenced in early 2022, and as of late 2023 had been raised to 516.5 mRL. The lift to 518.5 mRL is planned in 2024. As of the start of November 2023, there is approximately 5.1 Mt remaining to 518.0 mRL, allowing for 0.5 m freeboard, and is expected to reach capacity by Q3 2025 as shown in Table 10-1.

Table 10-1: TSF K Forecast Deposition and Remaining Storage to 518.0 mRL

Quarter Ending	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25
Deposited Mt	0.59	0.65	0.65	0.81	0.81	0.79	0.80
Remaining Mt	4.69	4.04	3.40	2.59	1.78	0.99	0.20

10.2 Future Tailings Storage

The LOM tailings for the Reserve Case are 26.9 Mt and the Production Target are 30.97 Mt.

Options for tailings storage for both cases were reviewed and are discussed below.

10.2.1 TSF K

The original design for TSF K was in four stages, with three downstream raises to a final elevation of 537 mRL. Golder Associates Pty Ltd (Golder) completed a Design Report for TSF K in January 2019[9] before proceeding with the detailed design for Stage 1.

The fill volume for the downstream raise embankment is significant and incurs considerable cost to construct. As part of WMC's 2022 Stage 3 PFS, Golder were engaged to conduct an options assessment for the future lifts of TSF K above 518.5 mRL. The planned throughput was 2 Mtpa. Four options were presented as below:

- Option 1: Downstream raises.
- Option 2: Centreline raises in 2.5 m lifts.
- Option 3: New embankment to the approved footprint and upstream raises in 2.5 m lifts.
- Option 4: Upstream raises from the existing embankment in 2.5 m lifts.

The cross-sections for each of the options are shown in Figure 10-2.

[9] 18112831-003-R-RevA, Design Report to Support Application for Tailings Storage Facility K, Golder Associates Pty Ltd, January 2019

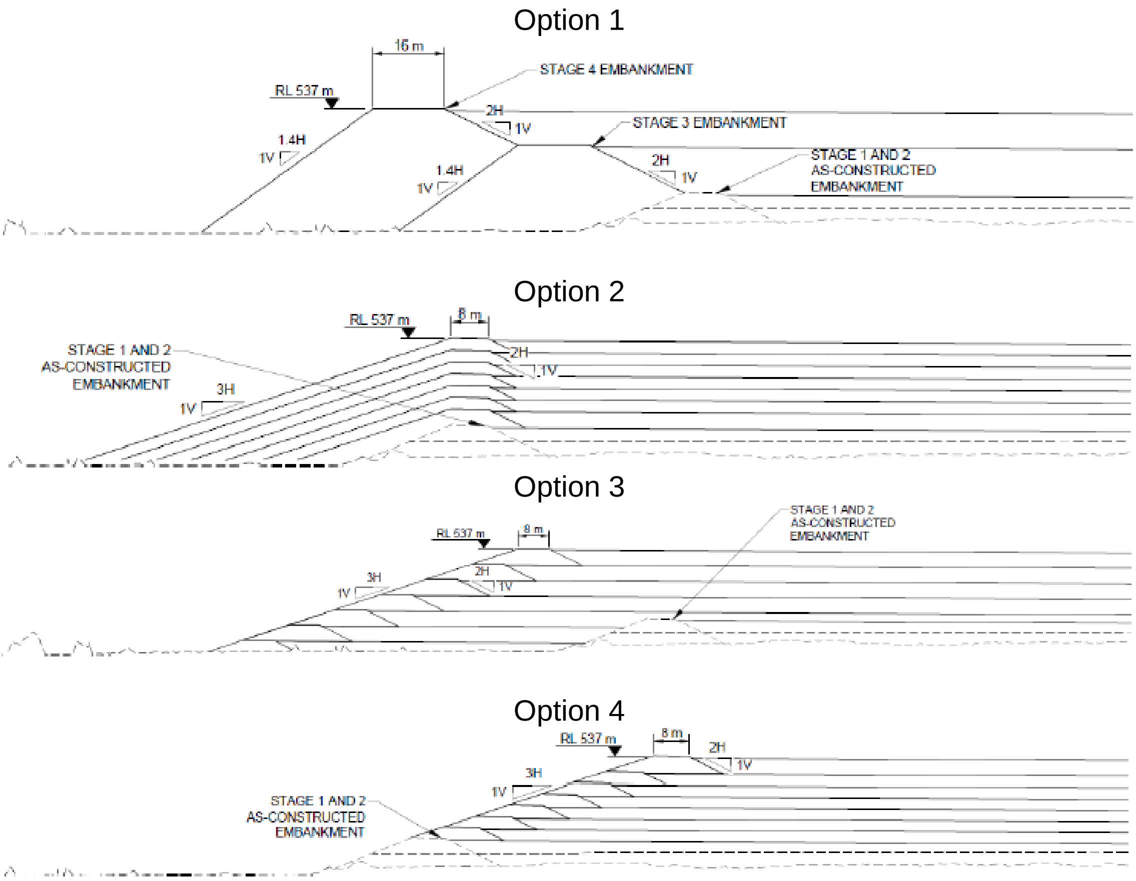


Figure 10-2: TSF K Options Cross-sections

WSP, formerly Golder, was engaged in August 2023 to update the options assessment for the planned throughput of 3.2 Mtpa. The embankment volumes, storage capacities and rate of rise for the different options are summarised in Table 10-2. The options assessment is provided in Appendix G1.

Table 10-2: TSF K Options Assessment Embankment Volumes and Storage Capacities (after 518 mRL)

Option	Embankment Fill Volume (m^3)	Storage Capacity (Mt)	Storage Life (years)	Average Rate of Rise (m/y)
1	6,300,000	21.4	6.5	N/A
2	4,800,000	18.8	5.8	3.3
3	1,900,000	27.0	8.3	2.4-2.9
4	1,000,000	16.5	5.1	3.3-4.3

WSP's analysis reviewed the technical aspects of each option, particularly the rate of rise, but did not estimate construction costs for each of the options.

The rate of rise is the height difference by which a tailings beach increases over time and is often used in tailings design practice as a limiting rate. Too high a rate is a concern. For gold tailings, an annualised rate of rise of <2.5 m/year is widely adopted as a maximum acceptable value. [10] [11]

The rate of rise over time is shown in Figure 10-3 for the different options. The rate of rise is not applicable for Option 1 as it is a downstream raise and is not constructed on the deposited tailings. The rate of rise for the other three options, which are constructed on previously deposited tailings, exceed the maximum acceptable value of 2.5 m/year. As Options 2, 3 and 4 all exceed the maximum acceptable rate of rise, WSP recommended progressing Option 1.

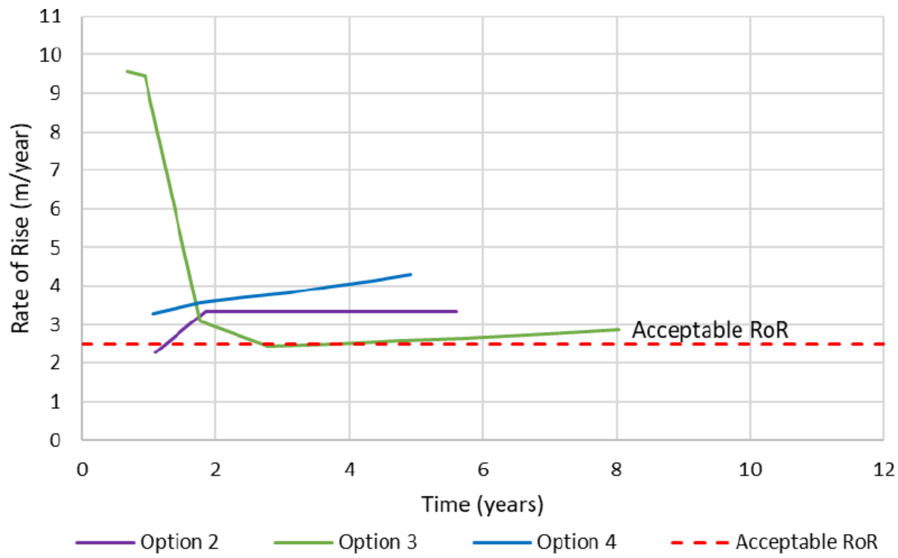


Figure 10-3: TSF K Options Assessment Rate of Rise for 3.2 Mtpa

WSP also completed modelling for each of the options by reducing the throughput to keep the rate of rise below 2.5 m/year. The results are presented in Figure 10-4. Option 1 is able to sustain 3.2 Mtpa as the rate of rise is not applicable for Option 1. For Options 2 and 4, annual throughput must be less than 2.5 Mtpa to keep the rate of rise below 2.5 m/year. Option 3 can accommodate 3.2 Mtpa, although is limited to 0.9 Mtpa for the first few years while the area between the inner and new outer embankment is filled with tailings.

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[10] Chapman, P.J. and Williams, D.A. (2018) The importance of rate of rise in life-of-mine planning of an upstream raised TSF – a case study, Proceedings of Mine Waste and Tailings 2018, Brisbane, pp. 350-360.

[11] International Commission on Large Dams (1995). Tailings Dams. Transport Placement and Decantation, Bulletin 101, pp 56-57.

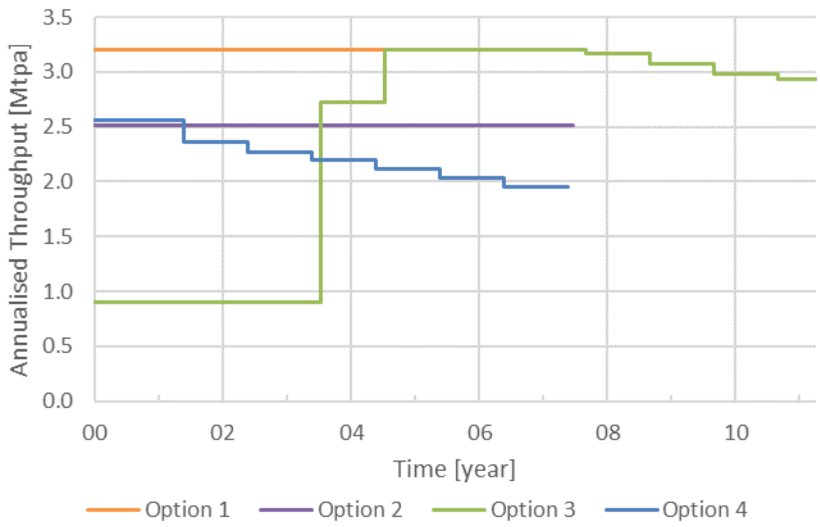


Figure 10-4: TSF K Options Assessment Annualised Throughput at 2.5 m/y Rate of Rise

WSP also commented on the construction considerations for each option and emphasised that while a reduction in throughput might keep the rate of rise below 2.5 m/year, Options 2, 3 and 4 will have other challenges due to available deposition area, constructability challenges and redundancy planning without having additional cells or areas to deposit tailings to during construction.

Based on the rate of rise and constructability considerations, WSP recommended Option 1 for the planned throughput increase to 3.2 Mtpa. Alternatively, throughput would need to be limited to <2.5 Mtpa to keep the rate of rise below 2.5 m/year.

While Option 1 is the technically recommended option for a throughput of 3.2 Mtpa it also incurs the highest construction cost due to the significant embankment volume of 6,300,000 m³. For comparison, the embankment volume for the crest lift from 512 to 518.5 mRL was 611,000 m³ at an estimated cost of A$13.16M as per WMC's Capital Expenditure Request. This equates to $21.53/m³ of embankment volume and $2.19/t of tailings stored. Assuming a cost of $20/m³, which is comparable with some of the previous TSF J lifts, an estimate of the construction cost for each option is provided in Table 10-3.

Table 10-3: TSF K Options Cost Estimate Assuming A$20/m³ of Embankment Volume

Option	Embankment Fill Volume (m³)	Storage Capacity (Mt)	Undiscounted Cost (A$M)	Cost per Tonne Stored (A$/t)
1	6,300,000	21.4	126	5.89
2	4,800,000	18.8	96	5.11
3	1,900,000	27.0	38	1.41
4	1,000,000	16.5	20	1.21

Option 1 was used for the Reserve Case as it can sustain throughput at 3.2 Mtpa for the LOM. The combined storage capacity of the existing TSF K (4.7 Mt as of the start of January 2024) and Option 1 (21.4) is 26.1 Mt, which is close to the required 26.9 Mt for the Reserve Case. The remaining 0.8 Mt will be stored as in-pit tailings with sufficient volume in Golden Age pit for 1.7 Mt.

For the Production Target, the required tailings storage is 31.0 Mt. Except for Option 3, the combined storage of the existing TSF K (4.7 Mt) and Option 1, 2 or 4 do not have enough capacity for the required LOM tailings. Further, Option 3 cannot sustain throughput at 3.2 Mtpa, particularly for the first three and half years when the deposition rate is limited to 0.9 Mtpa. Hence, an additional tailing storage facility is required to supplement TSF K and sustain throughput at 3.2 Mtpa. Supplemental storage options are discussed further below.

10.2.2 TSF J

TSF J had previously been raised to 515.0 mRL in 2019 and has been at capacity since then. There is scope for one final lift to 518.0 mRL, with initial designs previously prepared by Knight Piésold. The lift to 518.0 mRL was estimated to provide an additional 1.8 Mt of storage capacity, which represents over half a year of storage life for a throughput of 3.2 Mtpa.

Considering the proposed mining cutback of East Pit and the planned reprocessing of TSF H, it is not recommended to progress the final lift of TSF J in the medium term. Furthermore, the additional storage capacity is limited. This option has therefore been rejected.

10.2.3 In-Pit Storage Options

Wiluna has historically conducted in-pit tailings backfill including Adelaide, Golden Age, Gunbarrel North, Gunbarrel South, Moonlight, Republic South and Squib. The Republic South in-pit tailings have been closed and capped, and the Adelaide, Moonlight and Squib pits are possible deposits for tailings reprocessing. The Golden Age in-pit tailings were mostly remined in 2020-2021 in preparation for mining of a Golden Age Cutback.

Two options for in-pit tailings were considered in WMC's 2022 Stage 3 PFS, including the Golden Age pit and the Matilda pits, however the concept did not progress further as it was concluded that the combined storage capacity of TSF K Option 3 and the final lift of TSF J could sustain operation until 2038. This analysis was based on a throughput in the Stage 3 PFS of 2 Mtpa.

Given the planned throughput increase to 3.2 Mtpa, in-pit tailings have been reviewed to supplement the options of TSF K. It should be noted, however, that in-pit tailings storage risks sterilising potential future mineral resources. A 'Sterilisation report submission form for In-pit waste/tailings disposal proposals' needs to be submitted to the Department of Mines, Industry Regulation and Safety (DMIRS).

In WMC's 2022 Stage 3 PFS, a cutback of Golden Age was considered as was in-pit tailings storage in the existing Golden Age pit. As of November 2023, the Golden Age Cutback has not been mined and is not in the current mine plan. The storage capacity of the existing Golden Age pit was estimated to be ~1.7 Mt of tailings. In-pit tailings storage in the Golden Age pit is a viable short-term option and supports the capacity required for ore reserves.

The Matilda M1 and M2 pits were previously reviewed as part of an options study by Coffey Geosciences Pty Ltd (Coffey) in 2004[12], which compared in-pit tailings of the Matilda pits to a

[12] P6602.02-AA rev0, Tailings Storage Facility Options Study Wiluna Operation, Coffey Geosciences Pty Ltd, August 2004.

new above ground paddock facility. The storage capacity of the Matilda pits were greater than a new paddock facility at 11.0 Mt compared to 6.6 Mt, but the capital and operating costs were higher at A$3.95M and $0.99/t compared to A$2.34M and $0.89/t. The study recommended the new paddock facility due to the lower cost.

The Matilda pits were reviewed as part of this PFS for additional tailings storage. An estimate for the capital cost was estimated to be in excess of $10M. It is also noted that the current published mineral resource is 2.14 Mt at 2.13 g/t for 147 koz of contained gold would be sterilised by in-pit tailings. Developing in-pit tailings storage at Matilda would require hydrological and geotechnical work and permitting approvals.

In-pit tailings storage at the Galaxy pit were also considered. In terms of mineral resource, in-pit tailings storage in the Galaxy pit is preferred to the Matilda pits as the current mineral resource for the Galaxy area is lower at 15 koz of contained gold. However, the capital cost is expected to be like Matilda due to a similar pipeline distance and there is reduced storage capacity (Blackham's 2016 Mining Proposal for the Galaxy pit planned to mine 4.8 Mt).

For the Adelaide, Moonlight and Squib pits, if the current tailings are remined and reprocessed, the pits could be used for in-pit tailings storage in the future. However, consideration should be made of sterilising future resources again.

The most viable option for in-pit tailings in the short term are the Golden Age and Matilda pits. The capacity of the Golden Age pit is relatively small at approximately 1.7 Mt, although could be used for the remaining 0.8 Mt required for the Reserve Case. The volume of the Matilda pits is considerable and could be used to supplement TSF K for the Production Target. It should be noted, however, that using the Matilda pits as in-pit tailings will sterilise the current known and potential future mineral resources. Further work on tailings storage at Matilda pits will continue in the next phase of the project.

10.2.4 New Facility "TSF L"

The option of a new above ground facility to supplement TSF K was developed, with the new facility nominally referred to as TSF L. A scoping study was completed in December 2023, which included onsite scoping of possible locations for a new TSF. The scoping study report is provided in Appendix G2.

Following an initial screening of six different sites as shown in Figure 10-5, two sites were shortlisted for conceptual design and an economic trade-off conducted. Following the review, Site A was selected as the preferred location. Site A was designed adjacent to TSF K so that one side of TSF K could be used as a common embankment and reduce the construction cost as only three sides would need to be constructed. Site A was designed in stages with a combined storage capacity of 16 Mt. The construction cost was estimated to be $19.8M (±35%).

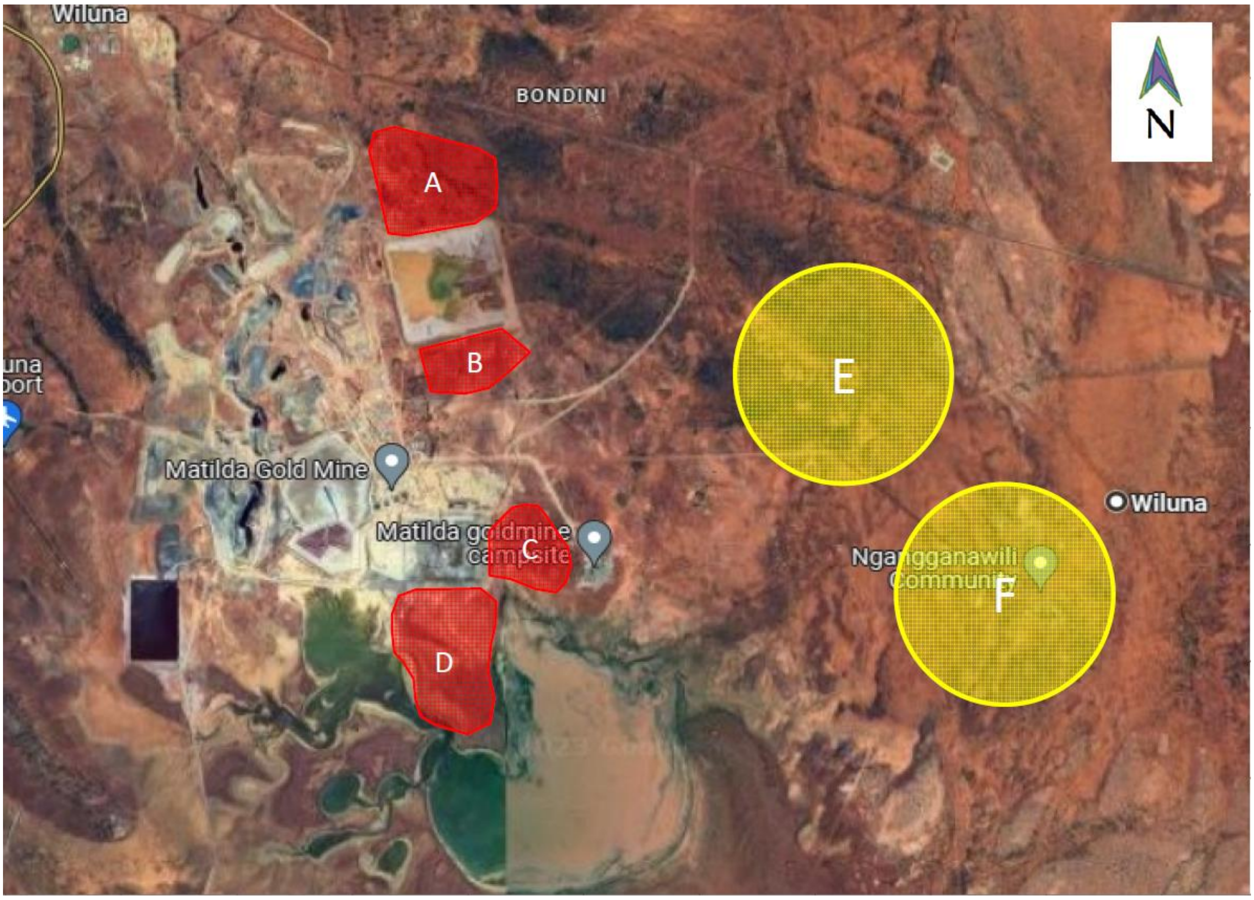


Figure 10-5: Locations for a New Above Ground Tailings Storage Facility

The design from the scoping study has been used to review and evaluate different combined options to supplement TSF K. The detailed design for the new TSF will be progressed in the next stage of study.

10.2.5 Combined Options

As TSF K alone does not have enough storage capacity for the Production Target, several different combined options have been considered. There are the different options for TSF K, which can be supplemented by a new above ground TSF or Matilda in-pit tailings.

A summary of the shortlisted options is provided in Table 10-4 and discussed in more detail below.

Table 10-4: TSF Combined Options Storage Capacity and Cost Estimate

Option	Tailings Stored (Mt)				Undiscounted Cost (A$M)	Cost per Tonne Stored (A$/t)
	Existing TSF K	TSF K Option	TSF L /In-Pit	Combined		
Option 1 + New TSF	4.7	21.4	6.3	32.5	142	4.38
Option 3 + New TSF	4.7	19.2	9.6	30.8	49	1.46
Option 4 + New TSF	4.7	16.5	9.6	32.5	38	1.24
Option 3 + Matilda	4.7	16.0	11.0	31.7	44	1.38

10.2.5.1 TSF K Option 1 & New TSF

Based on the rate of rise, the only standalone option that can sustain throughput at 3.2 Mtpa from 2025 is Option 1. Option 1 is the original design for TSF K, which was planned in four stages with Stages 2-4 as downstream raises. The timing for detailed design and permitting should be accelerated compared to the other options. This also removes any timing risk for the design and permitting of the new TSF, as TSF K Option 1 can sustain throughput at 3.2 Mtpa.

For illustrative purposes, TSF K Option 1 is shown to be filled first before constructing the new TSF as shown in Figure 10-6. Construction of the new TSF could be brought forward once the design and permitting is approved. The storage capacity of TSF K Option 1 is 21.4 Mt with the remainder stored in the new TSF.

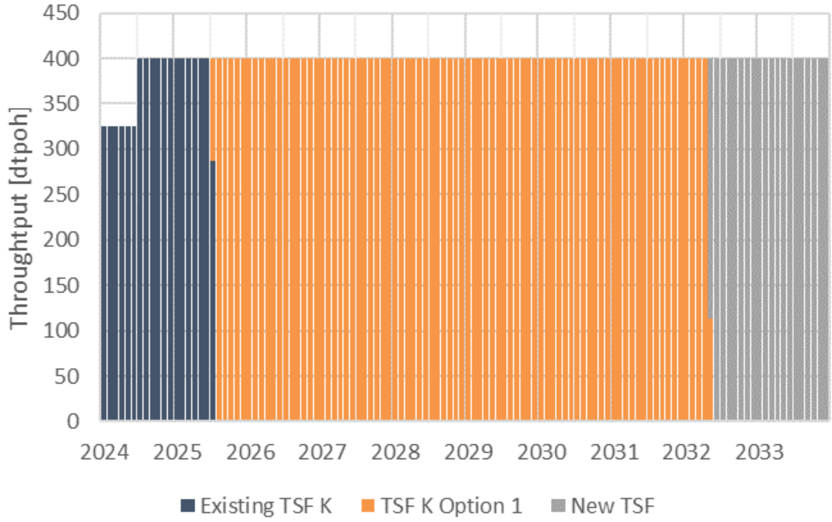


Figure 10-6: Throughput for TSF K Option 1 and New TSF

The downstream raises on TSF K incur significantly higher construction costs than the two upstream options as shown in Table 10-2 and Table 10-3, above. The estimated quarterly cost profile for Option 1 and a new TSF is presented in Figure 10-7.

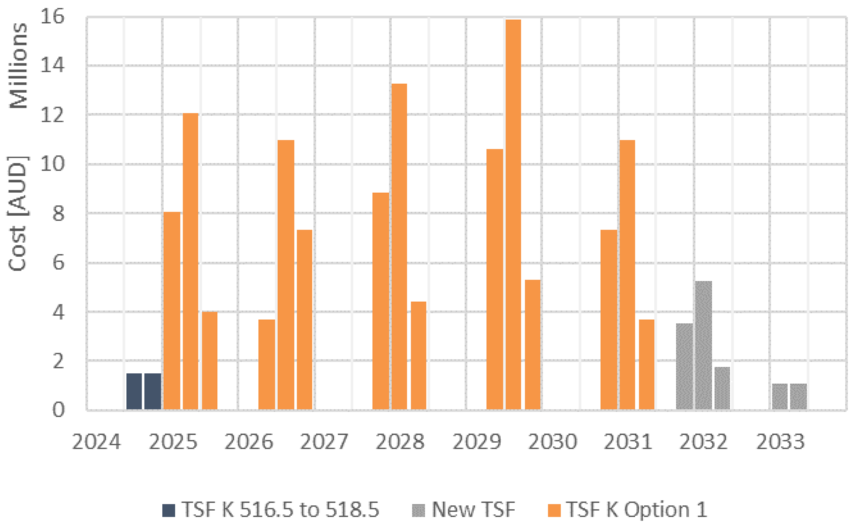


Figure 10-7: Quarterly Estimated Capital Cost for TSF K Option 1 and New TSF

Based on the new TSF scoping study, the construction cost for a new TSF is less than the downstream raises of TSF K. If the design and permitting of a new TSF is approved sufficiently early, construction of the new TSF could be brought forward, and subsequent raises of TSF K changed to a more cost-effective option. For example, if after the first downstream raise of TSF K from 518.5 to 522.5 mRL is completed, the design and permitting for a new TSF is approved, subsequent raises of TSF K could change to an upstream option. The cost of the first downstream raise from 518.5 to 522.5 mRL is considerable, estimated to be $24M for 1.2 Mm^3 of embankment volume. Subsequent raises would be similar as shown in Figure 10-7.

10.2.5.2 TSF K Option 3 & New TSF

Option 3 is the construction of a new outer embankment, which would limit tailings discharge into TSF K to 0.9 Mtpa for approximately the first 3.5 years to keep the rate of rise below 2.5 m/year. The majority (2.3 Mtpa) of tailings would be discharged into the new TSF during this time. Tailings discharge into TSF K could then be increased to 2.7 Mtpa for approximately one year before increasing to 3.2 Mtpa. The estimated tailings split between the two facilities is presented in Figure 10-8.

This combined option is dependent on the new TSF for approximately the first 4.5 years. There is timing risk associated with approval and construction of a new TSF that needs to be considered as tailings discharge rate into TSF K is limited for the first few years.

Once construction of the new outer embankment is completed, TSF K would proceed as upstream raises. Upstream raises can have constructability challenges as outlined above. Having the new TSF available as a second facility for tailings discharge is advantageous as it reduces this risk.

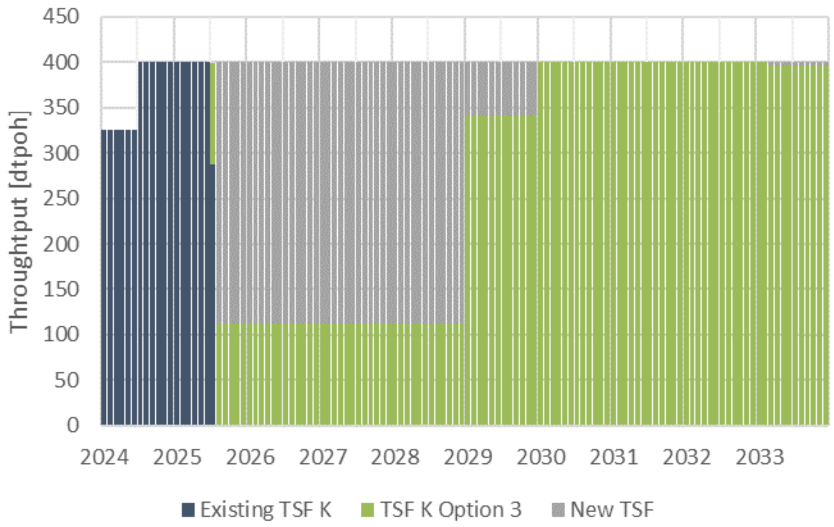


Figure 10-8: Throughput for TSF K Option 3 and New TSF

The estimated quarterly cost profile for Option 3 and a new TSF is presented in Figure 10-9. The cost profile is skewed towards the first few years due to the construction cost of the new TSF as well as construction of the new outer embankment of TSF K.

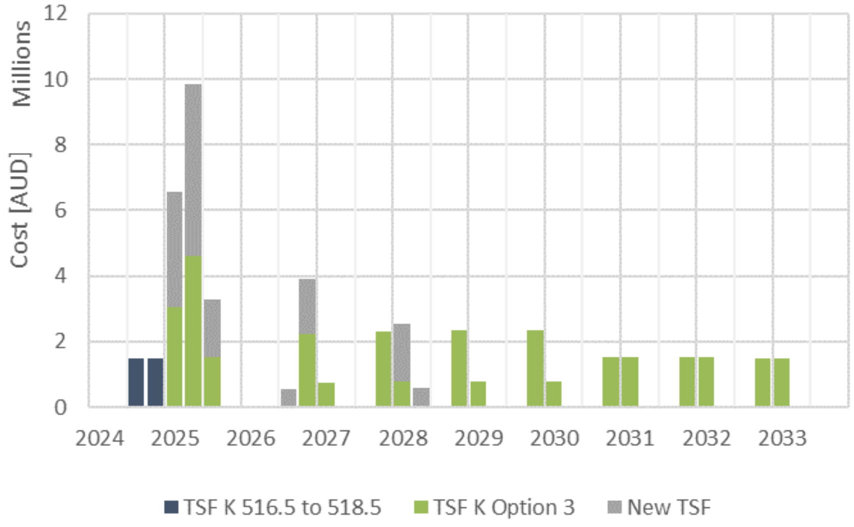


Figure 10-9: Quarterly Estimated Capital Cost for TSF K Option 3 and New TSF

10.2.5.3 TSF K Option 4 & New TSF

Option 4 entails upstream raises on the existing embankment. Tailings discharge for Option 4 is limited to 2.5 Mtpa to keep the rate of rise below 2.5 m/year, hence the new TSF would be required from the late 2025 to sustain throughput at 3.2 Mtpa. As two facilities would be available, the tailings could be split between the two facilities, however, for illustrative purposes Figure 10-10 shows the maximum tailings discharge into TSF K as limited by the rate of rise with the remainder discharged into the new TSF.

Like the combined Option 3 and new TSF above, there is timing risk associated with approval and construction of a new TSF. Tailings discharge for Option 4, however, is higher than the first few years of Option 3.

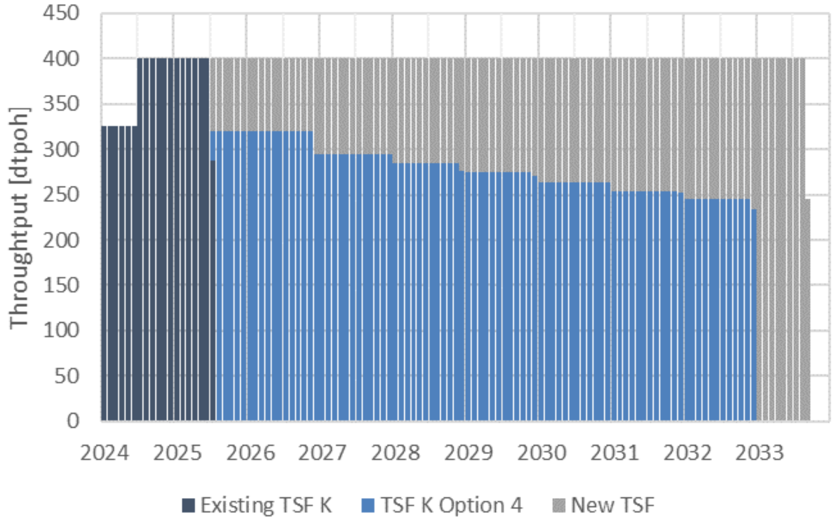


Figure 10-10: Throughput for TSF K Option 4 and New TSF. The Tailings Split between the Two Facilities is Assumed.

The estimated quarterly cost profile for Option 4 and a new TSF is presented Figure 10-11. The cost profile is skewed towards the first few years due to the construction cost of the new TSF.

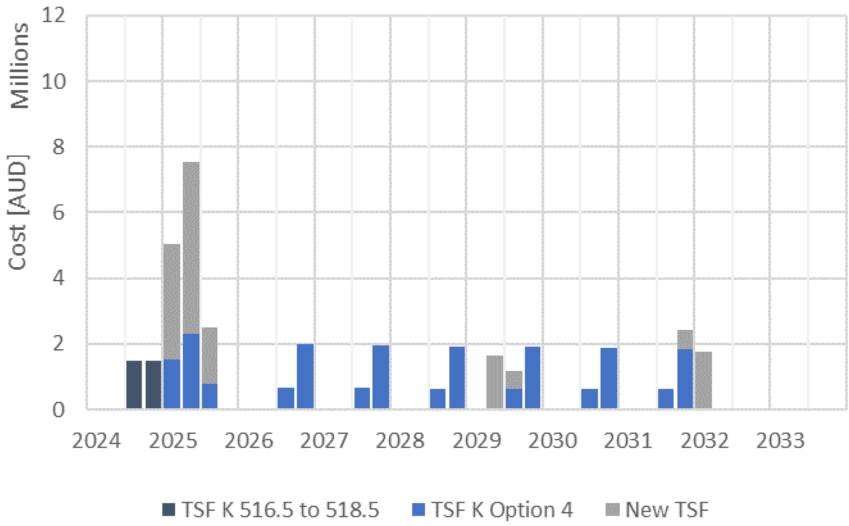


Figure 10-11: Quarterly Estimated Capital Cost for TSF K Option 4 and New TSF

10.2.5.4 TSF K Option 3 & Matilda In-Pit

The storage capacity of the Matilda M1 and M2 pits is estimated to be 11 Mt, hence, this could supplement TSF K Option 3 to provide comparable storage for the LOM tailings. As the tailings discharge into TSF K would be limited to 0.9 Mtpa for the first few years as outlined above, the majority (2.3 Mtpa) of tailings would be discharged into the Matilda pits during this time. The estimated tailings split between the two facilities is presented in Figure 10-12. The Matilda pit would also be required during construction of the upstream raises of TSF K.

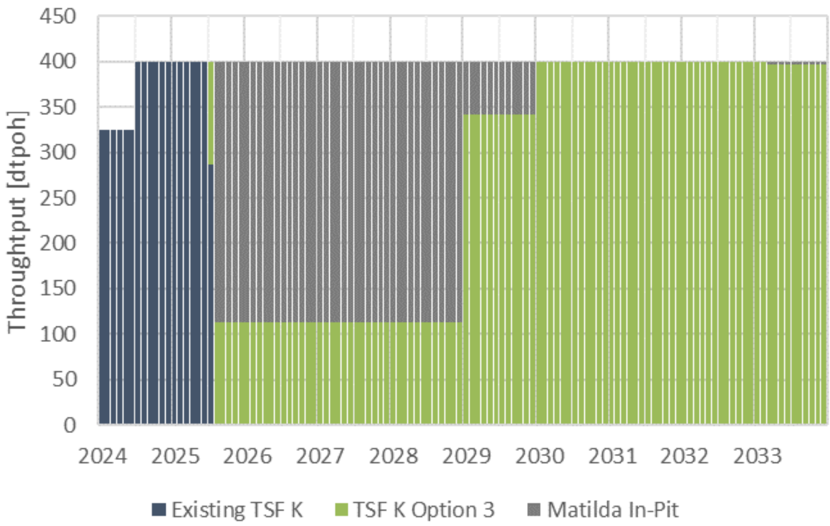


Figure 10-12: Throughput for Combined TSF K Option 3 and Matilda In-Pit

The estimated quarterly cost profile for Option 3 and Matilda in-pit is presented in Figure 10-13. The cost profile is skewed initially towards the first few years due to the construction cost of Matilda pipelines as well as construction of the new outer embankment of TSF K. Compared to the other combined options, there are no additional capital costs for Matilda thereafter. The operating cost of the decant pump at Matilda may be slightly higher due to the increased pumping distance compared to the decant return from the new TSF.

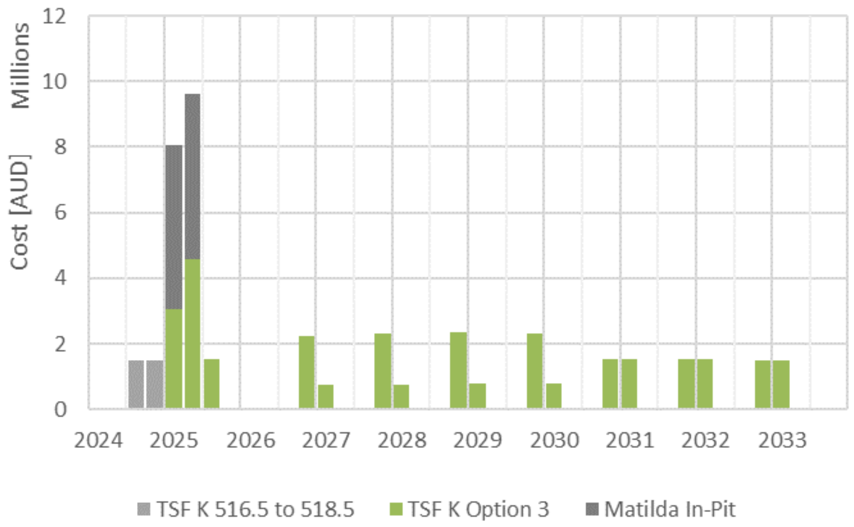


Figure 10-13: Quarterly Estimated Capital Cost for TSF K Option 3 and Matilda

As noted above, using the Matilda pits for in-pit tailings will sterilise the current known and potential future mineral resources.

10.3 Recommended Option

10.3.1 Reserve Case

The Reserve Case used TSF K Option 1, supported by in-pit tailings disposal in Golden Age pit. Option 1 sustains throughput at 3.2 Mtpa for the LOM. The combined storage capacity of the existing TSF K (4.7 Mt as of the start of January 2024) and Option 1 (21.4 Mt) is 26.1 Mt, with the remaining 0.8 Mt to be stored in Golden Age pit. The capacity of the Golden Age pit is estimated to be 1.7 Mt.

For illustrative purposes, TSF K Option 1 is shown to be filled first before filling Golden Age as shown in Figure 10-14. The estimated quarterly cost profile for Option 1 is presented in Figure 10-15.

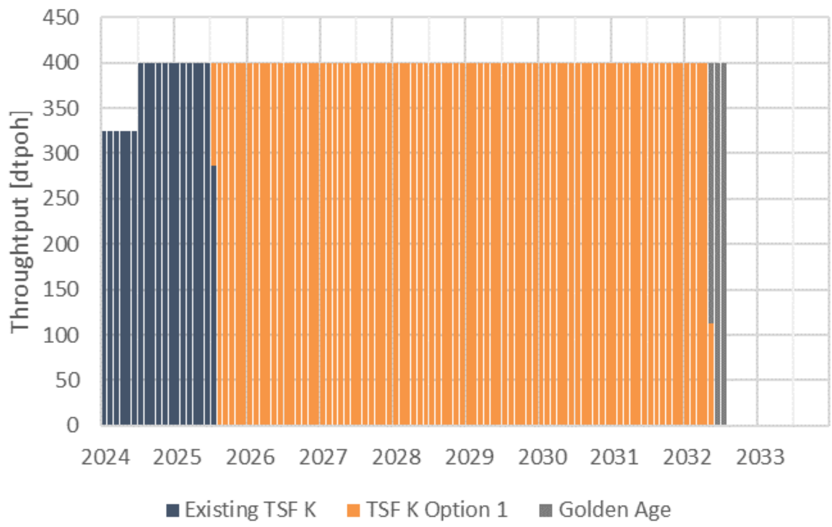


Figure 10-14: Throughput for Combined TSF K Option 1 and Golden Age In-Pit

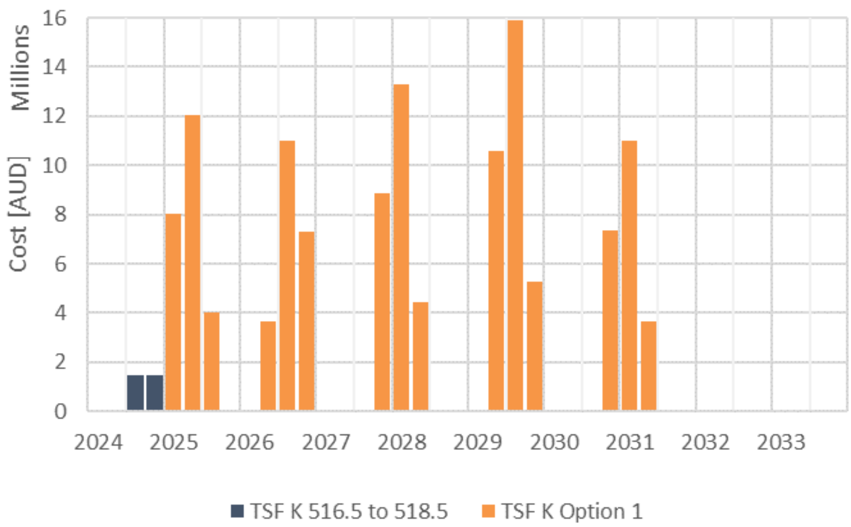


Figure 10-15: Quarterly Estimated Capital Cost for TSF K Option 1 (and Golden Age)

10.3.2 Production Target

The recommended option for the Production Target is Option 4 and a new TSF (section 10.2.5.3). This was found to have lowest capital cost (Table 10-4) but does have timing risk for permitting and approval for the new TSF. This risk can be mitigated by the following options:

- The Golden Age pit could be used for in-pit tailings storage for approximately six months (1.7 Mt).
- A downstream raise of TSF K could be completed to 522.5 mRL in the short term. After the new TSF is approved and constructed, subsequent raises of TSF K could change to a more cost-effective option.

11 CALCRETE

11.1 Introduction

Calcrete is a neutralising agent that can be mined on leases owned by Wiluna Mining Corporation. Calcrete was previously used during the past BIOX operation and it is proposed to use calcrete to support the planned restart of the BIOX circuit. Calcrete is dosed into the BIOX reactors and neutralisation circuits as a pH modifier as a cheaper alternative to purchased limestone.

11.2 Calcrete Requirements

The annual calcrete requirement for the BIOX circuit is estimated to be 45,000 tpa. The average consumption rate is 60 kg calcrete / t float feed. This equates to 30,000 BCM per year at a density of between 1.2 and 1.4 t/m^3.

The quality of the calcrete required is nominally 22.4% CaO as specified in the process design criteria in Appendix F1.

11.3 Calcrete Availability

The calcrete resource lies within the East Murchison mineral fields. The nearest source of calcrete is located approximately 5 km southwest of the Wiluna processing plant, along the Matilda haul road. Calcrete in this area is covered by approximately 300 mm of topsoil and is expected to be present in 1-3 m thick layers. The calcrete is likely to be soft and relatively easy to excavate. Figure 11-1 shows the multiple footprints from where calcrete is available to be excavated from. Calcrete resources within these footprints are estimated to be over 3 Mt.

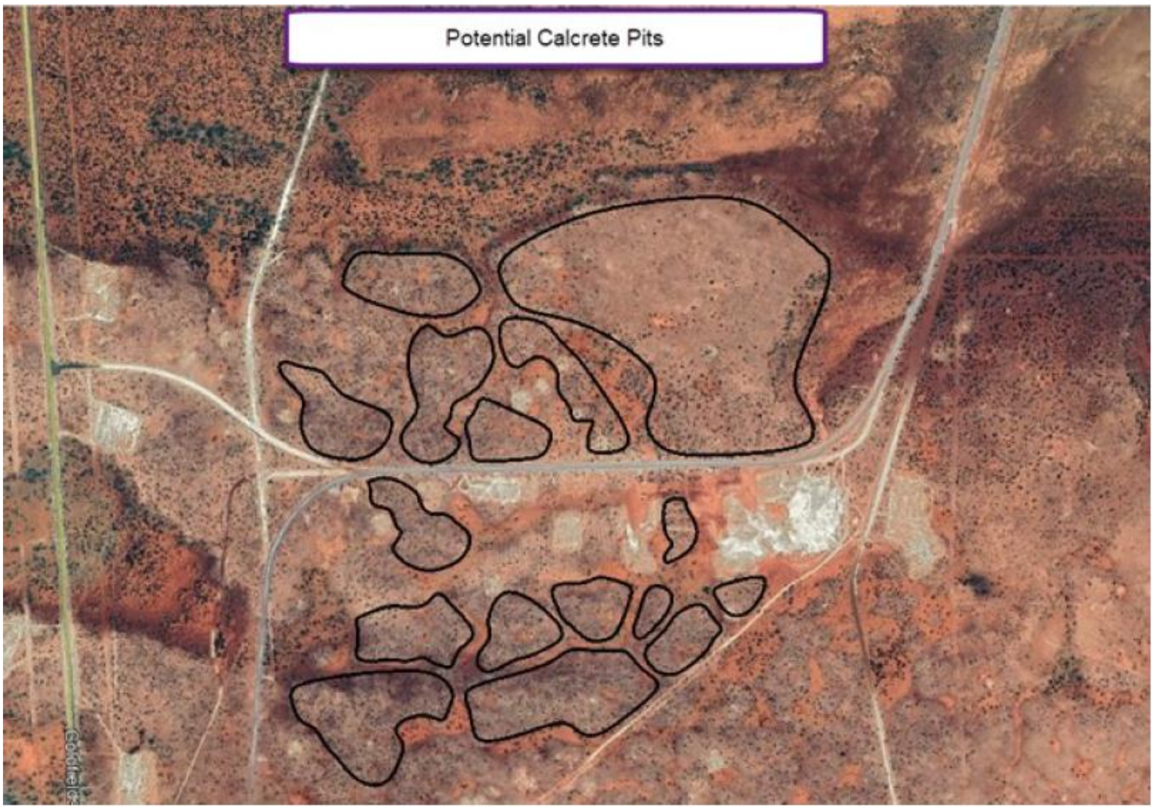


Figure 11-1: Potential Northern Calcrete Pits

11.4 Calcrete Mine Plan

Calcrete would be campaign mined and crushed/screened to create a stockpile of material suitable for use in treatment operations. Mining would involve topsoil stripping and stockpiling, dozer ripping, crushing and screening and transport to the treatment plant.

The topsoil removed is used to rehabilitate the area.

Equipment required for mining are D8 Dozer, 50 T excavator/loader & 2-40T articulated dump trucks. Mining will also require use of auxiliary equipment such as water truck, service truck and light vehicles.

11.5 Calcrete Crushing & Screening

A mobile crushing and screening plant would be set up near the active calcrete pit for crushing calcrete to -10 mm. The mobile plant would be capable to crush and screen approximately 2,000 t of calcrete per shift.

11.6 Calcrete Haulage

Road trains would be used for hauling the crushed calcrete from the crusher to the calcrete stockpile near the processing plant. Calcrete haulage to this stockpile would be done in campaigns and would be in line with requirements for the BIOX circuit.

11.7 Calcrete Cost

The cost of calcrete was estimated as $20/t as follows:

- Ripping Cost - $2.5/t
- Crushing & Screening cost - $15/t
- Hauling - $2.50/t
- Total $20/t

11.8 Calcrete Approval

Calcrete had previously been mined during previous BIOX treatment campaigns at the Northern Calcrete Area and Southern Calcrete Area, shown below in Figure 11-2.

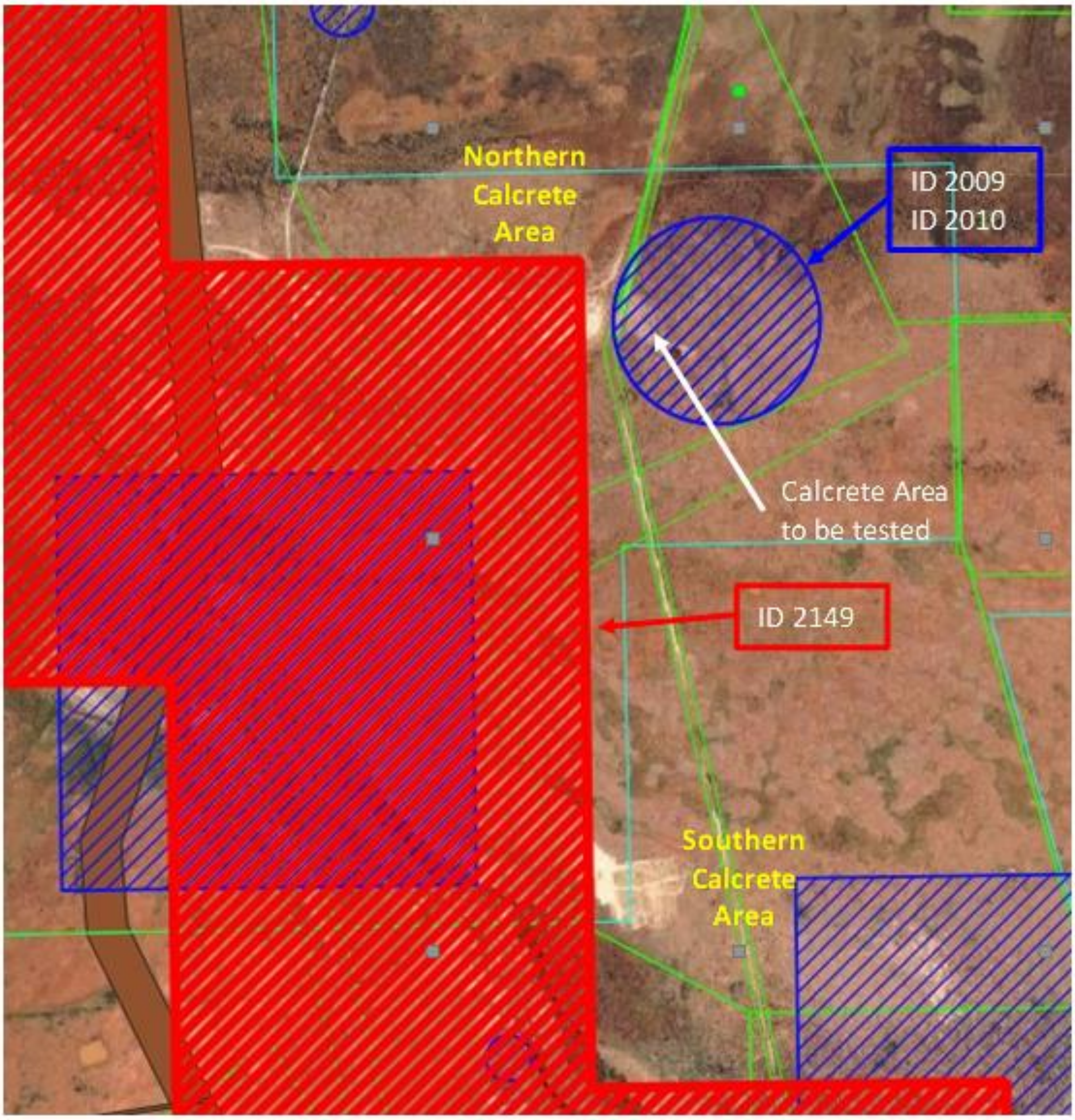


Figure 11-2: Past Calcrete Mining Areas, showing Registered Heritage Sites

Mining occurred at the Northern Calcrete Area under a Supplementary Notice of Intent (pre-cursor to the current Mining Approval) approved in 1998. The quality of much of the material covered by the Supplementary NoI proved to be poor, with low calcrete and higher silcrete content than desired. A re-allocation of the area was applied for and granted, shown below in Figure 11-3. This Supplementary NoI with re-allocated area remains in effect.

Registered Heritage Areas cover much of the Northern Calcrete Area, including the re-allocated area east of Duke's Corner, for which investigation continues into the nature and areal extent of the actual location of the artefacts, to assess the likelihood of being able to excise some area from the usual buffer zone placed around these localities under normal s18 processes.

To meet longer term calcrete requirements, and for risk management, Mining Approval will be sought for additional calcrete mining areas. This will entail the full approval process, including flora surveys, subterranean fauna surveys and heritage surveys. Existing surveys where available will be used to minimise the timeframe required for this approval process.

Mining has previously been carried out at the Southern Calcrete Area, which straddles the boundary to Registered Heritage Area 2149, shown above in red. At some point the mining lease which covered the Southern Calcrete Area became invalid or was dropped but has since been reinstated. When a lease is dropped any Mining Approvals which may be in place are automatically extinguished.

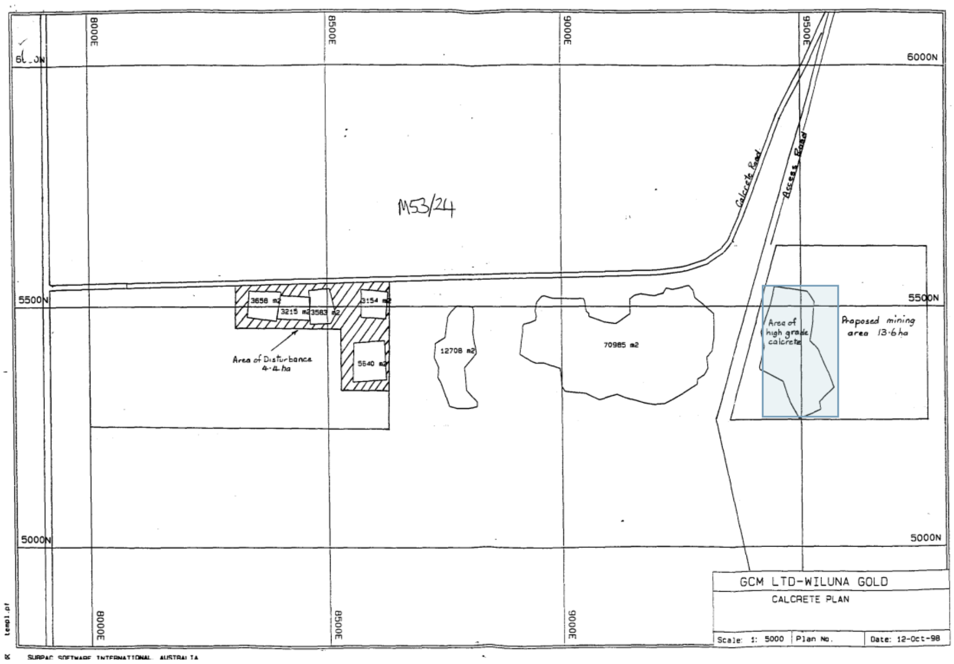


Figure 11-3: Approved Supplementary Notice of Intent, showing Re-allocated Area

To risk manage the possible eventuality that BIOX and flotation treatment extends beyond the currently anticipated mine life, or that calcrete of required thickness and quality is not available within the remnant approved area, Mining Approval should also be sought for the broader area shown in Figure 8.1 as well as the southern calcrete area previously mined by Apex.

12 INFRASTRUCTURE

12.1 Village Upgrade

As part of Wiluna's 2022 Stage 3 PFS, the capacity of the village would need to increase from 310 to 430 rooms to accommodate the additional employees required for the expanded process plant and underground operations. It was proposed to demolish accommodation blocks A-D and construct 75 four-off accommodation modules as shown in shown in Figure 12-1. A proposal was requested from Grounded Construction Group for this scope, with the cost estimated to be $19.1M. The proposal is provided in Appendix I1. Due to the scale of the demolition of the existing village, temporary modules would need to be hired during the construction which was estimated to cost $6.5M. Hence, the total cost for the village upgrade was $25.6M.

Figure 12-1: Plan View of Previous Proposed Expansion of the Wiluna Village

Based on the revised mining plan and no significant expansion of the processing plant, the capacity of the village does not need to increase. The estimated room requirements are presented in Table 12-1, which is within the capacity of the existing village. The underground mining headcount is a preliminary estimate based on a revised mining plan, and the open pit mining and processing headcounts sourced from sections 6.11 and 9.6.2.1. However, some of the accommodation blocks are due for rejuvenation, hence the scope of the village upgrade has been reduced from 75 to 25 four-room modules. This will be reviewed again in the next stage of study with an updated estimate for underground mining. The need to hire temporary modules should also be removed, but this will also be confirmed in the next stage of study based on the updated estimate and timing for total site room requirements.

Table 12-1: Estimated Village Room Requirements

Department	Headcount	Daily Rooms Required
Site Administration	10	5
Open Pit Mining & Surface Operations	236	118
Underground Mining	200	100
Processing & Maintenance	81	41
Total	527	264

12.1.1 Capital Cost Estimate

The capital cost for the revised scope of 25 four-room modules has been scaled based on the original proposal from Grounded. The revised capital estimate is provided in Table 12-2.

Table 12-2: Capital Cost Estimate for Village Upgrade

Item	Cost (A$)
Preliminaries	762,901
Earthworks (Bulk & Detailed)	824,351
Modular Building Supply	3,053,288
Transport	210,540
Building Site Works & Install	1,423,469
Utilities & Services	1,011,826
Demolition of Existing Village	389,990
Total	**7,676,366**

12.2 Wastewater Treatment

Wastewater onsite is currently collected and disposed of through either tanker removal or evaporation from a series of ponds. Tanker removal is ongoing and at considerable expense. Further, licensing of these types of facilities is anticipated to become more difficult over time.

A centralised wastewater treatment facility is proposed. A quotation was previously requested in the 2022 PFS from Tristar Water Solutions for a 500 person (125 m^3/day) treatment plant, at an installed cost of $1.5M. The capital cost estimate for the wastewater treatment installation is provided in Table 12-3. The quotation from Tristar Water Solutions is provided in Appendix I2. There could be an opportunity to reduce the size of the wastewater treatment plant and right-size it for a headcount less than 500 people, however, if underground mining is restarted the additional headcount for underground operations also needs to be considered.

Table 12-3: Capital Cost Estimate for Wastewater Treatment Plant

Item	Cost
Wastewater Treatment Plant	1,090,240
Electrical	100,000
Earthworks	112,500
Piping & Installation	200,000
Flights, Accommodation, Fuel & Project Management	45,000
Contingency (20%)	309,548
Total	1,547,740

12.3 Gas & Power

Power generation at Wiluna is a combination of gas and diesel fired generators. There are six gas generator sets for a combined 10.4 MW and three diesel generator sets for a combined 3.7 MW, as well as a 2 MW battery energy storage system for twelve-minutes of storage capacity. The generated electricity is distributed across site.

Gas is supplied and transported in accordance with a number of gas supply and gas transportation agreements. The agreements are extended on a two-year basis through variation agreements. Power is generated onsite in accordance with a power plant agreement.

- Gas supply agreement with Synergy, to supply gas to the Gorgon delivery point in northern Western Australia. The firm Maximum Daily Quantity (MDQ) is 1.8 TJ/d to January 2024.
- Gas transportation agreement with Australian Gas Infrastructure Group (AGIG), to transport gas from the Gorgon inlet point to the Goldfields Gas Pipeline (GGP) Interconnect outlet point at Yarraloola in the Pilbara region, through the Dampier to Bunbury Natural Gas Pipeline (DBNGP). The firm MDQ is 2.0 TJ/d to January 2024.
- Gas transportation with APA Group (Goldfields Gas Transmission), to transport gas from the Yarraloola receipt point to the Wiluna Compressor Station delivery point through the GGP. The firm MDQ is 1.3 TJ/d through to December 2023, with a further 0.5 TJ/d As Available.
- Gas transportation with APA Group, to transport gas from the Wiluna Compressor Station to the Wiluna Lateral delivery point. The firm MDQ is 3.6 TJ/d through to December 2022.
- Power plant agreement with Pacific Energy, formerly Contract Power. The Contract Maximum Demand is 14.1 MW through to April 2031.

The tailings reclaim scrubber is powered by a separate diesel generator. The site team plan to connect the scrubber circuit to the main power distribution. This would increase the site gas requirements but reduce the diesel consumption and hence overall cost.

12.3.1 Gas Supply and Transportation

During the 2022 sulphide campaign, the daily gas requirements were consistently up to the daily allowance of 1.8 TJ/d. After subtracting the Fuel Gas and System Use Gas of 0.05-0.06 TJ/d each, the gas delivered to the Wiluna Gold Delivery Stream was consistently up to ~1.7 TJ/d as shown in Figure 12-2.

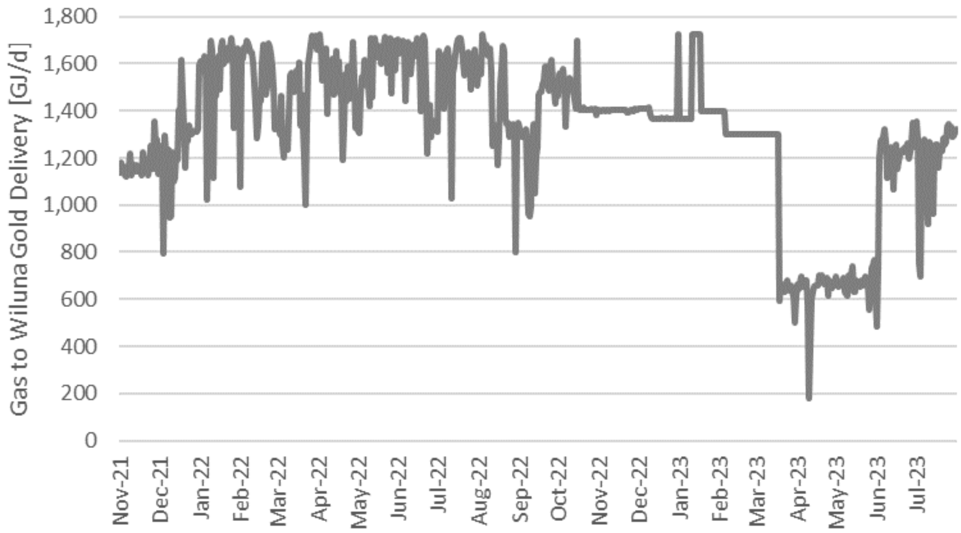


Figure 12-2: Daily Gas Exit at Wiluna Gold Delivery Stream from APA Contract Account

As the daily gas usage was consistently up to the daily allowance of 1.8 TJ/d, the gas supply and transportation agreements would need to be renegotiated to a higher rate to support the increase in power demand from restarting the BIOX circuit and underground operations. It is estimated that the gas supply and transportation agreements could increase to 3.1 TJ/d. While there is extra capacity already onsite with the diesel generators in the power plant, the cost of diesel is expensive and it is recommended to increase the gas supply instead.

Previously, there was a capacity constraint in the GGP, which may have limited the ability to increase the MDQ with APA Group, however, this was alleviated by the North Goldfields Interconnector Pipeline which was completed in July 2023.

12.3.2 Power Generation

During Apex operation from 2009-2013, power supply was unreliable with numerous site wide power outages on a frequent basis. This impacted operation of the process plant as well as underground, with frequent evacuations due to the loss of power. All generators were overdue for total or partial rebuilds which contributed to the unreliable power supply.

A new power plant facility was constructed in 2016 as part of the Build Own Operate Transfer power plant agreement with Contract Power Group, now Pacific Energy. As of June 2022, the agreement is for a Contract Maximum Demand of 14.1 MW to April 2031. This includes six gas generator sets for a combined 10.4 MW and three diesel generator sets for a combined 3.7 MW, as well as a 2 MW battery energy storage system for twelve-minutes of storage capacity. Power supply has been reliable with minimal outages.

Most of the power is generated by the gas generators as shown in Figure 12-3. During the 2022 sulphide campaign, site power averaged between 6-7 MW, which is within the capacity of the six gas generators, however, the gas supply and transportation was consistently up to the daily allowance. Hence, the diesel generators were used to supplement the power generation.

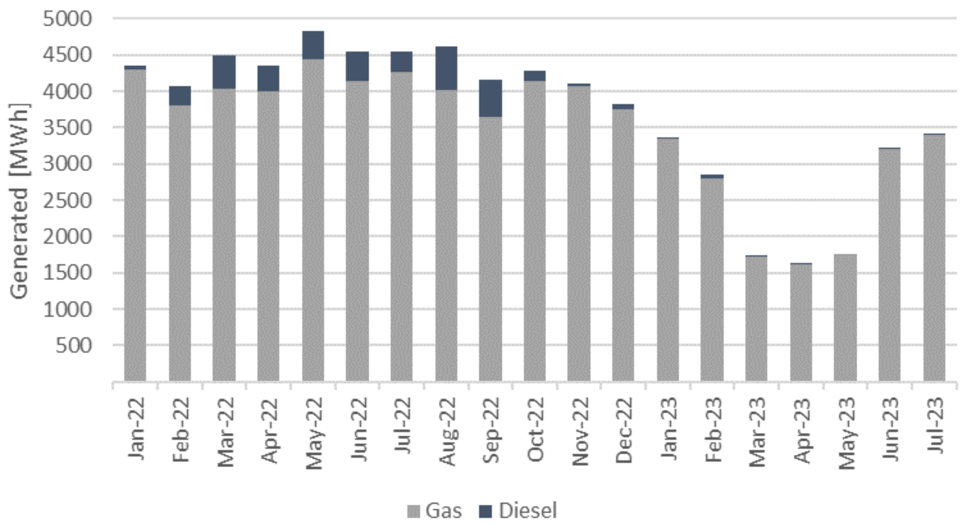


Figure 12-3: Power Generated by Generator Type. Source: Pacific Energy Monthly Report

With the restart of the BIOX circuit and underground operations, the site power demand is expected to increase to approximately 12.2 MW, which is within the installed capacity of the generators onsite, although exceeds the capacity of the gas generators. It is recommended to install an additional one or two gas generators onsite, as although there is capacity onsite with the diesel generators, the cost of diesel is considerably higher. The gas supply and transportation agreements will also need to be increased.

The power required for the different areas is tracked by kWh readings on the feeders at the power plant. Feeder 01 is the combined process plant MCCs, Feeder 02 is for admin, laboratory and warehouse combined, Feeder 03 is the flotation circuit and underground combined, and Feeder 101 is the grinding mills combined. The monthly MWh for the four feeders is shown in Figure 12-4.

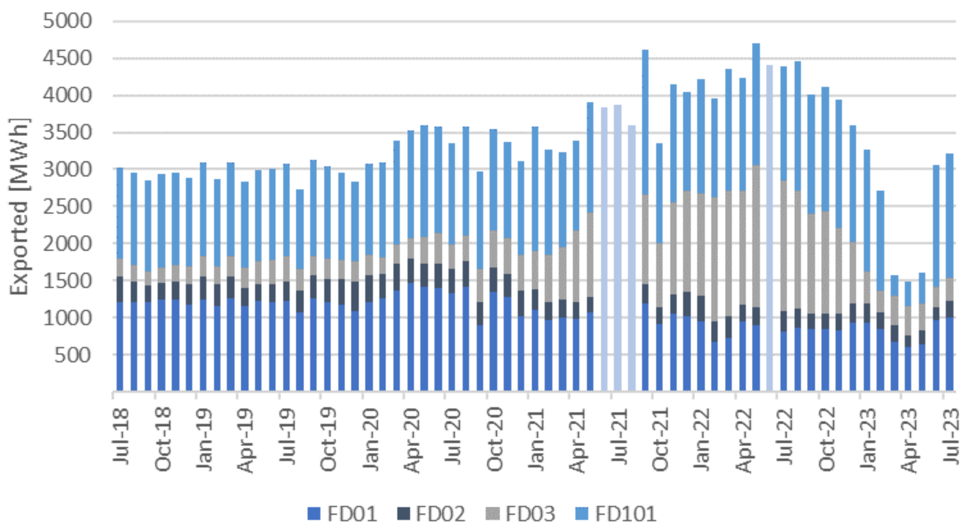


Figure 12-4: Monthly Power Exported by Feeder. Source: Pacific Energy Monthly Report

12.4 Water

The site water balance was discussed in Section 5.6 above.

The water balance for the grinding, flotation and BIOX process and village requires 185 m^3/h of low/medium chloride water, which is effectively the licenced limit of 187.5 m^3/h (1.5 GL/y) for the eastern borefield. The water requirements for the BIOX circuit are 106 m^3/h of low/medium chloride water, although 76 m^3/h could be recycled by a new neutralisation discharge thickener.

The water balance for the tailings retreatment at 400 tph requires 429 m^3/h of TSF decant return, mine dewatering water and final tailings thickener overflow.

13 HERITAGE, ENVIRONMENT AND PERMITTING

13.1 Mining Approvals

Under Western Australian legislation, Mining Approvals issued by the Department of Mines, Industry Regulation and Safety (DMIRS) are required for all mining activities being carried out at a mine site.

Mining Proposals are formulated and submitted for assessment by DMIRS, becoming Mining Approvals after all requirements are met (which may involve imposing conditions), which then permit mining activity to be carried out.

13.1.1 Existing Mining Approvals

Existing Mining Approvals held by Wiluna Mining cover the following areas:

- Tailings mining from Western Cell, adjacent to TSF C.
- Reclamation of material from heap leach dump.
- Construction and commissioning (commissioning includes operation for up to 6 months) of Wiltails processing up to 2.2Mtpa, including crushing, grinding, CIL leaching, flotation plant operation, tailings deposition in TSF K.
- TSF K Stage 2 construction to 518.5mRL.
- Underground mining operations at Bulletin and Happy Jack.
- Calcrete mining of a re-allocated area granted in 1998 (due to poor quality of material encountered in the original approved area), a portion of which has not been disturbed. Confirmation correspondence from DMIRS has been received that this re-allocation was granted and remains in effect. Registered Heritage Sites cover large portions of the approved calcrete mining area.

To re-commence underground mining at Bulletin and Happy Jack it will be necessary to submit a Mining Operation Notification – Re-start of Operations to the DMIRS Safety Inspectorate. This is a simple online process, and the Inspectorate will be requiring updated Ground Control Management Plan and other safety related information and documentation.

13.1.2 Mining Proposals

For the works which are planned within the Pre-feasibility Study, separate Mining Proposals are being developed covering:

13.1.2.1 General Mining and Treatment to 3.2Mtpa

The works covered under this Mining Proposal are:

- Open pit mining of West Lode cutback.
- Open pit mining of Bulletin Pit cutback.
- Mining of tailings from TSF C and TSF H.
- Tailings and ore treatment to 3.2Mtpa.

- Refurbishment and operation of BIOX plant.
- Operation of flotation treatment circuit.
- Various upgrades within the processing facility.
- TSF K Stage 3 construction and deposition.

East Lode cutback is excluded from this Mining Proposal due to concerns over delays to approval timeframe associated with demonstrating compliance to current geotechnical guidelines regarding proximity of the cutback to TSF H and TSF J. East Lode cutback will therefore be the subject of a subsequent Mining Proposal, which should be actively pursued to permit concurrent mining of East Lode with the West Lode and Bulletin Pit Cutbacks.

On advice from DMIRS Geotechnical Inspector, this Mining Proposal should include a description of what will be submitting for East Lode in the subsequent Mining Proposal, but explicitly exclude seeking current approval, and specify that separate and subsequent submission and approval will be sought.

On this basis we should also refer to future plans for GAC cutback, and that the interaction between WRL and pit profile will be addressed in a subsequent Mining Proposal.

With prompt provision of information for incorporation into this Mining Proposal document by the end of September, and the minimum number of minor variations to be incorporated along the way, the Mining Proposal is scheduled for submission to DMIRS in mid-October 2023.

13.1.2.2 Calcrete Mining

Calcrete material is required for blending with BIOX plant discharge material, for pH neutralisation, before further processing steps. This material will be required at the commencement of BIOX treatment of sulphide ore, as per the mining and BIOX plant refurbishment schedule.

Correspondence approving the re-allocation of calcrete mining area under the existing Supplementary Notice of Intent from 1998 has been received from DMIRS, which remains in full effect.

A request has been made to site to establish if any calcrete of suitable quality remains to be mined in this approved area and can be mined prior to BIOX treatment commencing.

Investigation continues regarding Registered Heritage Site ID 2009 which apparently covers this area. To excise part of this Registered Heritage Site will require approved s18 submission.

For risk management and contingency, as a matter of priority a Mining Proposal for further calcrete mining should also be pursued, to cover the event of extended sulphide ore treatment requiring additional pH neutralising material, and potential shortfall of suitable quantity and/or quality of material in existing approved areas.

Investigation of extent and applicability of existing flora surveys, stygofauna surveys and heritage surveys of the southern calcrete area is underway, to establish whether sufficient information is available to enable early submission of a Mining Proposal.

The Heritage Area Wiluna South 2 Site No 2009/2010 will need checking for overlap.

Figure 13-1 shows the proposed calcrete pits that lie within the current mining lease M53/24 (hatched area) and pending exploration lease E53/1864 (area within the red dotted line). This figure also shows aboriginal Heritage Site exclusion zone shaded in grey and a registered heritage site shaded in yellow for which is currently in the process of obtaining heritage agreement.

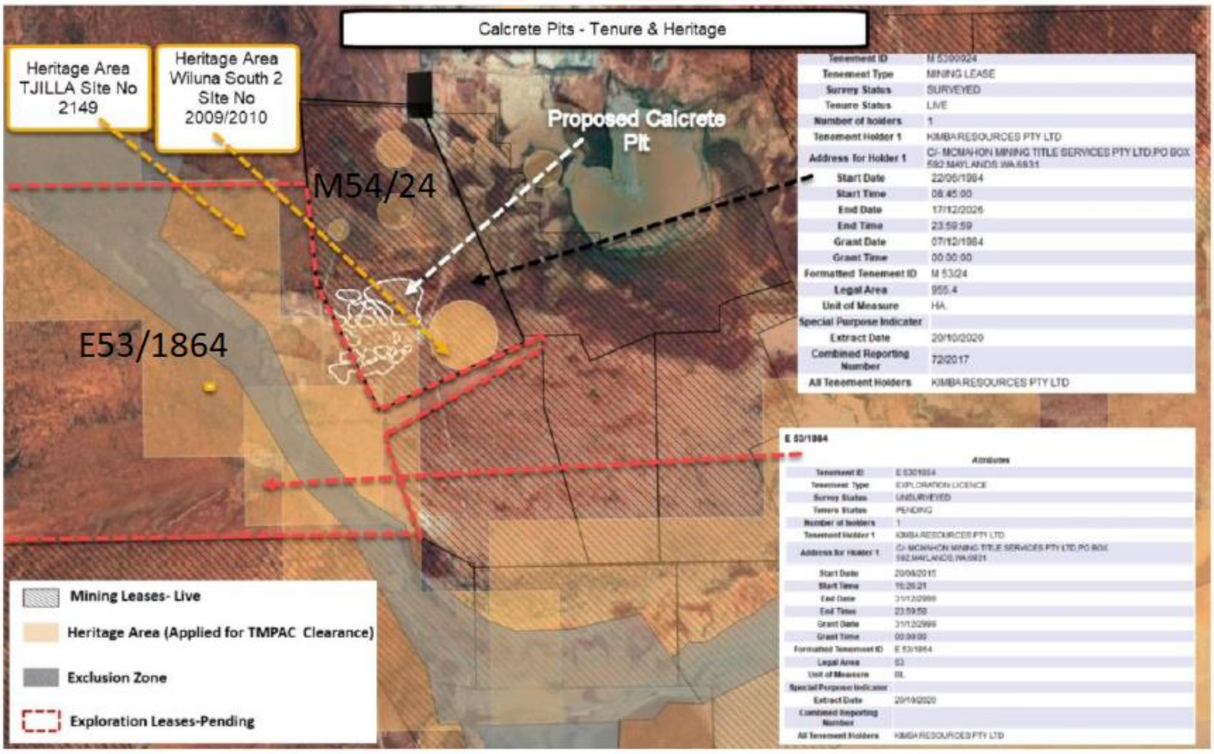


Figure 13-1: Calcrete Pit – Tenure and Heritage Area

13.1.2.3 Eastern Borefield

The Eastern Borefield is an existing borefield ~10km east of the site and is the good quality water source for sulphide ore treatment and reverse osmosis of site potable water.

Works Approval was granted for the drilling, construction and commissioning of additional bores in the Eastern Borefield as part of risk management for water supply continuity. Installation and operation of bore pumps in these additional bore locations, and extension of overhead powerlines (OHL) and discharge pipelines to these locations, is required under a separate Mining Proposal.

Stygofauna surveys have been conducted, with the draft report due mid-October 2023. Heritage clearance remains outstanding, which is being actively pursued. These components of the Mining Approval lie on the critical path to submission and approval.

13.1.2.4 Additional Mining Approvals

Additional Mining Approvals which will be required later are:

- Bulletin underground mining operations beyond the existing approval envelope.
- Happy Jack underground mining operations beyond the existing approval envelope.
- East Lode North underground mining operations, accessed from Happy Jack underground.
- Open pit mining of East Lode – this mining approval should be sought at the earliest opportunity, pending geotechnical work and review relating to Zone of Instability, at the earliest opportunity, to facilitate concurrent mining with West Lode.

13.1.2.5 Calcine Material

There is a stockpile of calcine material which sits on top of TSF H. This material has previously been processed through the roaster when it was in operation on site, and was stored in a separate tailings storage facility which lies fully within the footprint of TSF J. There was approximately 400kt of this material assaying ~5.2g/t Au. This material was transferred and stockpiled on TSF H prior to commencement of tailings deposition into TSF J. There is a Calcine Agreement between Wiluna Mining and Kesli Chemicals, whereby Kesli purchased the rights to treat the calcine material, which expires April 2024.

Kesli Chemicals are obliged to obtain Mining Approval covering this mining activity, including transport of calcine tailings material to their nominated treatment facility and processing, and provide a copy of this to Wiluna Mining prior to commencement. They will also be required to provide a Method Statement and Traffic Management Plan acceptable to Wiluna Mining management prior to commencing material movement.

Should the Calcine Agreement expire with calcine material remaining, ownership of the calcine material reverts to Wiluna Mining and the Mining Proposal in Section 10.1.2.1 above would cover the mining and treatment of this material through Wiluna Mining's treatment plant.

13.2 Water Abstraction

As noted in Section 4.5.1, the DWER water abstraction licences for the site were issued in 2014 and are due to expire on 5/06/2024.

Given the criticality of good quality water supply to ongoing operations at Wiluna Mining the renewal of these abstraction licences should be expedited on a timely basis as a high priority. Due regard will need to be given for time to compile and submit the renewal application, and for the nominated 6-8 weeks processing time duration required by DWER. If DWER are still processing the renewal application beyond the 6-8 week processing duration at the expiry time, continued abstraction is permitted until processing is complete.

13.3 Tenement Standing

Currently the Chief Geologist on site is monitoring and managing the standing of tenements.

As mining activity resumes and the Chief Geologist's time and focus is required more for operational matters, responsibility for monitoring and managing tenements in good standing should be delegated to a person dedicated to that purpose.

13.4 Camp Expansion and Rejuvenation

Included in the primary Mining Proposal is an upgrade and rejuvenation of the camp.

In addition to DMIRS approval of the Mining Proposal, building approval from the Shire of Wiluna will be required.

In 2020 some refurbishment works were ordered by the regulators and carried out. As part of future expanded operations, a replacement kitchen and replacement or expanded dining facility will be required, as well as upgraded wastewater treatment facilities.

No difficulties are anticipated by site management in obtaining Shire of Wiluna approval for these works. Approval timeframe would need to be incorporated into the timeframe for installation, as well as transition arrangements during demolition and replacement.

13.5 Works Approval and Clearing Permits

With Mining Approval in place, Works Approval and Native Vegetation Clearing Permits will be required for all surface mining works.

13.6 Heritage – Traditional Owners

The operations the subject of the PFS are proposed on mining tenements that are covered by existing agreements with Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC). TMPAC is the registered native title body corporate for the native title holders in the broader area, where native title is not extinguished.

WMC and its subsidiaries are working within those existing agreements to progress the operation, including through heritage processes. WMC is also re-engaging with TMPAC about a new exploration agreement that will apply beyond the operations the subject of the PFS. While Wiluna's relationship with TMPAC has had difficulties during a period of personnel changes within [WMC], the relationship has improved following Wiluna's recent engagement.

Care and concerted consistent effort to build and maintain credibility and good relations are considered a matter of priority. Additional dedicated resources will be needed to maintain and progress the relationship with TMPAC and implement agreements. This will provide the foundation for managing operational and approval risks associated with the operations the subject of the PFS.

13.7 Project Management Plan

An approved Project Management Plan (PMP) exists which covers the existing mining operations, including:

- Open pit mining operations.
- Underground mining operations.
- Tailings reclamation from Western Cell.
- Conventional processing to 2.2Mtpa, including crushing and grinding, CIL leaching, flotation.
- Deposition and storage of tailings in TSF K to 518.5mRL.
- BIOX operations.
- Camp operation.
- Associated miscellaneous work.

Activities which lie outside the scope of the existing approved PMP will need to be covered by an updated or amended PMP. Review of planned activities outside of scope should commence immediately, so that an amended PMP can be in place on a timely basis for these planned activities.

13.8 Mine Closure Plan

Where there is a material change to the nature or extent of approved mining, processing and associated activities on site, it is a requirement that an updated Mine Closure be formulated and submitted.

The existing approved Mine Closure Plan will require updating to reflect what is proposed under the current three Mining Proposals being formulated for submission (mining and treatment to 3.2Mtpa, calcrete mining, Eastern Borefield).

13.9 Adverse Materials

In the Wiluna Mining Environmental Management Plan (WMX-HSE-PLA-09-11001) Section 10.13 Adverse Materials (Waste Rock Management), both dispersive materials and PAF are identified as requiring Management.

While no geochemistry studies were undertaken on waste for the 2023 PFS (or Landform studies) a summary of earlier geochemical work relevant to the PFS is summarised below.

13.10 Geochemistry of Waste Rock

However, in 2018 Environmental Geochemistry International Pty (EGi) undertook a geochemical assessment of waste and ore for the Wiluna Expansion Project (Wiluna Mine Mining Proposal 96162). Based on total sulphur content, a total of 876 composite waste rock samples were selected, considered to be representative of the major waste rock lithologies to be encountered at the Golden Age Cutback and Underground.

A total of 609 samples relevant to the sulphide area were selected and 548 of these had total sulphur less than 0.3%. 164 were then selected for geochemical analysis by static test to identify problematic or inert material. Those selected were biased to higher sulphur grades as the grades were generally low, producing a worst case, and overall the results suggested that waste rock (as represented by the test samples) will be neutral to alkaline and have a low sulphur content.

In summary, based on the study results it was considered that:

- Most waste will have a significant excess of Acid Neutralising Capacity (ANC)
- Net Acid Generation (NAG) tests were carried out on 134 of the 164 samples and 123 or the 134 were classed as Not Acid Forming (NAF)
- Oxide, transitional and fresh waste will be circum-neutral and NAF.
- Small pockets of material with elevated sulphur could occur across all weathering horizons, primarily in fresh rock.
- In oxide waste with elevated sulphur it is likely to occur as sulphate which does not contribute to acid forming potential.

13.10.1 Leach Testing

It was reported that EGi undertook static peroxide extractions to provide indicative data on metals or metalloids after prolonged exposure to atmospheric conditions, resulting in sulphide oxidation and acid conditions for PAF rock.

Of the 22 samples tested by static peroxide extractions, 18 were Not Acid Forming (NAF) and four were classed as Potentially Acid Forming (PAF). The PAF samples also released calcium, magnesium and there were elevated concentrations of aluminium and iron. Scaling the results to represent average leachate quality that might be expected in the field, other metals including copper, cobalt, manganese, nickel and zinc could also occur in PAF waste if allowed to acidify.

13.11 Wiluna Airstrip Upgrade

The current airstrip is limited in the size of aircraft that are rated for its use. The Shire of Wiluna, as airport operator, has plans for upgrading the airstrip by way of a runway extension from 1800m to 2000m and wider taxiway and apron area to accommodate larger aircraft. Federal funding is being sought for this upgrade, with any approvals required to be sought and arranged by the Shire of Wiluna as operator.

Rock from existing waste rock landforms has been made available to the Shire of Wiluna for testing, to assess suitability for crushing and screening and use in forming the new asphalt runway.

Waste rock landforms to be formed during open pit mining are designed to 545.0mRL, which complies with the aviation Obstacle Limitation Surface that relates to the ceiling above which any physical structures in the vicinity of the airstrip may not intrude.

The existing communications tower on TSF C peaks at 559.6mRL, 12.1m above the OLS. Given that TSF C is being re-treated, a new location will be required for the communications tower, which may require approval. Clarification should be sought on this, so that a suitable new location can be determined and is available on a timely basis.

13.12 Approvals Timelines

Projected timelines for the formulation and submission of relevant and required approvals is shown below in Figure 13-2.

13.12.1.1 PFS Case

The critical path for permitting is the Mining Approval for mining of tailings, mining of open pits, mining of tailings from TSF C and TSF H, and ongoing treatment of tailings and open pit ore. Engagement with regulators has commenced, and compilation of Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities.

13.12.1.2 Production Target Case

With existing Mining Approval remaining in place for underground mining, new Mining Approval will only be required for continuous operation of Wiltails and ore treatment. This is required at the earliest opportunity to enable continuous processing.

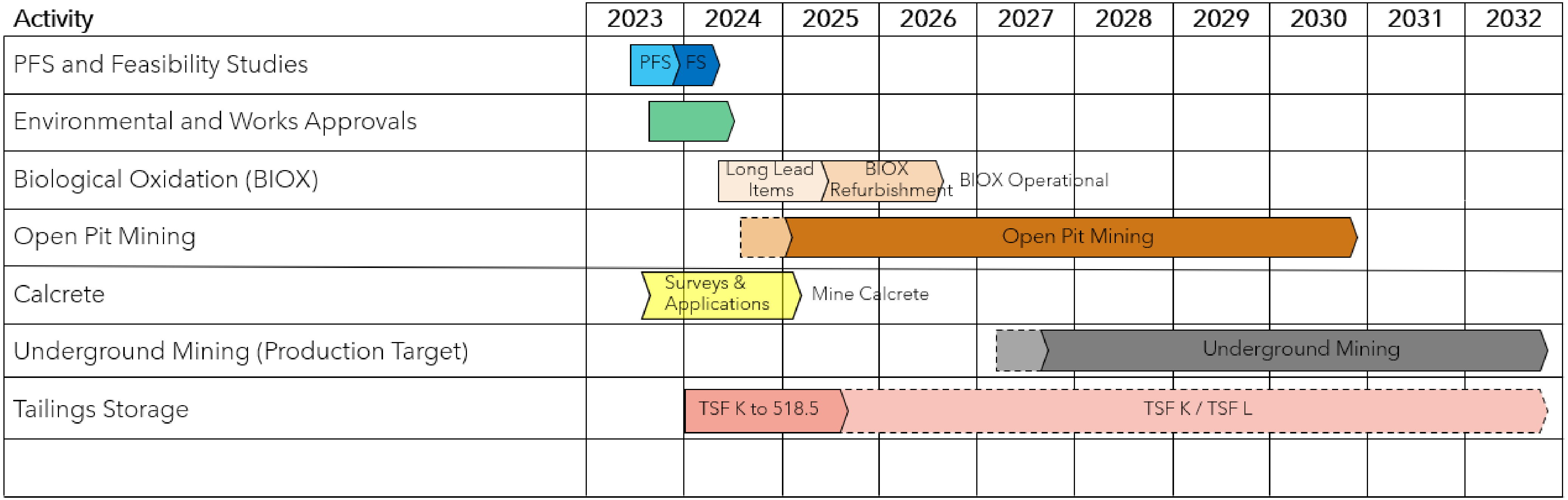


Figure 13-2: Projected Timelines

14 ECONOMIC EVALUATION

14.1 Introduction

Economic evaluation for Wiluna has been undertaken to explore the relative value of mining and processing options for the Wiluna assets. The options considered were open pit and underground mining with free milling ore treated by CIL and fresh ore by BIOX at up to 750 ktpa to produce concentrate and doré.

The total treatment rate is 3.2 Mtpa, including flotation tailings by CIL and retreatment of tailings from historic TSFs. A Production Target case was developed, as described below:

- Open pit mining starting in early 2025. Open pit mining proceeds for 6 quarters with oxide and transition material, followed by fresh material. Open pit material is supplemented by tailings retreatment of historic tailings through CIL. Flotation tailings are treated through CIL when fresh material is processed.
- BIOX production to produce gold doré from the flotation concentrate commences in Q3 2026, aligning with processing of fresh material from the open pits.
- Underground mining commences at the end of 2028 and continues for 5 years. Underground fresh material is supplemented by open pit fresh material to maximise throughput of the flotation plant.
- Mining and processing of historic tailings continues throughput the operation to maximise utilisation and value from the CIL plant.
- Untreated open pit oxide and transition material is stockpiled until fresh ore is no longer available. Oxide and transition material are treated through the same comminution circuit as fresh, but at a higher rate.

The economic modelling was conducted in Australian dollars (AUD, A$) in real terms. The years are calendar years.

The focus of the modelling was to maximise the value of the operation.

14.1.1 Glossary

Terms used in the economic evaluation section of the report are summarised in Table 14-1.

Table 14-1: Glossary of Terms used in Economic Evaluation

Term/Abbreviation	Description
CER	Capital efficiency ratio. Cumulative discounted cash flow divided by total growth capital.
DMT	Dry Metric Tonnes
Operating Efficiency Ratio	The ratio of Operating Costs to Revenue. Excludes capital, taxes, and depreciation.

Term/Abbreviation	Description
IRR	Internal Rate of Return
MCNCF	Maximum cumulative negative cash flow
Mine Life	Life of mine in years, from commencement of pre-stripping to last production year (inclusive). Does not include Closure year/s.
NPV	Net Present Value
Op. Efficiency	Opex, including sustaining capital divided by revenue.
Operating Profit Margin	EBIT Margin – EBIT/Sales Revenue
Payback	Undiscounted Payback expressed in years
PVR	Present Value Ratio – Ratio of NPV to Present Value of Project Capital. A capital efficiency ratio that discounts the project capital.
WMT	Wet Metric Tonnes – Dry Metric Tonnes adjusted for moisture content.

14.2 Assumptions and Costs

Capital expenditure is incurred according to the project requirements.

Processing of tailings is considered from January 2024 (Year 0) and open pit mining commences in Q1 2025. There are six quarters of open pit mining performing cutbacks and mining oxide and transition before processing transitions to fresh.

In the Production Target case, underground mining commences at the end of 2027.

The economic assumptions used to evaluate the Wiluna project are summarised in Table 14-2.

Table 14-2: Economic Assumptions

Item	UOM	Rate
Discount Rate	%	8.0
Foreign Exchange Rate	AUD:USD	0.67
Royalties	%	6.10

The discount rate is an industry standard rate applicable to the Australian Mining Industry and was agreed with the client.

The foreign exchange rate was provided by the client. Both discount rate and foreign exchange rate were tested with sensitivity analysis.

Royalties are based on actual royalties payable by the Wiluna operation and are taken from the Stage 2/3 PFS model from 2022.

14.2.1 Metal Price and Recovery

Metal specific assumptions are given in Table 14-3. The gold price was agreed between Mining One and FTI consulting in Australian dollar terms. The cash flow model used a USD gold price, which allowed sensitivity analysis on both gold price and the exchange rate (later removed).

Table 14-3: Metal Prices and Assumptions

Item	Rate
Gold price	AUD2,880/oz
Silver price	USD21/oz

The metal recovery assumptions are given in Table 14-4. The recoveries were based on analysis by Mining One of testwork and production results. Recoveries were tested with sensitivity analysis in aggregate and individually using probabilistic modelling.

The recovery of Wiltails through the repulper was determined based on the current performance of Western Extension TSF tailings and the testwork results for TSF H, and TSF C Upper and Lower.

Table 14-4: Metal Recovery Assumptions

Item	UOM	Rate
Wiltails processing gold recovery Western Extension and TSF H	%	48.0
Wiltails processing gold recovery TSF C Upper	%	42.0
Wiltails processing gold recovery TSF C Lower	%	38.0
Float tail leach gold recovery	%	35.0
Free milling oxide gold recovery	%	84.0
Free milling trans gold recovery	%	78.0
Fresh flotation recovery	%	Au(g/t) < 1.3 = 0 1.3<=Au(g/t)<4.5, -2.908*Au(g/t)^2+24.18* Au(g/t)+37.882)/100 Au(g/t) > 4.5 = 88.57
Fresh float mass pull	%	Mass pull = 0.8852*Au(g/t) + 0.7963
Fresh S con grade	%	S Con Grade = 1.3937*S(%)+20.323
Fresh As con grade	%	As Con Grade = 1.3937*Au(g/t)/As(%)+20.323
BIOX con gold recovery	%	96.0

14.2.2 Operating Costs

Mining costs have been used in this study based on actual site costs and a cost estimate detailed in Section 6.11. A stockpile rehandle cost was assumed based on benchmark information.

Processing costs have been estimated in this study using actual process costs for Wiluna as discussed in Section 8.6.

The G&A cost is based on the actual G&A cost for Wiluna with tailings operation only in 2023. A forecast G&A was calculated when open pit mining commences with flotation and BIOX. The G&A breakdown is summarised in Figure 14-1.

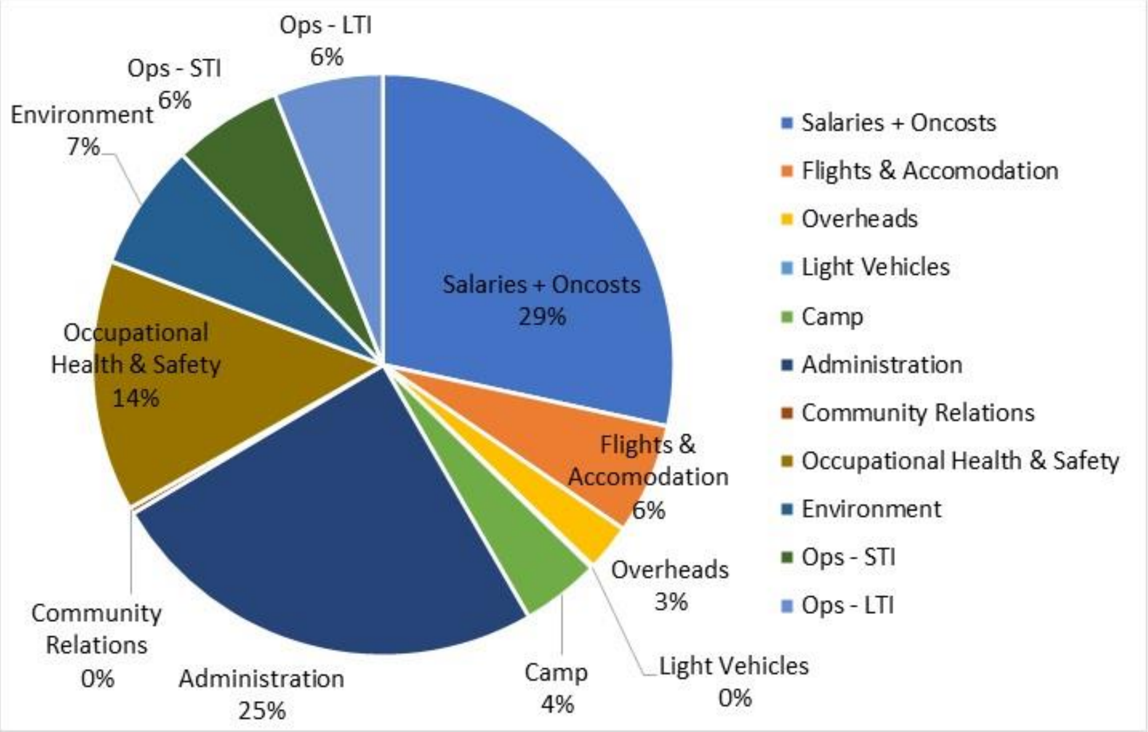


Figure 14-1: G&A Cost Breakdown During OP Mining

Operating costs are summarised in Table 14-5.

Table 14-5: Operating Costs

Mining Costs	Variable Cost	Fixed Cost (per annum)
Wiltails prior to open pit operation	$5.97/t	-
Wiltails marginal cost	$2.47/t	-
Wiltails only post Open pit mining	$4.95/t	-
Open Pit	$4.95/t	-
Open Pit Stockpile rehandle	$2.77/t	-
Calcrete mining cost	$20.00/t calcrete	-
Underground mining contractor cost	-	$2,881,237
Underground bogging	$9.26/t material	
Underground hauling	Varies by t.km	
Underground mine services	$4.30/t ore	
Underground stope drilling	$89.30/m drilled	
Underground mining development cost	$4,656/m	-
Processing Costs	**Variable Cost**	**Fixed Cost**
Wiltails – marginal cost	$5.94/t	$6,148,000
Wiltails – tailings only cost	$8.65	-
Free milling - oxide	$15.72/t	-
Free milling - trans	$18.65/t	-
Flotation	$28.05/t	$8,782,000
BIOX	$303.64/t concentrate $12.36/t ore	-
G&A Costs	**Variable Cost**	**Fixed Cost**
Site based G&A 2024 (tailings only)	-	$8,950,000
Site based G&A UG/OP pit mining	-	$12,793,000
Site based G&A (no mining, tailings only)	-	$8,950,000

14.2.3 Capital Costs

Plant capital costs for the BIOX refurbishment are based on the PFS cost estimate performed by Mincore Pty Ltd.

Site infrastructure costs are based on the Stage 2/3 FS in 2022 and updated to reflect the reduced operation size in this PFS. These costs are detailed in Chapter 12.

The rehabilitation provision lodged in June 2023 accounts was $45.9M. An incremental closure cost of $2M was used at the completion of mining and processing for the additional closure costs associated with the work in this study. This is mainly from the open pits. Th $2M is considered conservative as the cost of closure of the open pits in the closure cost model is approximately $0.85M

The capital costs used in the economic assessment are summarised in Table 14-6.

Table 14-6: Growth Capital Costs

Growth Capital Costs	UOM	Value
Processing - BIOX	A$	$41,050,000
Underground Mining	A$	$18,279,000
Underground Drilling Prior to Restart	A$	$4,800,000
G&A	A$	$9,200,000
Incremental Closure	A$	$2,000,000

Sustaining capital consisted of tailings dam lifts, which were estimated based on Option 4 for TSF K along with an additional tailings dam, as discussed in Section 9.2.5. Other plant sustaining capital costs are captured in annual maintenance.

An allowance of 5% of the operating cost for mining tailings was made for sustaining capital for the mine fleet.

G&A sustaining capital was applied during mining and consisted of village maintenance and upgrades, admin, light vehicles, and emergency response equipment.

No allowance for open pit mining sustaining capital was made because contract mining was used.

Table 14-7: Sustaining Capital Costs

Sustaining Capital Costs	UOM	Value
Tailings facility	$M	38.0M
Mining tailings	% Operating Cost	5
G&A (during UG/OP mining)	A$ per year	$700,000

14.2.4 Marketing

Marketing of concentrate is not required as part of the Wiluna PFS open pit cases. The only product produced is gold doré, which is readily marketable.

In the Production Target case, gold concentrate is not sold.

In some scenarios gold concentrate was sold and the following values were used for payability, transport and refining (Table 14-8). Gold doré transport and TC/RC's were obtained from industry benchmarks.

Concentrate payability and freight charges are actual values from 2022.

Table 14-8: Marketing Values

Item	UOM	Rate
Doré payability	%	100
Doré transport	A$/oz	$8.01
Doré TC/RC	A$/oz	$2.84
Concentrate payability	%	= 79 + (con grade – 50) x 0.125
Con arsenic penalty	%	1% for each 1% above 6%
Concentrate road freight	A$/dmt	$106.62
Concentrate sea freight	A$/dmt	$190.03

14.3 Results

Summary cashflow modelling results are given in Table 14-9 for the Production case.

This production target must be read in conjunction with the cautionary statement that there is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

Table 14-9: Summary Cashflow Modelling Results

Gold Price	A$2880/oz	A$3084/oz[1]
Gross Cash Surplus	$435M	$558M
Less Growth CAPEX (including BIOX refurb)	$73M	$73M
Net Cash Surplus	$362M	$488M
NPV_8	$198.6M	$282.0M
IRR	53%	112%

CER	2.7	3.85
Operational Efficiency	0.75	0.70
Payback	5.5	3.8
AISC	$2,015	$2,015
MCNCF	-$82.6M	-$66.4
Gold Produced (koz)	641.7	641.7

[1]Gold price at time of writing.

[2]Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.

[3]Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.

[4]Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

The cashflow distribution is given in Figure 14-2. Revenue is entirely from doré production, with no direct concentrate sale.

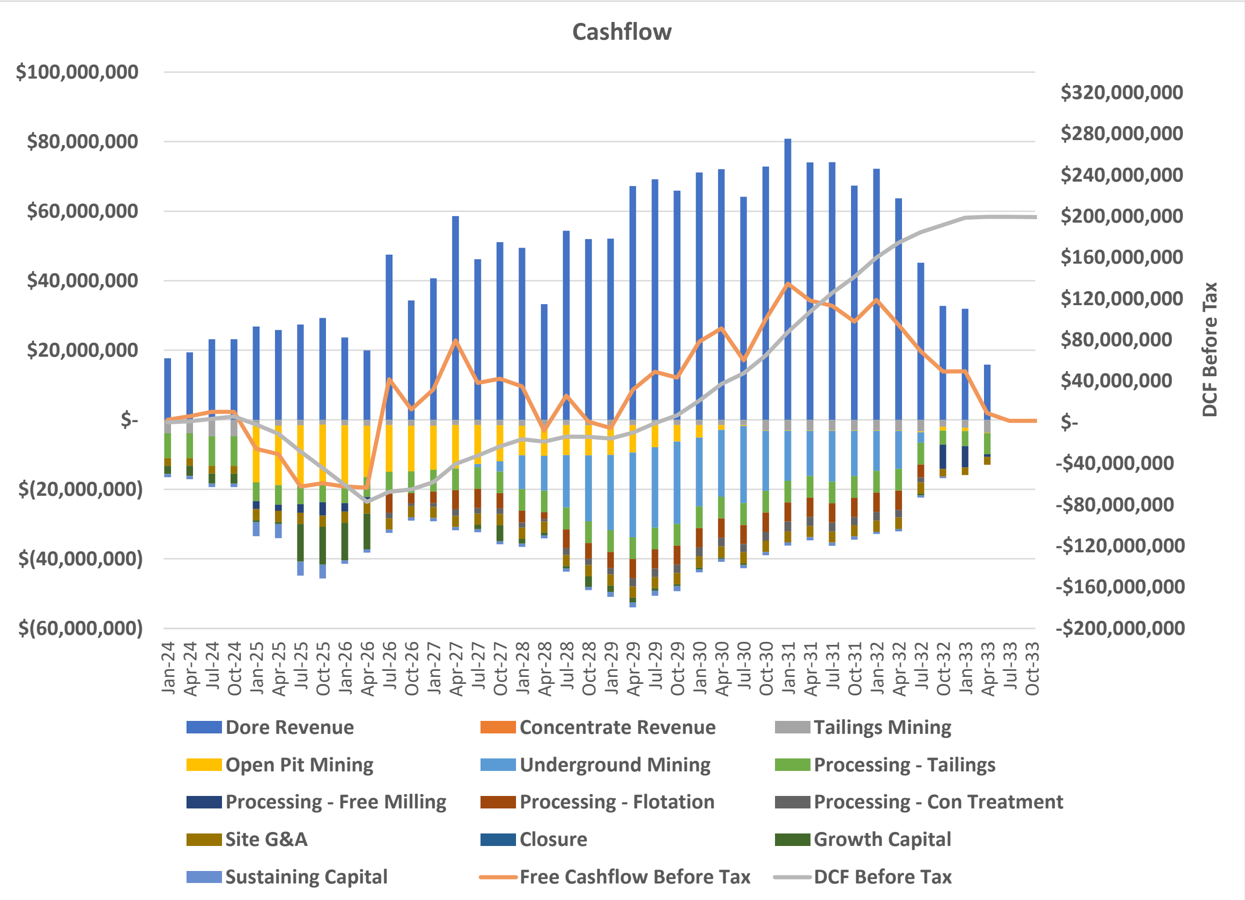


Figure 14-2: Production Target Cashflow at A$2880/oz

The physicals are presented in Figure 14-3. Production is entirely from tailings reprocessing in 2024 prior to open pit mining in 2025. There are 6 quarters of oxide and transition feed prior to fresh material from mid-2026. Free ore feed from the open pit and underground then continues until the end of 2031. Fresh grade increases as an increasing proportion of material from underground is sourced.

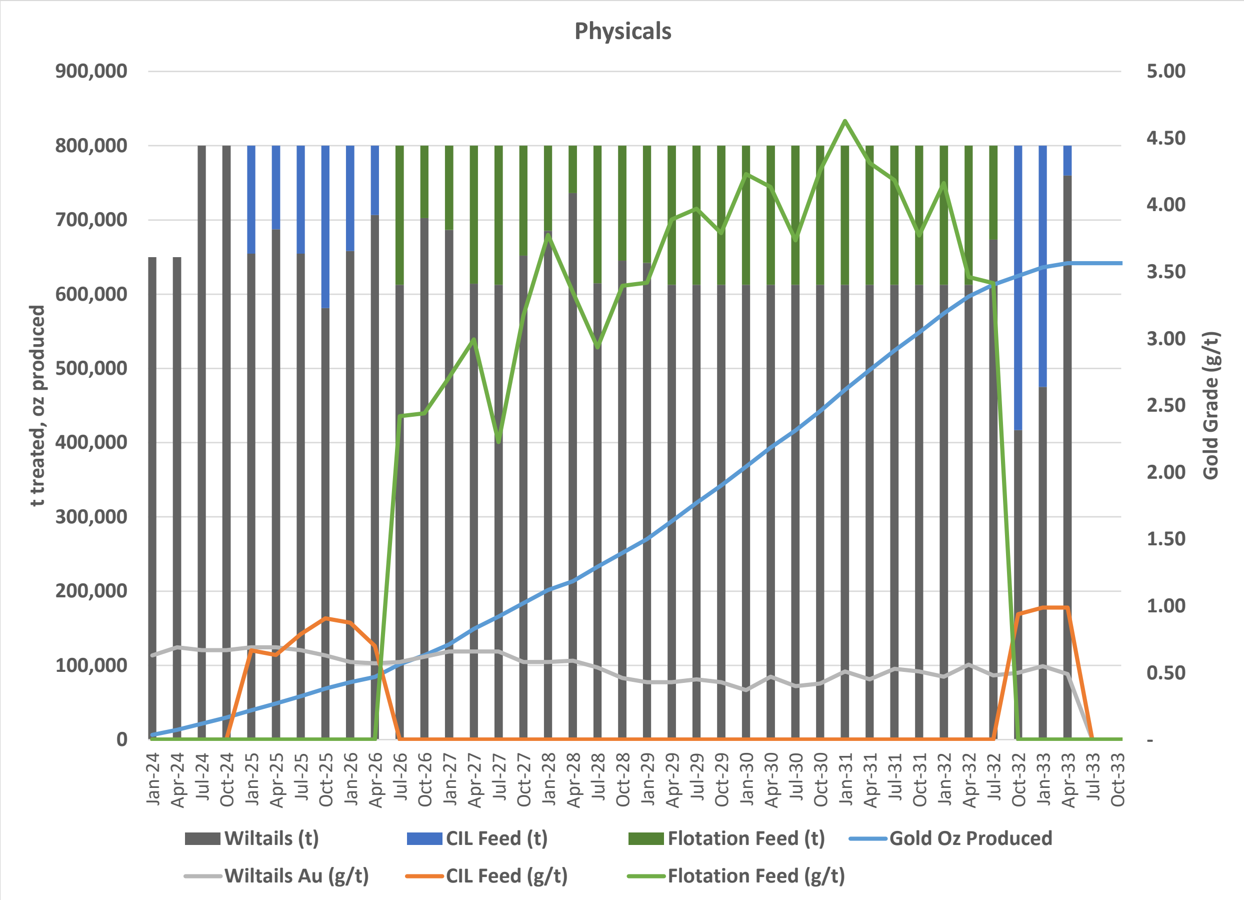


Figure 14-3: Production Target Physicals

14.4 Sensitivity Analysis

14.4.1 All Parameters

A sensitivity analysis was performed and is presented for the Production Target (Figure 14-4). The sensitivity analysis shows the project is most sensitive to recovery. The recovery for the various processes are aggregated in this analysis. Following recovery, the NPV is sensitive to gold price and the exchange rate. The exchange rate sensitivity is mainly because the metal price is nominated in US$ terms.

The project is relatively insensitive to mining cost, process cost, G&A and CAPEX (in that order).

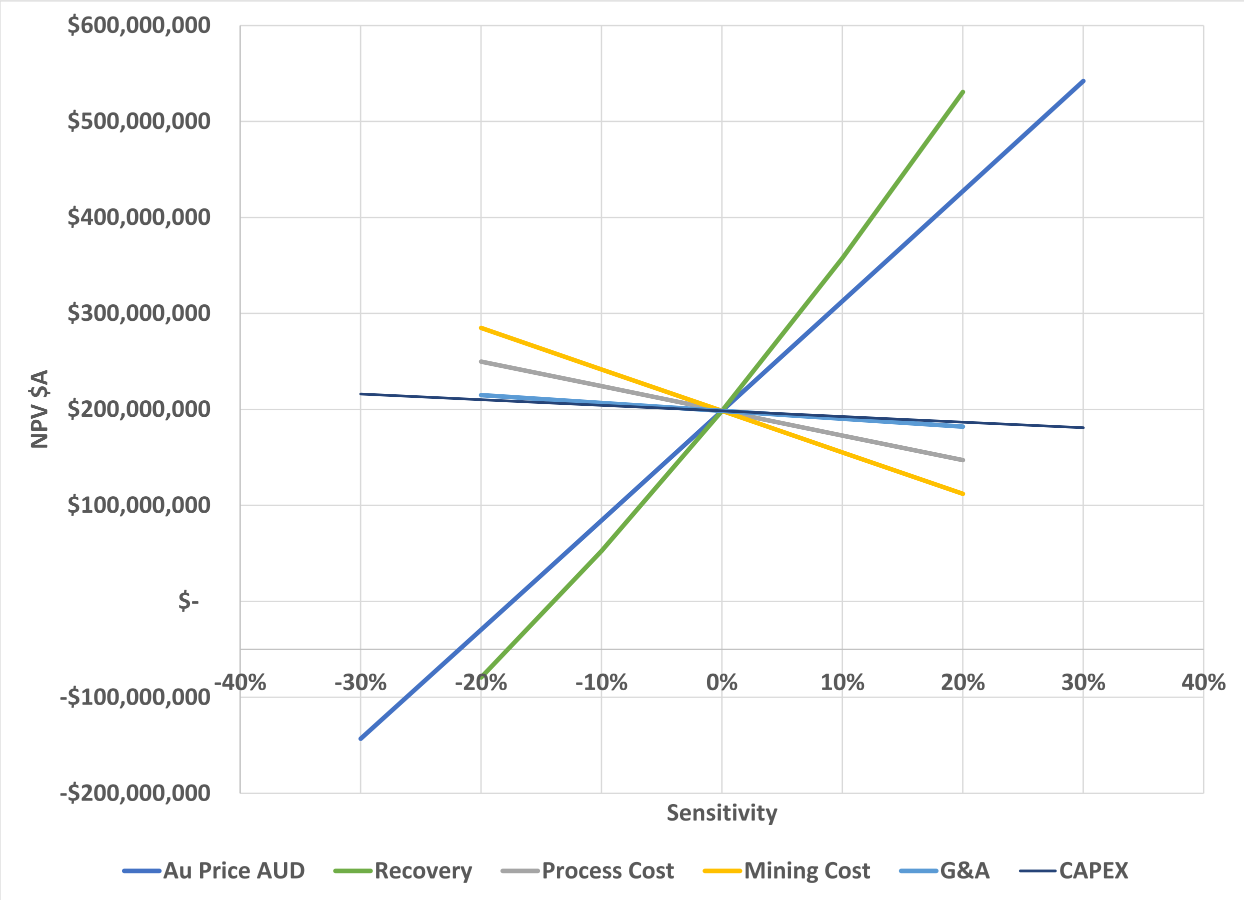


Figure 14-4: Production Target Sensitivity Analysis at A$2880/oz

Additional probabilistic modelling was performed on the Production Target case. A range for inputs with uncertainty was developed and used to perform Monte Carlo simulation modelling using @Risk software.

Inputs for the modelling are given in Figure 14-4. The results of the modelling are given in Figure 14-5 to Figure 14-8.

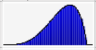
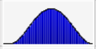
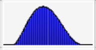
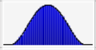
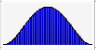
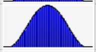
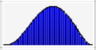
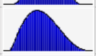
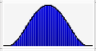
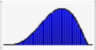
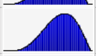
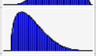
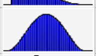
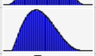
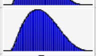
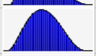
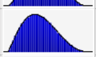
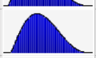
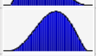
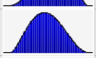
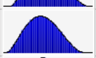
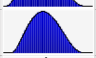
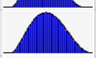
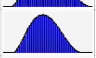
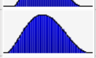
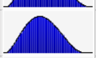
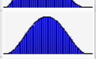
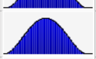
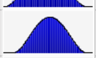
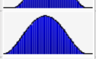
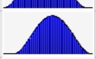
Name	Graph	Minimum	Maximum	Mean	Std. Deviation
BIOX Rec (%) / Value		$ 0.86	$ 0.99	$ 0.95	$ 0.03
BIOX Var Op Cost / Unit Cost		$ 260.60	$ 348.40	$ 303.64	$ 17.22
Calcrete Mining ($/t) / Unit Cost		$ 17.06	$ 23.75	$ 20.17	$ 1.32
Dump leach / Value		$ 0.45	$ 0.55	$ 0.50	$ 0.02
Flotation Fixed Process Cost ($) / Amount		$ 7,529,514	$ 10,037,660	$ 8,781,998	$ 497,927
Flotation Tailings Leach Rec (%) / Value		$ 0.27	$ 0.44	$ 0.35	$ 0.03
Flotation Var Op Cost ($/t) / Unit Cost		$ 24.05	$ 32.05	$ 28.05	$ 1.59
Free Mill Oxide Op Cost ($/t) / Unit Cost		$ 13.49	$ 18.00	$ 15.72	$ 0.89
Free Mill Trans Op Cost ($/t) / Unit Cost		$ 16.00	$ 21.35	$ 18.65	$ 1.06
Free Milling Oxide Rec (%) / Value		$ 0.74	$ 0.92	$ 0.84	$ 0.03
Free Milling Trans/Sul Rec (%) / Value		$ 0.69	$ 0.85	$ 0.78	$ 0.03
FX (AUD:USD) / Value		$ 0.54	$ 0.80	$ 0.67	$ 0.05
G&A Cap Cost ($) / Amount		$ 7,842,189	$ 11,743,580	$ 9,429,996	$ 762,876
Gold (AUD/oz) / Value		$ 2,134	$ 3,468	$ 2,800	$ 265
Gold Float Max Rec (%) / Value		$ 0.83	$ 0.91	$ 0.88	$ 0.02
Gold Float Rec Const (%) / Value		$ 32.10	$ 40.82	$ 37.38	$ 1.66
Increm. Closure ($) / Amount		$ 1,701,468	$ 3,806,806	$ 2,283,336	$ 378,278
Mining Fixed Costs ($) / Amount		$ 2,463,843	$ 3,291,046	$ 2,881,235	$ 163,366
Mining Underground Cap Cost ($m) / Amount		$ 0.85	$ 1.28	$ 1.02	$ 0.08
Open Pit Mining ($/t) / Unit Cost		$ 4.22	$ 6.31	$ 5.07	$ 0.41
Open Pit Stockpile Rehandle ($/t) / Unit Cost		$ 2.37	$ 3.30	$ 2.79	$ 0.18
Processing - BIOX Cap Cost ($) / Amount		$ 34,952,272	$ 52,399,793	$ 42,076,209	$ 3,403,982
Processing - Wiltails Cap Cost ($) / Amount		$ 6,822,195	$ 10,198,829	$ 8,199,993	$ 663,361
Site Based G&A 2024 ($) / Amount		$ 6,422,478	$ 10,702,517	$ 8,800,838	$ 838,233
Site Based G&A OP ($) / Amount		$ 10,906,258	$ 15,242,866	$ 12,899,600	$ 842,441
Site Based G&A Tailings ($) / Amount		$ 7,625,358	$ 10,646,986	$ 9,024,576	$ 589,370
Underground Bogging / Unit Cost		$ 7.92	$ 11.00	$ 9.34	$ 0.61
Underground Development / Unit Cost		$ 3,979.35	$ 5,531.27	$ 4,694.80	$ 306.60
Underground Hauling / Unit Cost		$ 0.86	$ 1.19	$ 1.01	$ 0.07
Underground Mine Services / Unit Cost		$ 3.68	$ 5.13	$ 4.34	$ 0.28
Underground Stope Drilling / Unit Cost		$ 76.38	$ 106.32	$ 90.04	$ 5.88
Wiltails 2024 Budget / Unit Cost		$ 5.11	$ 6.84	$ 5.97	$ 0.34
Wiltails Fixed Process Cost ($) / Amount		$ 5,248,860	$ 7,035,540	$ 6,148,002	$ 348,602
Wiltails Mining Marginal ($/t) / Unit Cost		$ 2.12	$ 2.82	$ 2.47	$ 0.14
Wiltails Mining Only ($/t) / Unit Cost		$ 4.24	$ 5.66	$ 4.95	$ 0.28
Wiltails Process Only ($/t) / Unit Cost		$ 7.42	$ 9.91	$ 8.65	$ 0.49
Wiltails Variable Process Marginal ($/t) / Unit		$ 5.08	$ 6.79	$ 5.94	$ 0.34

Figure 14-5: Model inputs

The DCF analysis shows a 90% probability of NPV between -$3M and $367M for the Production case. The mean NPV was $178M. This compares to the deterministic model expected NPV of $198M. The mean NPV is reduced for the probabilistic model as there is higher probability of negative outcomes (generally cost increases) than positive outcomes. There is a 5.4% chance of the NPV being negative based on the distribution for the inputs used.

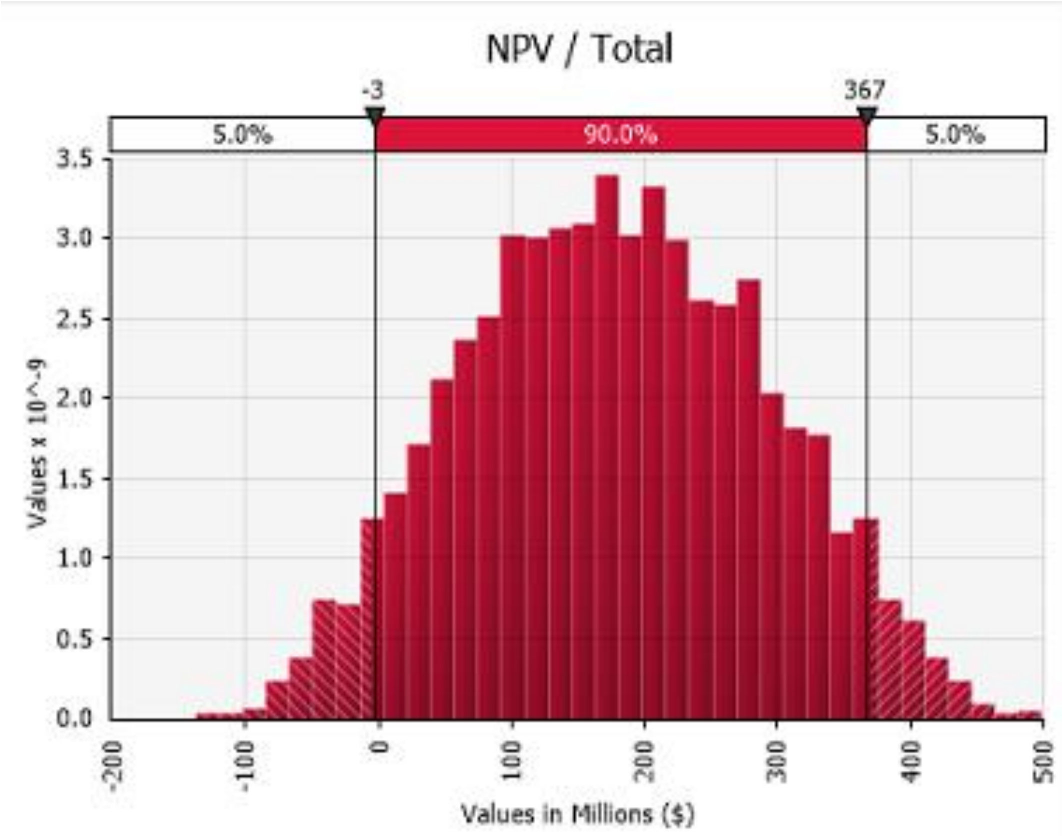


Figure 14-6: NPV Distribution

The Tornado diagram of the NPV is given in Figure 14-7. Like the sensitivity analysis above, NPV_8 is most sensitive to gold price. The probabilistic modelling gives increased definition of the recovery sensitivity, with the Wiltails recovery the second most sensitive parameter and gold BIOX recovery the fourth most sensitive. This is followed by flotation recovery. Open pit mining cost was the third most sensitive parameter to NPV. Following that, the remaining parameters have a smaller effect on NPV.

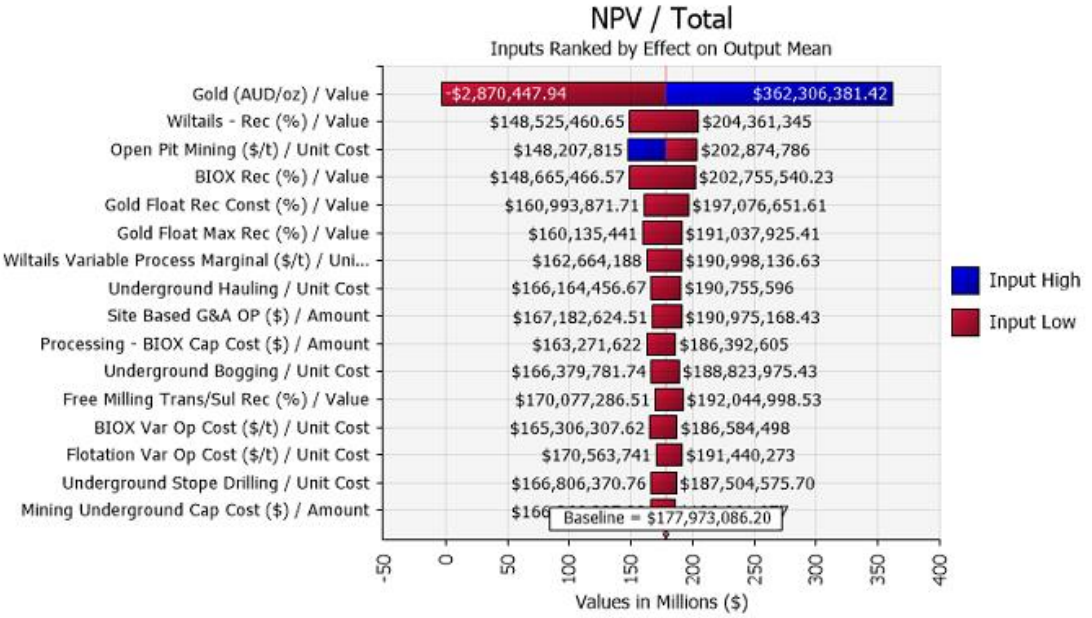


Figure 14-7: Tornado diagram of NPV sensitivity

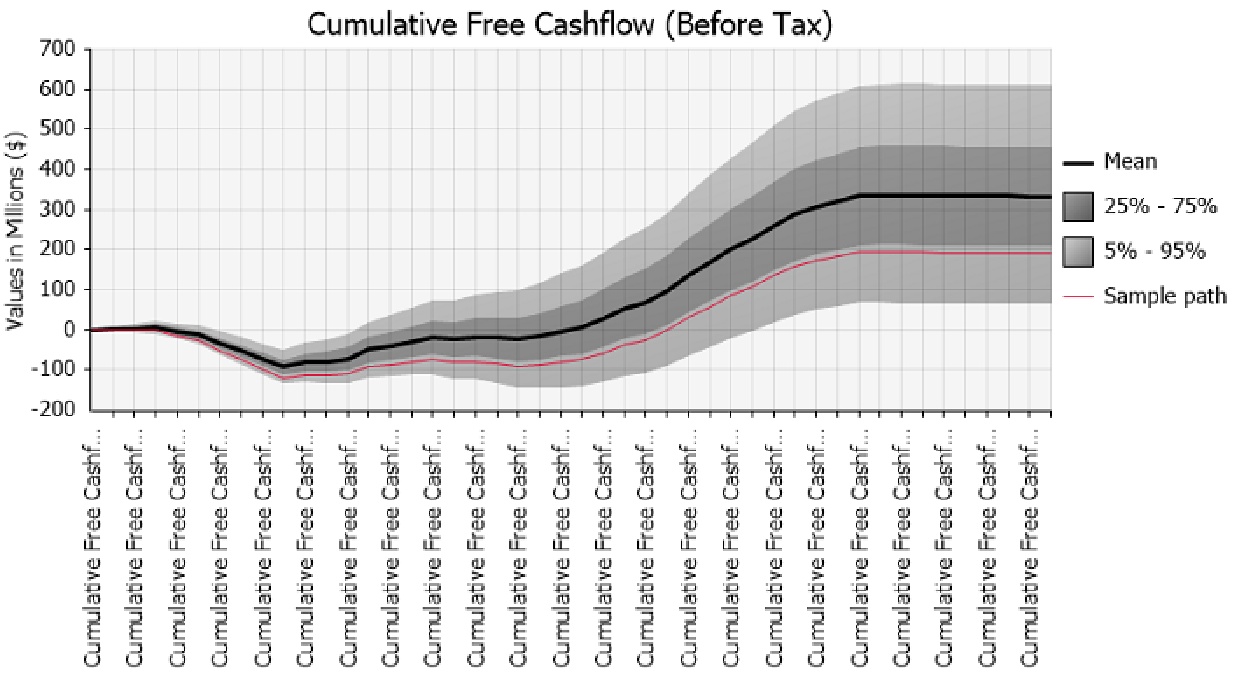


Figure 14-8: Cash flow distribution

The cumulative cash flow distribution is given in Figure 14-8, while the maximum cumulative negative cash flow is given in Figure 14-9. These are important metrics as they are related to the funding required for the project.

The MCNCF has a mean of -$95M. At 5% probability the value is -$144M and at 95% probability -$53M. The cumulative cash flow shows the range of cash flows possible over the life of the project, with a mean undiscounted cashflow of $324M.

As for the mean NPV there is higher probability of negative outcomes (generally cost increases) than positive outcomes compared to the deterministic model.

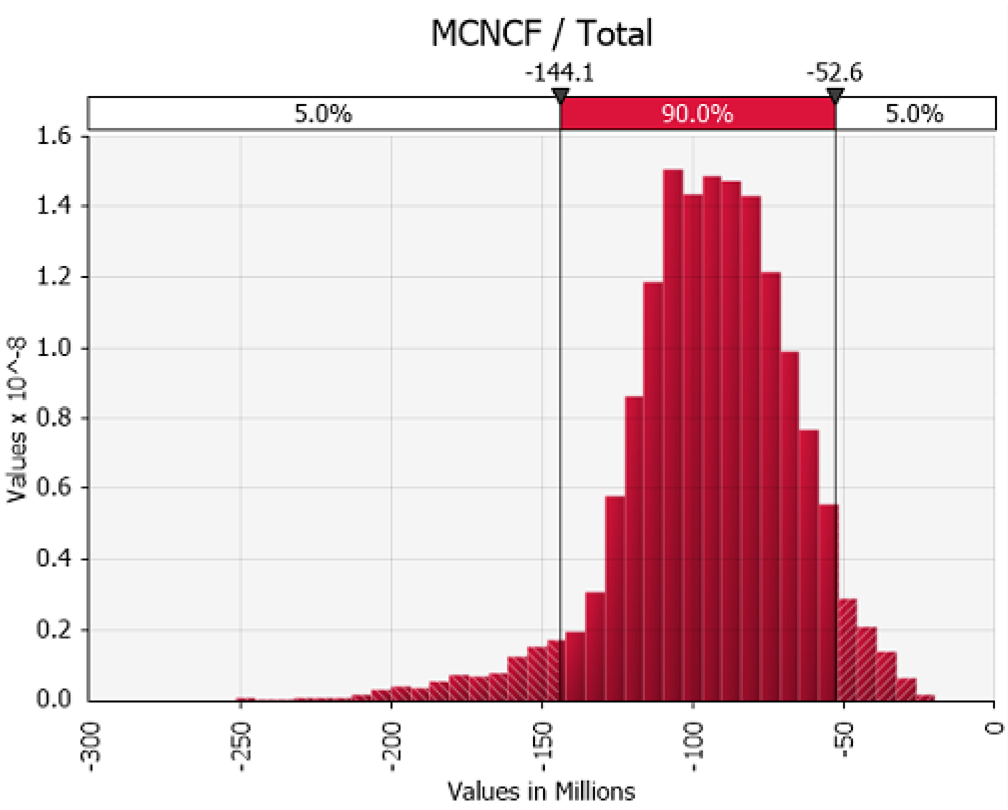


Figure 14-9: MCNCF distribution

14.4.2 Operational sensitivity

The probabilistic modelling was updated without the gold price as this was by far the most sensitive parameter in the model. The updated “operational sensitivity” reflects cost and recovery parameters which are under the control of the operation.

The results of the NPV analysis are given in Figure 14-10. This shows a 90% probability of NPV between $125M and $277M for the Production case. The mean NPV was $178M. This compares to the deterministic model expected NPV of $198M. There is a 0% chance of the NPV being negative based on the distribution for the inputs used, with the gold price held fixed.

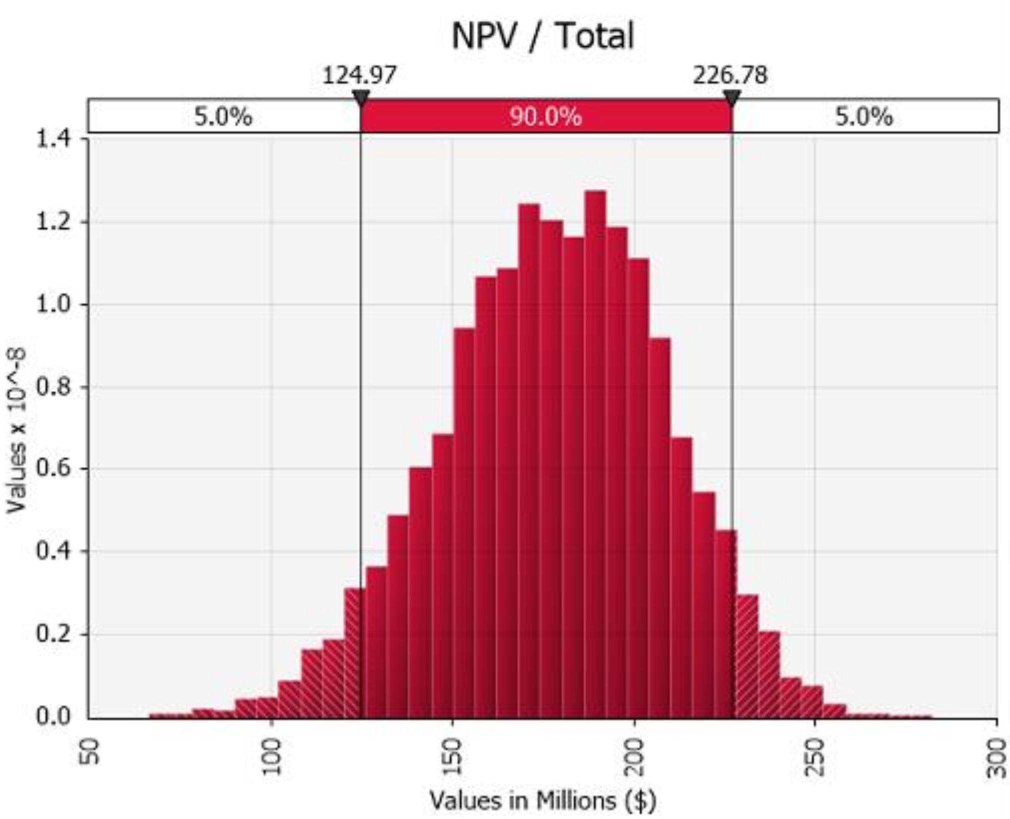


Figure 14-10: Operational NPV sensitivity

The Tornado diagram of the DCF is given in Figure 14-11, excluding the gold price. The probabilistic modelling gives increased definition of the recovery sensitivity, with the BIOX recovery the most sensitive parameter and Wiltails recovery the third most important, while gold flotation recovery was the fourth most sensitive. Open pit mining cost was the second most sensitive parameter to NPV. Following that, the remaining parameters have a smaller effect on NPV.

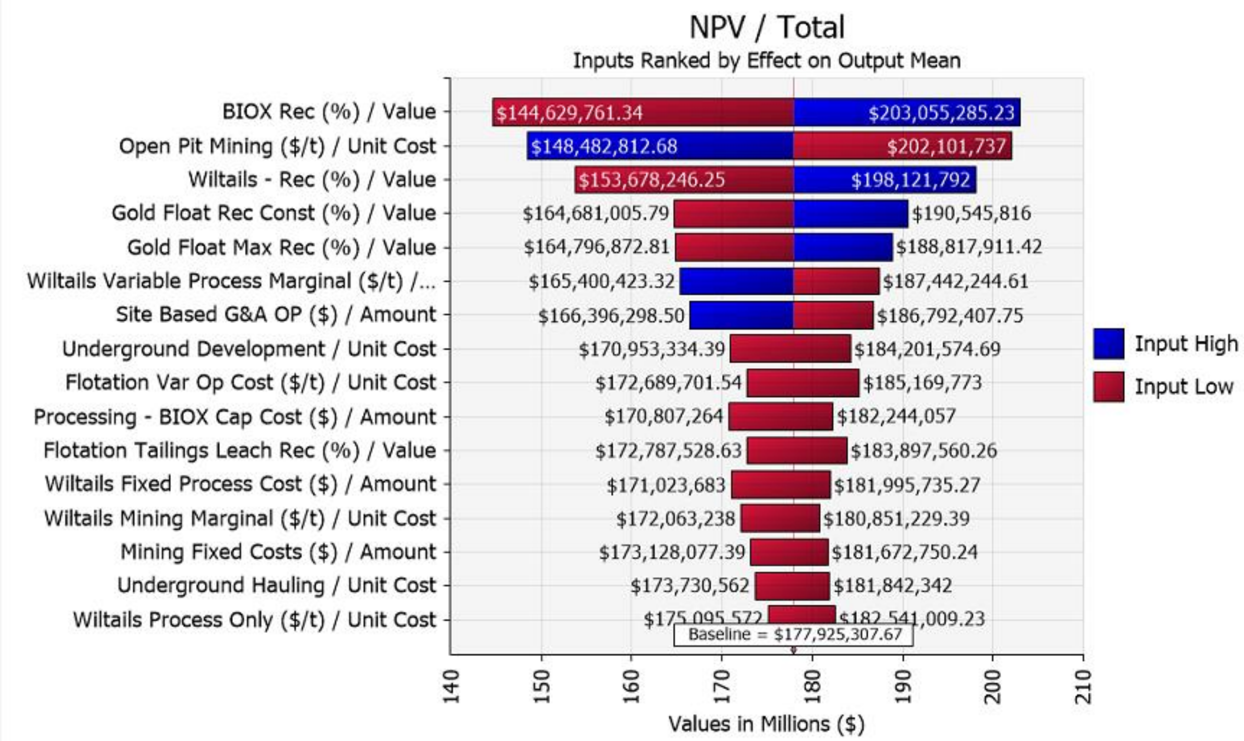


Figure 14-11: Operational NPV tornado diagram

14.5 Conclusions and Recommendations

A range of open pit and underground mining options in conjunction with tailings reprocessing were evaluated to explore their relative value for the Wiluna assets. Both open pit and underground mining were used to provide a minimum six years of flotation feed to produce gold doré via BIOX.

Oxide and transition ore are treated by CIL when available and flotation tailings are also treated through the CIL plant. Tailings reprocessing is used to increase the throughput to a total 3.2 Mtpa to maximise utilisation of the plant.

The preferred case presented is the Production Target case, which has BIOX production commencing in July 2026 using open pit ore. Prior to this oxide and transition material from the open pits are treated through CIL, along with historic tailings. Underground mining fresh material commences in October 2027 to supplement production of fresh material from open pits.

This production target must be read in conjunction with the cautionary statement that there is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of indicated mineral resources or that the production target itself will be realised.

The Production Target physicals include the following:

Material Source	Mt	Au (g/t)
Open Pit	3.84	2.09
Underground	1.95	4.29
Tailings Remining	24.3	0.55

The Production Target case has the following metrics:

Gold Price	A$2880/oz	A$3084/oz[1]
Gross Cash Surplus	$435M	$558M
Less Growth CAPEX (including BIOX refurb)	$73M	$73M
Net Cash Surplus	$364M	$488M
NPV_8	$198.6M	$282.0M
IRR	53%	112%
CER	2.7	3.85
Operational Efficiency	0.75	0.70
Payback	5.5	3.8
AISC	$2,015	$2,015
MCNCF	-$82.6M	-$66.4
Gold Produced (koz)	641.7	641.7

[1]Gold price at time of writing.

[2]Based on mining 24.3 Mt tonnes of Wiltails resource being 73% of total resource.

[3]Mining 3.8 Mt of OP ore including 100% reserves and 20% inferred resources, which is 23% of the total OP resources.

[4]Mining 2.0 Mt of UG ore including 100% reserves and 20% inferred resources, which is 7% of the total UG resources and 21% of the Measured and Indicated resources.

The Production Target has a maximum cumulative negative cash flow (MCNCF) of -$82.6M which represents the financing required. FTI Consulting advised this was a key performance measure, along with NPV and undiscounted cash flow.

The Production Target has been developed as part of the PFS. Further work is underway to progress the study to Feasibility Study (FS).

The following is recommended:

Short term

- Progress studies for BIOX refurbishment, tailings storage, permitting, environmental approvals, and other critical work to progress the PFS and Feasibility Studies (FS).

Long term

- Expand process and mining to optimum throughput with tailings remining and fresh ore production to doré via BIOX.

Next steps

Further work to progress the study to a FS level of detail is recommended.

15 RISKS AND OPPORTUNITIES

15.1 Geology

Risks:

- The weathering surfaces used to classify the Mineral Resources as Oxide, Transitional and Fresh should be reviewed further in preparation for the completion of a Feasibility level study. More detailed modelling is recommended to fully capture the distribution and spatial location of these contacts within the modelling process.

Opportunities:

- Mineral Resource and exploration upside potential is assessed for the project. Extensions to the currently defined Resources may exist at depth below the Wiluna Central Mine area. Geological structures continue at depth with intercepts showing similar characteristics to those noted within the defined Mineral Resource envelope.
- A significant quantity of Inferred material exists within the Mineral Resource. Further infill drilling could convert this material to indicated or measured and potentially enable inclusion in future Ore Reserve estimates.
- Satellite deposits are yet to be fully explored, potential exists to expand the current satellite deposits such as Regent and Lakeway and to delineate new deposits. These will have the potential to add to the global Mineral Resource total.

15.2 Geotechnical

Risks:

Open Pit

The main risks associated with open pit stability at Wiluna concerns:

- Ground condition variability between existing pits and planned cutbacks may not be adequately captured with factual data.
- Groundwater sensitivity once further detailed hydrogeological analysis has been completed in the FS;
- Structural model development to determine geotechnical domains which will likely further optimise slope configurations and highlight areas of geotechnical risk;
- Requirement to confirm FoS = 1.5 slip surface line for East Lode Pit for long-term stability of TSF-J with current assumptions or back analysis parameters. The 2D Limit Equilibrium (LE) slide analysis using current conservative material parameters gives a FoS = 1.5 slip surface that intersect the East Dump/TSF-J.
- Poorer material parameters than expected may lead to an increase in waste dump rehandle volumes for East Lode, Bulletin and West Lode Pits, required to confirm with the FoS = 1.5 slip surface lines required for long-term stability.

Underground

- Seismic risk - Based on historic seismic data and records of significant damaging seismic events, seismic response is expected at depth. The response is most likely to be driven by interaction with faults and lithology contacts, interaction with low grade zones left as pillars, as well as interaction with diminishing pillars due to mining method and stope abutments.
- Historical void Interaction - Mining One is of the understanding that some of the planned stopes and development have a potential to interact with old workings, which are potentially flooded or may not be fully surveyed.

Opportunities:

Open Pit

The main opportunities associated with open pit slope optimisation/improvement at Wiluna after the PFS include:

- Targeted drilling and subsequent laboratory test work to areas where back analysis would not be appropriate. These areas will need to be identified as part of the next phase of work;
- Upside with undertaking additional laboratory testing i.e., triaxial testing, to refine conservative material parameters such as that of the saprolite material;
- Refinement to the existing weathering models which are used in the slope stability analysis to represent the critical materials encountered behind the pit slopes; and
- Reduced waste dump rehandle volumes and cost after refining the weathering models and updated material parameters.

Underground

- Calibration of numerical modelling – This would include additional geotechnical drilling and collection of samples for laboratory testing to potentially understand the anisotropy of the Rockmass.
- Backfill study – investigate backfill options to maximize ore recovery and improve regional stability.
- Vertical development – Determination of adequate locations for placement of vertical development.
- Portal ground support assessment.
- Hydrogeology study – Understanding water inflow locations and condition of water regarding potential for corrosion of ground support.
- Installation of seismic system to ensure adequate coverage especially for the lower portions of the mine where the seismic risk is expected to be high.

15.3 Hydrology and Hydrogeology

Risks:

- Availability of sufficient water of correct quality for processing.
- If there is a restart of underground mining, identify requirements for low/medium chloride water for underground operations and incorporate into site water balance.

Opportunities:

- Upgrade the RO unit at the flotation area from a BWRO unit to a SWRO unit to provide additional low chloride water by treating mine dewatering water.

15.4 Open Pit Mining

Risks:

- Geotechnical stability analysis of the PFS pit designs resulting in a FoS<1.5 and needing the removal of waste dump material from within the potential Zone of Instability.
- Mining costs are higher than modelled in the PFS reducing cashflow.
- Unknown heritage or environmental constraints delaying or preventing mining.
- Unable to assemble a competent mining technical services team (geology, survey and mine engineering) and engaging a competent mining contractor leading to reduced cashflow.
- Historic results indicated that dilution and ore loss may be higher than the values used.

Opportunities:

- Updated material parameters and weathering surfaces used for pit slope stability analysis:
  - may result in FoS>1.5, removing the need for removal of existing waste dump material and
  - provide data that may be used in analysis to support the steepening of the PFS pit slopes.
- Open pits not considered in the PFS that may be feasible and increase value with further investigation:
  - those areas requiring conversion of inferred to indicated including:
    - Adelaide and surrounding pits
    - Essex,
    - Magazine and Wiluna Queen.
  - those areas with indicated material but higher strip ratios:
    - to the south of Essex,
    - south of Essex and Lawlers Lode intersection,

15.5 Underground mining

Risks:

- Mining into unknown voids around existing workings
- Grade shown in resource model not achieved when actual mining occurs.
- Planned stopes have been previously mined, not shown in void model.
- Water damage not critical infrastructure slows down mining and creates addition cost to replace
- Issues sourcing critical infrastructure and bringing items to site
- Issues sourcing critical technical services personnel creating issues delivering required mine plans
- Ventilation not adequate for required production rates.

Opportunities:

- The reserve and production case for underground does not consider the entire minable inventory.
- Large Inferred resource can be converted with further infill drilling, a lot of the inferred resources are easily accessed via existing and planned development. This also enables the inferred areas of the Production target to be mined earlier is converted to indicated or measured.
- Additional Early tonnes able to be mined as per Figure 15-1. While not the optimal way to mine this area, it is possible to access and provides and addition 112,000t @ 3.69g/t which can be accessed very early in the mining schedule.

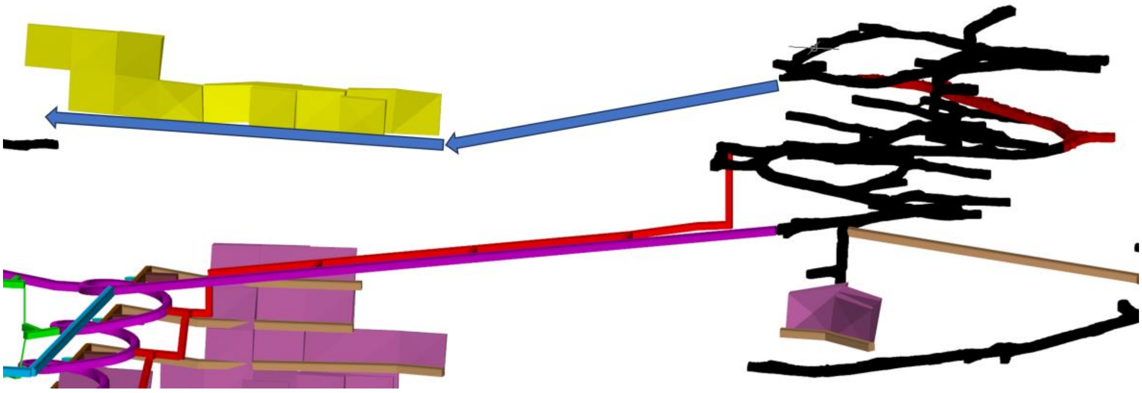


Figure 15-1: Potential Additional Ore off Happy Jack South Decline

15.6 Tailings Re-mining

Risks:

- Tailings more saturated than expected leading to slower than expected mining rate.
- Tailings more saturated than expected leading to lower density and therefore tonnage

- Large weather events leading to ponding of water in the historic TSF's.
- Re-mining costs are higher than modelled in the PFS reducing cashflow.

Opportunities:

- Geotechnical conditions more favourable on Western Cell and TSF H embankments – additional tailings material becomes available for re-treatment (Note: Mining One have removed tailings from the Mineral Resources and Ore Reserves where they are sterilised because of geotechnical recommendations).

15.7 Processing

Risks:

- Capacity of the tailings reclaim scrubber to sustain throughput up to 300 tph has not yet been demonstrated.
- The grind size P_{80} of the concentrate is coarser than previous operation and other BIOX operations. This could result in a slower oxidation rate and lower sulphide oxidation, which could impact downstream leach extraction and gold recovery. The grind size of the flash flotation concentrate is coarser and the previous regrind mill is no longer available as it has been repurposed as a lime slaking mill.
- Capital escalation to refurbish the BIOX circuit. Condition of the equipment refurbishment more than allowed in contingency.
- Organic carbon content in the concentrate, exceeding 0.2%, not sufficiently oxidised in the BIOX circuit causing reduced leach recovery due to preg-robbing.
- Sustained water abstraction from the eastern borefield to the licenced limit of 1.5 GL/y. There is no telemetry at the borefield to indicate pump issues and limited storage capacity at the processing plant in the event of bore pump issues.
- Capacity of the lime slaking circuit may require upgrades to sustain high lime consumption.
- Flash flotation may lead to coarse BIOX feed size, that requires further milling.
- Analysis of carbon elution, regeneration and loading is required to ensure the system is optimised.
- Confirm capacity of TSF decant return and mine dewatering systems to sustain required flow rates.

Opportunities:

- Review operation of the grinding circuit for refractory ore to identify possible changes to reduce the primary grind size.
- Value engineering of the refurbishment scope to reduce the capital cost. For example, the number of BIOX reactors, the number of leach/adsorption tanks, the number of CCDs, and potentially repurposing a CCD as the neutralisation discharge thickener.
- Defer the refurbishment and cost of two of the BIOX reactors, depending on the ramp-up of concentrate expected from the mine plan.
- Review and negotiate the contract strategy for engineering, procurement and construction that is the most cost effective and appropriate for the refurbishment scope.

- Reduce the schedule and complete the refurbishment of the BIOX circuit early.

15.8 Tailings Storage

Risks:

- Tailings capacity of TSF K to the final approved elevation of 537 mRL is insufficient for the Production Target. An additional tailings storage facility or in-pit disposal will be required.
- In-pit tailings disposal risks sterilising current known and future potential mineral resource.
- Timing risk for design, permitting and construction of TSF L. If delayed, could exceed the time when the new facility is required.
- Sequencing and constructability challenges during upstream raises of TSF K if there are no other facilities for tailing disposal during construction.
- Further work is required to develop TSF L to a PFS level.

Opportunities:

- Progress design and location for a new TSF.
- In-pit tailings storage in Golden Age pit.
- Continue to assess the viability of in-pit tailings disposal at the Matilda pits.
- Reclaim historic tailings from the Adelaide, Moonlight and Squib pits to provide other facilities for tailings disposal in the future.
- Potential mining and expansion of the Adelaide, Moonlight and Squib pits to provide larger pits for tailings disposal in the future.

15.9 Infrastructure

Risks:

- Increase in scope for the village upgrade if there is a further increase in headcount for underground mining from the preliminary estimate.
- Higher operating cost for site power if the power plant agreement is not renegotiated to install additional gas generators and the diesel generators are used. The cost of diesel is higher.
- Total site power demand exceeding the Contract Maximum Demand of 14.1 MW if there is a further increase in the power demand for underground mining or more equipment is added to the site power distribution.

Opportunities:

- Reduce the capacity of the wastewater treatment plant so that it is right-sized for the total expected headcount.
- Renegotiate the power plant agreement to install additional gas generators so that the increased site power demand of 12.2 MW can be supplied by gas generators as gas is considerably cheaper than diesel.
- Connect the tailings reclaim scrubber to the site power distribution, instead of the diesel generator, to reduce diesel consumption and cost.

- Continue gas trading to on-sell unused gas if the gas spot price is favourable to the contracted rates.
- Explore renewable energy options for power generation and/or renegotiate the power plant agreement to install more gas generators and increase the gas power generation above 10.4 MW to reduce the requirement for diesel generators.

15.10 Heritage, Environment and Permitting

Risks:

- Engagement with Native Title and Heritage Groups
- The Geology Manager at Wiluna Mining is responsible for engaging with the Wiluna and Tarlpa Native Title Claimant groups (Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC) Board. When mining resumes this engagement may be better served by dedicated liaison personnel.

  Previous owners of Wiluna gold mine have had an at times difficult relationship with local groups. A distrustful atmosphere can lead to delays in obtaining approvals for activities.

- Mining Approval – Calcrete

  The normal processes associated with Mining Approval can take a significant amount of time, including for calcrete mining. There is potential for these approval processes to delay calcrete mining until after the BIOX plant is commissioned.

  With the calcrete being required for pH neutralisation of the processing stream after BIOX treatment, any delay in calcrete mining approval will necessitate bringing in bulk lime for the neutralisation, at significant additional cost to Wiluna Mining.

  With the previous Supplementary Notice of Intent apparently still in good standing from 1998 the likelihood for delayed mining is much reduced, but not eliminated. Work is ongoing to ensure that all detail behind the previous approval remains in effect. Calcrete areas lie partially within Registered Heritage Sites and would require s18 exemption for disturbance. This is not expected to be a significant obstacle, as the RH site boundaries are set to include a buffer zone.

- Mining Approval – Open Pit Mining, Tailings Reclamation and Treatment to 3.2Mtpa

  Delays to this Mining Approval delay the commencement of tailings reclamation from TSF C and TSF H, as well as open pit mining of West Lode and Bulletin cutbacks, which form the core of the business case going forward for Wiluna Mining.

  As part of risk mitigation to avoid delays in approval timeframe associated with proving geotechnical stability arising from proximity of East Lode cutback to TSF H and TSF J, East Lode was withdrawn from this Mining Proposal. East Lode will be the subject of a separate Mining Proposal when sufficient information and argument can be brought to DMIRS to satisfy Zone of Instability concerns. It is anticipated that compilation and submission of East Lode Mining Proposal should proceed as a priority, to enable earliest scope for concurrent mining of West Lode and East Lode.

- Mining Approval – Eastern Borefield

Additional bores in the Eastern Borefield have been drilled under Works Approval. Mining Approval is required for Bore pump operation, and overhead powerline and pipeline installation. These bores are required for increasing treatment throughput to 3.2Mtpa. Delays in approval will result in an increase of hypersaline water used for treatment, which attracts higher reagent use and hence higher cost for treatment.

Currently heritage clearance is a critical path activity in this area. Communication with TMPAC is ongoing to facilitate agreement and clearance.

Risk management may involve re-routing the OHL and pipeline to skirt any contentious areas.

Opportunities:

- Wiluna Airstrip Upgrade

The Shire of Wiluna is seeking funding for an upgrade to the airstrip at Wiluna from 1800m to 2000m, which will be capable of handling larger aircraft suitable for FIFO commute. Use of larger aircraft for FIFO commute will enable direct flights to site, assisting with attraction/retention of personnel by reducing travel time and increasing flexibility.

Rock for crushing and screening for gravel for the airstrip, as well as for Department of Main Roads (DMR) and the Shire of Wiluna, is available in existing Wiluna Mining waste rock landforms (subject to testing for suitability).

Provision of this rock at commercial or on discounted terms will significantly reduce the capital cost for which federal funding is being sought, and bring forward the likely construction timeframe, as well as generating significant goodwill with the Shire of Wiluna and Wiluna residents.

16 FORWARD WORK PLAN

16.1 Geology

Further work on modelling the weathering surfaces is recommended prior to completion of a Feasibility level study. This will involve re-analysis of the weathering data contained within the Wiluna drilling database an updating of the current weathering surface profiles.

Plan and complete Resource infill drilling in areas within the early mine plan particularly where inferred blocks are located close the proposed mining area to assist with Resource to Reserve conversion; then infill drill high grade areas such as Essex and Adelaide etc.

Continued studies on Satellite deposits to determine if material can be brought into the schedule to replace currently defined Reserves in the mine plan, i.e. shallow, higher grade material. Follow-up on oxide targets located within the tenement holdings.

16.2 Geotechnical

To improve the Geotechnical knowledge at Wiluna, the following forward works are recommended:

Open Pit:

- Targeted geotechnical drilling and subsequent laboratory test work to refine current assumed material parameters;
- Where there is variation in ground conditions and slope stability back-analysis of existing slopes is not appropriate, targeted drilling is recommended. A review by a competent geologist is required to assess the possible changes in geology/geological structure between the current as-mined pits and the PFS pit areas;
- Localised groundwater monitoring in key mining areas is recommended to support slope stability analysis; and
- If significant changes are anticipated, a requirement to investigate further by means of geotechnical drilling etc. during the Feasibility Study (FS).

Underground

- Targeted Geotechnical drilling to enable collection of input parameters from representative rock mass domains for numerical modelling. These parameters may include young's modulus (E), Uniaxial Compressive strength (UCS), Anisotropy factor ($\sigma_{c\ max}$/ $\sigma_{c\ min}$), $m_{i\ min}$, $m_{i\ max}$, and Geological Strength index (GSI) (Vakili, A., Albrecht, J., Sandy, M., 2014).
- Calibration of numerical model using the Improved Unified Constitutive Model (IUCM), which specifically addresses anisotropic rock mass characteristics, and their impact on rock mass response. Previous modelling and rock mass characteristics have not sufficiently addressed anisotropy.
- Conduct a study to investigate backfill options to maximize ore recovery and improve regional stability.
- Review seismic system set up with a view to expand and optimise, to ensure adequate coverage especially for the lower portions of the mine where the seismic risk is expected to be high.

16.3 Hydrology and Hydrogeology

Hydrology:

1) Compile/ integrate mine water management plan and infrastructure based on updated mine plan with adapted the current existing drainage.
2) Update the engineering drawing design for the water/ drainage infrastructure plan during the FS stage which all water infrastructure should be sized and a cost estimate identified.

Hydrogeology:

1) Targeted hydrogeological investigation parallel with the geotechnical drilling program, include hydraulic conductivity test and piezometer (VWP) installation.
2) Compile all the current available hydrogeological data.
3) Develop a conceptual groundwater model and numerical groundwater model after the further hydrogeology future program is done. Result of hydrogeological model should be integrated with the geotechnical model.
4) Assess mine dewatering requirements. This includes pumping requirements and the cost estimate to be used at project economic evaluation phase/ FS stage.
5) A table of key impact risks for the effects of the mining operations.
6) Identify potential monitoring sites and appropriate frequencies to inform the overall groundwater and surface water regime.

16.4 Open Pit Mining

Obtain stakeholder engagement on conceptual waste dump designs and any adjustments required including dump height and relationship to the current Wiluna Airport OLS, rehabilitated slope configurations, footprint extents and interaction with surface runoff and drainage.

Detailed dilution and ore loss modelling and trial mining to test estimates.

Engage Mining contractors in a tendering process and update the mining cost assumptions for the FS.

Re-optimise open pits with new parameters including batter scale slope recommendations (based on updated material parameters and weathering surfaces), contractor mining costs, and processing costs and recoveries.

Assess the pit optimisation results and refine the open pit mining strategy to bring forward recoverable ounces to improve cashflow.

Where required, redesign the current open pits, design any new low strip-ratio pits, and reschedule for both FS and the mining contractor tendering process.

16.5 Underground Mining

The following items need further work to ensure a robust underground mine plan is achieved:

- Full mine design for all resources
- Using the full mine design, develop drilling targets to prove up inferred resources that will improve the reserve case mine plan.

- Review the underground ventilation strategy, to enable, cost effective and efficient ventilation of the underground mine.
- Review of the backfill strategy including the option for paste and dry stacked tails
- Conduct a full mining schedule optimisation study including the interaction between the open pits and underground sources, to ensure that the optimum plan is taken forward.
- Review and benchmark cost drivers for the underground, including but not limited to development cost per meter and stoping cost per tonne.

16.6 Tailings Re-mining

- Ongoing density measurement to validate and reconcile the drilling-based data.
- Update the mining cost assumptions for the FS.

16.7 Processing

- Complete the BIOX variability test work, including assessment of the impact of a coarser grind size. This also includes settling test work to confirm sizing of the neutralisation discharge thickener.
- Update the process engineering deliverables to feasibility study level. This includes the process design criteria, mass balance, Piping & Instrumentation Diagrams and process control philosophy.
- Early tender and engagement of the engineering company in the next stage of study.
- Update the mechanical and electrical deliverables to feasibility study level. This includes the mechanical, electrical and piping lists, tie-in lists, mechanical and electrical drawings, pump and piping calculations, and tender for vendor packages.
- Update the capital cost estimate to Class 3 level (±15%).
- Update the operating cost estimate to feasibility study level.
- Develop project execution plan and schedule and accompanying set of management plans.
- Tender and negotiate the contract strategy for procurement and construction for execution.
- Consider purchase of long lead time equipment.
- Develop commissioning plan including re-commissioning of the flotation and BIOX circuits.
- Develop an operational readiness plan, including maintenance strategies and spares, first fills, training, documentation, metal accounting and safety systems.
- Detail inoculation build-up plan. Source bacterial population and incorporate plan for inoculation build-up into the overall project plan.
- Conduct Hazard & Operability Study.

16.8 Tailings Storage

- Develop plan for LOM tailings storage to a Feasibility Study level of design.

- Progress the design and location of TSF L.
- Review the viability of in-pit tailings storage at the Golden Age pit in the short-term.
- Complete the design and permitting approval for the next lift of TSF K.
- Tender and negotiate the construction of the next lift of TSF K.

16.9 Infrastructure

- Conduct audit of village accommodation blocks and identify preferred block for demolition. Obtain updated village refurbishment cost estimate and plan for village upgrades.
- Obtain updated proposal for wastewater treatment plant.
- Commence discussions to install additional gas generators as a variation to the power plant agreement.
- Commence discussions to increase gas supply and gas transportation agreements.

16.10 Heritage, Environment and Permitting

Priority permitting approvals required:

- Obtain Mining Approval for open pit mining of West Lode Cutback and Bulletin Pit Cutback, mining of tailings from TSF C and H, tailings and ore treatment, refurbishment and operation of BIOX plant, operation of flotation treatment circuit, TSF K Stage 3 construction and operation.
- Obtain s18 exemption for calcrete mining in north-eastern calcrete area, or Mining Approval for calcrete mining in Northern Calcrete Area or Southern Calcrete Area.
- Obtain Mining Approval for construction of OHL and pipeline to additional bores and operation of expanded Eastern Borefield, including Heritage Agreement.

Future permitting approvals and action required:

- Further clarify underground Mining Approvals.
- Obtain Mining Approval for open pit mining of East Lode Cutback.
- Notification of Resumption of Operations to DMIRS Inspectorate for underground mining at Bulletin and Happy Jack.
- Renewal of DWER water abstraction licences, which expire 5/06/24 (include allowance for minimum 2-3 months processing time in timing of submission).
- Camp expansion will require building approval from the Shire of Wiluna prior to construction, including upgraded wastewater treatment facilities.
- Works Approval and Clearing Permits for surface mining works.
- Updated Project Management Plan will be required to cover the expanded scope of work on site from additional open pit and tailings mining and broader treatment practices.
- Updated Mine Closure Plan will be required to cover the expanded scope of work on site from additional open pit and tailings mining and broader treatment practices.
- Discussions with Shire of Wiluna regarding Wiluna airstrip upgrade.

- Provision of waste rock for screening to provide gravel for runway and general road construction (subject to satisfactory results from testing of waste material).
- Assessment of the risk of PAF and dispersive materials in the proposed pits and studies to identify potential areas; detailed mine planning to address risks.

Appendix A

JORC Table 1

WILUNA MINING CORPORATION JORC CODE, 2012 EDITION – TABLE 1 JORC CODE, 2012 EDITION – TABLE 1 WILUNA MINING CENTRE

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections).

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• Wiluna Mining has used i) reverse circulation drilling (RC) to obtain 1m samples from which ~3kg samples were collected using a cone splitter connected to the rig, ii) HQ or NQ2 (DDH) with ½ core sampling, or iii) LTK60 with full core sampling. Historical core in this report is either NQ2 or LTK60, predominantly drilled in the mid to late 2000's by Agincourt Resources and Apex Minerals. Apex Minerals alone drilled 1,024 diamond holes for 222,170m, with selective sampling, during their 2007 to 2013 tenure. • Wiluna Mining's sampling procedures are in line with standard industry practice to ensure sample representivity. Core samples are routinely taken from the right-hand-side of the cut line. For Wiluna Mining's RC drilling, the drill rig (and cone splitter) is always jacked up so that it is level with the earth to ensure even splitting of the sample. Face samples are taken across the face, with sample intervals matched to varying intensity of mineralisation as indicated by shearing and sulphides. • Historically (pre-Wiluna Mining), drill samples were taken at predominantly 1m intervals in RC holes, or as 2m or 4m composites in AC holes. Historical core sampling is at various intervals, indicating that sampling was based on geological observations at intervals determined by the logging geologist. • Wiluna Mining analysed RC and DDH samples using ALS laboratories in Perth. Analytical method was Fire Assay with a 50g charge and AAS finish. Golden Age and Lennon DDH grade control holes were also analysed at the Wiluna Mine site laboratory for preliminary results, pulverized in an LM5 bowl to produce a 30g charge for assay by Fire Assay with AAS finish. • At the laboratory, samples are weighed and then jaw crushed to 70% passing 6mm. Samples >3kg were 50:50 riffle split to become <3kg. The <3kg splits were crushed to <2mm in a Boyd crusher and pulverized via LM5 to 90% passing 75µm to produce a 50g charge for fire assay. Historical assays were obtained using either aqua regia digest or fire assay, with AAS readings. • Historical core samples were assayed at independent external laboratories Genalysis and ALS in Perth, using the same preparation method described above with either 30g or 50g charge. Analytical procedures associated with data generated by Apex and Agincourt are consistent with current industry practice and are considered acceptable for the style of mineralisation identified at Wiluna.

Criteria	JORC Code Explanation	Commentary
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	• Wiluna Mining data reported herein is RC 5.5" diameter holes. Diamond drilling is oriented HQ, NQ or LTK60 core. • Historical drilling data contained in this report includes RC, AC, RAB and DD core samples. RC sampling utilized face-sampling hammer of 4.5" to 5.5" diameter, AC and RAB sampling utilized open-hole blade or hammer sampling, and DD sampling utilized LTK 60 and NQ2 half core samples. It is unknown if core was orientated, though it is not material to this report. All Wiluna Mining RC drilling used a face-sampling bit.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• For Wiluna Mining RC drilling, chip sample recovery is visually estimated by volume for each 1m bulk sample bag and recorded digitally in the sample database. For DD drilling, recovery is measured by the drillers and Wiluna Mining geotechnicians and recorded into the digital database. Recoveries were typically 100% except for the non-mineralised upper 3 or 4m in RC holes, and the weathered upper 50 to 80m of DD holes that is generally more broken and fractured. For historical drilling, most core is in fresh competent rock and recoveries appear to be generally excellent. For DD drilling, sample recovery is maximised in weathered and broken zones by the use of short drill runs (typically 1.5m). For historical drilling, recovery data for drill holes contained in this report has not been located or assessed, owing to incomplete data records. Database compilation is ongoing. • For Wiluna Mining RC drilling, sample recovery is maximized by pulling back the drill hammer and blowing the entire sample through the rod string at the end of each metre. Where composite samples are taken, the sample spear is inserted diagonally through the sample bag from top to bottom to ensure a full cross-section of the sample is collected. To minimize contamination and ensure an even split, the cone splitter is cleaned with compressed air at the end of each rod, and the cyclone is cleaned every 50m and at the end of hole, and more often when wet samples are encountered. Historical practices are not known, though it is assumed similar industry-standard procedures were adopted by each operator. For historical drilling with dry samples it is unknown what methods were used to ensure sample recovery, though it is assumed that industry-standard protocols were used to maximize the representative nature of the samples, including dust- suppression and rod pull-back after each drilled interval. For wet samples, it is noted these were • collected in polyweave bags to allow excess water to escape; this is standard practice though can lead to biased loss of sample material into the suspended fine sample fraction. For DD drilling, sample recovery is maximised by the use of short drill runs (typically 1.5m). For Wiluna Mining drilling, no such relationship was evaluated as sample recoveries were generally excellent.

Criteria	JORC Code Explanation	Commentary
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* • *The total length and percentage of the relevant intersections logged.*	• Drill samples have been logged for geology, alteration, mineralisation, weathering, geotechnical properties and other features to a level of detail considered appropriate for geological and resource modelling. • Logging of geology and colour for example are interpretative and qualitative, whereas logging of mineral percentages is quantitative. • All holes were logged in full. Check-logging was completed on historical intervals retrieved, with only minor edits required to historical logs. • Core photography was taken for WMC diamond drilling.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• For core samples, Wiluna Mining uses half core cut with an automatic core saw. Samples have a minimum sample length of 0.3m and maximum of 1.5m, though typically 1m intervals were selected. A cut line is routinely drawn at an angle 10 degrees to the right of the orientation line. Where no orientation line can be drawn, where possible samples are cut down the axis of planar features such as veins, such that the two halves of core are mirror images. • For historical drilling sampling techniques and preparation are not known. Historical core in storage is generally half core, with some quarter core remaining; it is assumed that half core was routinely analysed, with quarter core perhaps having been used for check assays or other studies. Holes have been selectively sampled (visibly barren zones not sampled, though some quartz vein intervals have been left un-sampled), with a minimum sample width of 0.3m and maximum of 1.2m, though typically 1m intervals were selected. • RC sampling with cone splitting with 1m samples collected, or in the hangingwall 4m scoop composites compiled from individual 1m samples. RC sampling with riffle or cone splitting and spear compositing is considered standard industry practice. • For historical samples the method of splitting the RC samples is not known. However, there is no evidence of bias in the results. • Wiluna Mining drilling, 1m RC samples were split using a cone splitter. Most samples were dry; the moisture content data was logged and digitally captured. Where it proved impossible to maintain dry samples, at most three consecutive wet samples were obtained before drilling was abandoned, as per procedure. AC samples were 4m composites. • Jaw crushing and splitting is considered to be standard industry practice; each sample particle has an equal chance of entering the split chute. At the laboratory, >3kg samples are split so they can fit into a LM5 pulveriser bowl. At the laboratory, >3kg samples are split 50:50 using a riffle splitter so they can

Criteria	JORC Code Explanation	Commentary
		fit into a LM5 pulveriser bowl. • Field duplicates were collected approximately every 20m down hole for Wiluna Mining holes. With a minimum of one duplicate sample per hole. Analysis of results indicated good correlation between primary and duplicate samples. RC duplicates are taken using the secondary sample chute on the cone splitter. AC duplicates were scooped in the field. It is not clear how the historical field duplicates were taken for RC drilling. • Riffle splitting and half-core splitting are industry-standard techniques and considered to be appropriate. Where sampling occurred through 'stope' intervals, these samples don't represent the pre-mined grade in localized areas. • For historical drilling, field duplicates, blank samples and certified reference standards were collected and inserted from at least the early 2000's. Investigation revealed sufficient quality control performance. No field duplicate data has been located or evaluated in earlier drilling. Field duplicates were collected every 20m down hole for Wiluna Mining holes. Analysis of results indicated good correlation between primary and duplicate samples. • Sample sizes are considered appropriate for these rock types and style of mineralisation and are in line with standard industry practice.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Fire assay is a total digestion method. The lower detection limits of 0.01ppm is considered fit for purpose. For Wiluna Mining Exploration drilling, ALS completed the analyses using industry best-practice protocols. ALS is globally-recognized and highly-regarded in the industry. Historical assaying was undertaken at Amdel, SGS, and KalAssay laboratories, and by the on-site laboratory. The predominant assay method was by Fire Assay with AAS finish. The lower detection limit of 0.01ppm Au used is considered fit for purpose. Samples analysed at ALS and with Au > 0.3g/t are also assayed for As, S and Sb using ICPAES analysis ("ME-ICP41"). Apex analysed samples at ALS (four-acid digest with ME-ICP finish for S, As, Fe, Pb, Zn, Sb, Bi, Te, and AAS finish for Au), and at Genalysis (four-acid digest with ICP-OES or ICP-EOES finish for S, As, Fe, Pb, Zn, Sb, Bi, Te, and AAS finish for Au, and additional leachwell with tail analysis for Au done on quartz reef samples. • No geophysical tools were required as the assays directly measure gold mineralisation. For Wiluna Mining drilling, down-hole survey tools were checked for calibration at the start of the drilling programme and every two weeks. • For Wiluna Mining drilling certified reference material, blanks and duplicates were submitted at 1:20 ratios. Check samples are routinely submitted to an umpire lab at 1:20 ratio. Analysis of results confirms the accuracy and precision of the assay data. Duplicates show good correlation between original and repeat analyses with very few samples plotting outside acceptable ranges (+/- 20%). Blanks and quartz flushes are inserted after logged high grade core samples to minimise and check for smearing, analyses of these results typically shows no smearing has occurred. It is understood that previous explorers great Central Mines, Normandy and Agincourt employed QAQC sampling,

Criteria	JORC Code Explanation	Commentary
		though historical QAQC data have not been assessed. During the period of 2007- 2013 under Apex Minerals' ownership of the Wiluna project, QAQC procedures were undertaken on diamond drilling (DD) sample batches. QAQC samples including CRM and blank material were submitted with original sample batches for laboratory assay. CRMs and blanks were inserted at a rate of approximately 1 in 20. Re-assay of historical samples and assay of umpire batches were also undertaken during this period. Additionally, a procedure for routine insertion of blank material and quartz flushes after samples where visible gold was logged in core was also in place. The Apex QAQC was not previously included in the project database until 2021, when following a review of original Apex DD sample sheets and original laboratory reports, 2709 QAQC samples from 214 DD holes drilled in this period were able to be loaded into the drilling database.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative Company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Wiluna Mining's significant intercepts have been verified by several Company personnel, including the database manager and geologists. • Wiluna Mining drilled 31 RC and DDH holes to twin historical RC and DDH holes drilled by a variety of previous operators at various resource zones across Wiluna. Correlation between intercepts was generally poor when intercepts were greater than 20m apart reflecting the shortrange variability expected in gold deposits of this style. • Wiluna data represents a portion of a large drilling database compiled since the 1930's by various project owners. • Data is stored in Datashed SQL database. Internal Datashed validations and validations upon importing into Micromine were completed, as were checks on data location, logging and assay data completeness and down-hole survey information. QAQC and data validation protocols are contained within Wiluna Mining's manual "Wiluna Mining Geology Manual 2021". Historical procedures are not documented. • The only adjustment of assay data is the conversion of lab non-numeric code to numeric for estimation.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• All historical holes appear to have been accurately surveyed to centimetre accuracy. Wiluna Mining's drill collars are routinely surveyed using a DGPS with centimetre accuracy. • Grid systems used in this report are GDA 94 Zone 51 S. Drilling collars were originally surveyed in either MGA grid or Mine Grid Wiluna 10 and converted in Datashed to MGA grid. • An accurate topographical model covering the mine site has been obtained, drill collar surveys are closely aligned with this. Away from the mine infrastructure, drill hole collar surveys provide adequate topographical control. • WMC drillholes are routinely surveyed using continuous north-seeking gyro at the end of hole, with 'sighter' surveys conducted while drilling. Historical diamond drill holes were surveyed downhole at

Criteria	JORC Code Explanation	Commentary
		close regular spacing using a Reflex or Eastman camera attached to a 6m aluminium extension to minimise magnetic interference, at 15m, 50m and every 50m thereafter. A selection of holes were subsequently gyro surveyed to confirm the single shot method has not been significantly affected by magnetic rocks. • Down-hole survey tools are calibrated weekly.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Wiluna Mining's exploration holes are generally drilled 25m or 50m apart on sections spaced 25m apart along strike. • Historical drill hole spacing is typically 50m x 25m of 25m x 25m in Indicated Resource areas and 50m x 50m in Inferred areas. • The mineralisation lodes show sufficient continuity of both geology and grade between holes to support the estimation of resources which comply with the 2012 JORC guidelines • Samples have been composited only where mineralisation was not anticipated. Where composite samples returned significant gold values, the 1m samples were submitted for analysis and these results were prioritized over the 4m composite values.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Orientation of drilling to mineralisation ranges from 45 to 90 degrees to the strike of the lodes and 20 to 90 degrees to the dip of the lodes. • RC drill holes were generally orientated perpendicular to targets to intersect predominantly steeply-dipping north-south or northeast-southwest striking mineralisation, though underground DD holes were in places drilled obliquely; true widths are shown in the significant intercepts table. • The perpendicular orientation of the drill holes to the structures minimises the potential for sample bias.
Sample security	• *The measures taken to ensure sample security.*	• It is not known what measures were taken historically. For Wiluna Mining drilling, samples are stored in a gated yard until transported by truck to the laboratory in Perth. In Perth the samples are likewise held in a secure compound.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No external audit has been completed for this resource estimate. For Wiluna Mining drilling, data has been validated in Datashed and upon import into Micromine. QAQC data has been evaluated and found to be satisfactory.

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	• The drilling is located wholly within M53/6, M53/30, M53/40, M53/44, M53/95, M53/69, M53/468, M53/200 and M53/32. The tenements are owned 100% by Wiluna Operations Pty Ltd., a wholly owned subsidiary of Wiluna Mining Corporation Ltd, except for M53/30 which is owned 94/96 by Wiluna Operations Pty Ltd and 2/96 by Mr James Murray Jackson. • The tenements are in good standing and no impediments exist. • Franco Nevada have royalty rights over the Wiluna leases of 3.6% of net gold revenue.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Modern exploration has been conducted on the tenement intermittently since the mid-1980's by various parties as tenure changed hands many times. This work has included mapping and rock chip sampling, geophysical surveys and extensive RAB, RC and core drilling for exploration, resource definition and grade control purposes. This exploration is considered to have been successful as it led to the eventual economic exploitation of several open pits during the late 1980's / early 1990's, and underground mining to the present day. The deposits remain 'open' in various locations and opportunities remain to find extensions to the known potentially economic mineralisation.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The gold deposits are categorized as orogenic gold deposits, with similarities to most other gold deposits in the Yilgarn region. The deposits are hosted within the Wiluna Domain of the Wiluna greenstone belt.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole*	• Exploration results are not reported in this report for the first time. The reader is referred to numerous separate ASX releases concerning exploration results.

Criteria	JORC Code Explanation	Commentary
	○ *down hole length and interception depth* ○ *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Significant intercepts are reported as length-weighted averages. For Wiluna: above a 1.0g/t cut- off and > 2.0 gram x metre cut off (to include narrow higher-grade zones) using a maximum 2m contiguous internal dilution. • In places, broad widths of lower grade mineralisation are identified where the mineralised shear zone is wider and comprises multiple higher-grade zones within a broadly mineralised envelope, which may ultimately upon the completion of relevant mining studies (in progress) be amenable to bulk underground mining methods with lower cost and lower economic cut-off grades. Where this style of mineralisation exists, broad 'halo' intercepts are calculated by allowing no limit to internal dilution and no internal lower cut-off grade. E.g. BUUD0102 = 62.54m @ 1.76g/t from 0m (broad intercept), comprising 7.11m @ 4.57g/t from 0m, 0.3m @ 6.32g/t from 10.28m, • 14.05m @ 4.09g/t, and 6.81m @ 2.34g/t. • High-grade internal zones are reported above a 5g/t envelope, e.g. BUUD0102 contains 7.11m @ 4.57g/t from 0m including 1.25m @ 15.08g/t and 0.68m @ 6.44g/t. Ultra-high grades zones of >30g/t are additionally reported. No metal equivalent grades are reported because only Au is of economic interest.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Lode geometries at Wiluna are generally steeply east or steeply west dipping. Generally the lodes strike north-northeast to northwest-southeast. Historical drilling was oriented vertically or at - 60° west, the latter being close to optimal for the predominant steeply-east dipping orientation. At Golden Age, the lode strikes NW-SE, with drilling from underground oriented at various angles depending on available drill sites. Drill holes reported herein have been drilled as closed to perpendicular to mineralisation as possible. In some cases due to the difficulty in positioning the rig close to remnant mineralisation around open pits this is not possible. True widths are always included in the significant intercepts table when results are reported for the first time.

Criteria	JORC Code Explanation	Commentary
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Exploration results are not reported in this report for the first time. The reader is referred to separate ASX releases with details provided in the body of this report.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• For Wiluna Mining drilling, either all significant assay results are reported or the hole is listed as 'no significant intercepts'. Full reporting of the historical drill hole database of over 80,000 holes is not feasible.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Other exploration tests are not the subject of this report.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Follow-up resource definition drilling is likely, as mineralisation is interpreted to remain open in various directions. • Exploration results are not reported in this report for the first time. The reader is referred to separate ASX releases with details provided in the body of this report.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code Explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	• The WMC corporate geological database is located on a dedicated Microsoft SQL2008R server. The database itself utilises the Maxwell Geoservices 'DataShed' architecture, and is a fully relational system, with strong validation, triggers and stored procedures, as well as a normalised system to store analysis data. The database itself is accessed and managed in house using the DataShed front end, whilst routine data capture and upload is managed using Maxwell's LogChief data capture software. This provides a data entry environment which applies most of the validation rules as they are directly within the master database, ensuring only correct and valid data can be input in the field. Data is synced to the master database directly from this software, and once data has been included, it can no longer be edited or removed by LogChief users. Only the company database manager and assistant have permissions allowing for modification or deletion.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person is a full time employee of Mining One Consultants and has visited the site in March 2023 for two days.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	• Confidence in the geological interpretation is moderate to high. The geological and mineralogical controls at Wiluna are well understood as the deposits have been mined since the 1930's from both open pit and underground mining methods. Existing stopes and development drives have been used in conjunction with drill hole intercepts to guide the mineralisation interpretation and determine lode geometry. • The mineralisation was interpreted using drill hole data (RC chips and diamond core) drilled from surface and underground locations. Existing pit and surface mapping and underground void wireframes were used to guide the current interpretation. • Alternative lode orientations could be modelled which would alter lode dip in certain areas. This alternative interpretation would have little effect on reported grade and global tonnage. The current interpretations are based on those used historically. • An extensive suite of quality underground geology maps have been used in conjunction with in-pit mapping and observations during open pit mining to assist in the geological understanding of the controls on mineralisation. Geological logging of drill samples has been used to define oxide, transitional and fresh domains which have been used as hard boundaries within the Mineral Resource estimation. Logging of quartz veins have assisted in the interpretation of lodes. Only diamond and reverse circulation drilling samples were used in the final estimate however all available data was used in the geological assessment. • Gold mineralisation is predominantly associated with second to third order north and northeast trending brittle to brittle-ductile dextral strike-slip faults, localised at dilational bends or jogs along faults, at fault intersections, horsetail splays and in subsidiary overstepping faults. Mineralisation is predominantly shear controlled at Wiluna, although the Golden Age lodes are quartz reef hosted.

Criteria	JORC Code Explanation	Commentary
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The Wiluna deposits occur along a NS strike extent of greater than 3.6km from 9,220N to 12,835N (local grid) and are encompassed within a 1.6km wide corridor from 9,270E to 10,900E. Drilling extends to a vertical depth of approximately 1,600m and the mineralisation has been modelled from surface to a depth of approximately 1,200m below surface. • Lodes vary in strike between 330 and 045 degrees, with most lodes striking between 000 and 015 degrees. The dip of each lode varies from 60° to sub-vertical.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind*	• Estimation of gold grade has been completed using Ordinary Kriging (OK) in all domains. Arsenic was estimated into the model using the regression formula 695.4*au_ok_ppm+1561. Sulphur is also estimated using a regression formula namely 1493*au_ok_ppm + 6602. Antimony is estimated using inverse distance squared. • The lode wireframes were created in Leapfrog software. The lode wireframes have been used to define the domain codes used for estimation. The drillholes have been flagged with the domain code and composited using the domain code to segregate the data. Hard boundaries have been used at all domain boundaries for the grade estimations. • Compositing has been undertaken in Leapfrog to 1 m and then imported into Surpac software. There are no residual samples. • The influence of extreme gold assays has been reduced by top-cutting across selected domains. The top-cut thresholds have been determined using a combination of histograms, log-probability and mean-variance plots. Top-cuts have been reviewed and applied to the composites on a domain-by-domain basis. • Variography has been determined based on historical analysis supplied by Wiluna Mining and also verified by Mining One using the geostatistical analysis in Surpac. Where there is insufficient data to generate meaningful variograms, variograms have been grouped or borrowed from other similar domains. • The drillhole data spacing ranges from less than 10 m spacing in areas of dense data to greater than to 100 m in sparsely drilled generally deep areas. • The extrapolation distance along strike from the end points was half the drill spacing at each deposit, which generally resulted in extrapolation distances of 12.5m or 25m. Down dip extents were generally half the up dip distance of the previous mineralised intersection which resulted in distances ranging from 25m to 130m. • The block model parent block size is 10 m (X) by 10 m (Y) by 5 m (Z) and sub-blocks down to 2.50 m (X) by 1.25 m (Y) by 1.25 m (Z), with the sub-blocks estimated at the scale of the parent block. The block size is considered appropriate for the drillhole spacing throughout the deposit. • Grade estimation has been completed in three estimation passes with the requirements for filling blocks in each pass summarised as: o Pass 1 estimations have been undertaken using a minimum of 3 and a maximum of 15 composites with a dynamic search

Criteria	JORC Code Explanation	Commentary
	modelling of selective mining units. • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	ellipsoid radius of 25m. o Pass 2 estimations have been undertaken using a minimum of 2 and a maximum of 10 composites with a dynamic search ellipsoid radius of 50m. o Pass 3 estimations have been undertaken using a minimum of 1 and a maximum of 3 composites with a dynamic search ellipsoid radius of 250m. • Previous estimates have been completed across all the deposits. These were a combination of operational models for both underground and open pit, and resource models completed by external consultants. The mineralisation interpretations for the current estimate were based on those used in the previous estimate, and utilised information from active mining areas to guide lode geometry and continuity. • The Mineral Resource estimate has been validated using visual validation tools, mean grade comparisons between the block model and composite grade means, and swath plots comparing the composite grades and block model grades by Northing, Easting and RL. • No selective mining units are assumed in this estimate. • There will be no by-products recovered from the mining of the Au lodes. • Arsenic and Sulphur were estimated in the model as these are important metallurgical indicators. • The Wiluna deposits have been well drilled from surface and at numerous UG locations. Open pit GC drilling at 5m spacing has been conducted across many of the open pits such as EW Lodes and Happy Jack. The widest regular drill spacing across the Wiluna deposits is 100m NS and 25m EW. • A dynamic 'ellipsoidal' search was used to select data and was based on parameters taken from the variography. Ellipse adjustments were made to honour lode geometry for the minor lodes. • The deposit mineralisation was constrained by wireframes constructed using down hole assay results and associated lithological logging. Wireframes were used as hard boundaries in the interpolations at each deposit. Weathering surfaces were generated from drill hole logging and analysis of leach well data and these were used to code regolith types.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages are estimated on a dry basis. No moisture values were reviewed.

Criteria	JORC Code Explanation	Commentary
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• Surface open pit optimisations have been evaluated using Whittle software and Mineral Resources reported above 0.35g/t for oxide and transitional and 0.70g/t for fresh rock inside $3,250 AUD/oz optimised pit shell. • Determination of the below pit cut-off grade has been calculated based on assumed typical underground mining method adopted as part of the current feasibility studies. The cut-off grade is based on a gold price of A$2750/oz and mine costs which reflect the current contract rates. The total overall operating cost of A$175/t ore and overall payable metal recovery of 91.2%. Mineral Resources are reported above 2.3g/t Au below to pit shells. • Mining One assesses the application of these technical parameters suitably reflect reasonable prospects for eventual economic extraction.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• Most of the Wiluna deposits have been extensively mined using UG methods (ore development drives and stoping methods). The updated models have been estimated with the assumption that the deposits will be mined using UG methods utilising existing historical declines and access points. • Extensive open pit mining has occurred across the deposits and potential open pit cut backs will be assessed, based on current economic conditions.

Criteria	JORC Code Explanation	Commentary
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• In Wiluna fresh ore most gold occurs in either solid solution or as submicroscopic particles within fine-grained sulphides. Historically Au recovery through the Wiluna BIOX plant averaged 83%. • WMC has recently outlined a process whereby the sulphides are separated and captured from the gangue minerals through floatation and concentrated. The concentrate is then shipped overseas and the gold extracted through pressure oxidation. Recoveries are estimated to be >90%. • Oxide and transitional ore has generally been oxidised and is free milling to a depth of approximately 80m. Metallurgical analyses resulted in averaged leach recoveries, on the oxide and transitional ores, of 90.8% and 84.3% after 24 hours.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• The Wiluna deposits have been mined using open pit and underground methods since the 1930's. The area is currently an active mining area with all relevant infrastructure such as tails dams already in place and well established. • No environmental, permitting, legal, taxation, socio-economic, marketing or other relevant issues are known, that may affect the estimate.

Criteria	JORC Code Explanation	Commentary
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density values were determined through analysis of rock samples and diamond core. • A total of 16,206 determinations were completed by Apex staff for every assayed interval over the course of 18 months (mid 2007 to end of 2008). The procedure works on the water immersion method and involved weighing 10cm billet of clean core (no oven drying) followed by suspending and weighing in water to determine volume. WMC has accumulated a dataset of more than 4,350 SG determinations on drill core from the Wiluna deposits since 2015. Determinations were completed at ALS Laboratory in Perth using the water immersion method, and wax coating (ALS code OA-GRA08) at a 1:5 ratio. • An average bulk density value was assigned to oxide, transitional, and fresh material based on analysis of sample results at each lode. Lodes without bulk density data have been assigned default bulk densities taken elsewhere in the mine. Waste dump and tailings material was assigned an average value of 1.8t/m^3. The backfill material has been assigned a 2.1t/m^3 density value.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• Mineral Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). • The deposits have been classified as Measured, Indicated and Inferred Mineral Resource based on a combination of quantitative and qualitative criteria which included geological continuity and confidence in volume models, data quality, sample spacing, lode continuity, and estimation parameters (number of informing composites, estimation pass number, average distance of composites, kriging quality parameters). • The Indicated portion of the Mineral Resource was defined across the main lodes though areas that had generally been filled in the first estimation pass and blocks were estimated by informing composites at an average distance of 40m or less; the kriging efficiency and slope of regression were generally >=0.7; moderate to high confidence was observed in lode continuity (strike and thickness); and areas were defined by RC and Diamond holes on spacings of 40m or less. Digitised strings were used to form regular shapes to code these areas. • The mineralisation that has been estimated in the second or third pass that does not meet the criteria for Indicated has been classified as Inferred Mineral Resource. Unclassified material is present in some domains generally in areas filled by the final fourth pass of the interpolation. • Although comprehensive stope and void depletion solids are available, there is uncertainty as to whether voids are open, backfilled with waste, or backfilled with mineralised material. It is not clear if all pillars remain or if they were mined out. There is also a risk that not all depletion files have been located, and that material currently estimated as in-situ has been mined historically. These factors were taken into account when applying confidence categories to the various lodes. • The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent insitu mineralisation. The definition of mineralised zones is based on high level geological understanding from good quality sample data, producing models of continuous mineralised lodes. Validation of the block models showed good correlation

Criteria	JORC Code Explanation	Commentary
		of the input data to the block estimated grades. • The input data is considered reliable as WMC have implemented Quality Control measures which have confirmed the suitability of data for use in the Mineral Resource estimates. • The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• Previous Mineral Resource estimates across the Wiluna deposits have been reviewed by Mining One and other consultants. The most recent previous Mineral Resource was reported November 2021. Results from those audits have been used to improve the existing models. • Mining One have completed an independent Mineral Resource model that in broad terms correlates with the 2021 estimate released by Wiluna Mining.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the*	• The Mineral Resource estimate is intended for both underground and open pit mining assessment and reports global estimates. • The Mineral Resource has been estimated with a moderate degree of confidence which has been reflected in the classification into Indicated and Inferred categories. The deposits have been mined since the 1930's by open pit and underground mining methods thus the controls on mineralisation are well understood. Recent in pit observations and grade control drilling, and historical underground face mapping and drill core logging, have verified the structural controls on mineralisation and have been used in the interpretation of the current mineralised lodes. Data quality is good and drill holes have detailed logs produced by qualified geologists. Recognised laboratories have been used to analyse drill samples and check the quality of results produced by the onsite laboratory. There is a lack of confidence in the immediate vicinity of UG stopes and drives with respect to how much insitu remnant material remains as historical documentation is incomplete. Recent diamond drilling from surface has intersected voids where anticipated which has improved confidence in the position of voids at the local scale across certain areas. This uncertainty has been captured by use of a 5m buffer around all underground voids. • The Wiluna deposits were being actively mined by open pit and underground methods up until 2022. Mineral reserves and resources were reconciled and reported monthly. The reconciliation was conducted by spatially comparing the resource and reserve models with the site grade control models, Declared Ore Mined (DOM) and stockpile balancing. The pits have achieved reasonable reconciliation to date. The UG lodes were historically mined with only the Golden Age lode currently being mined intermittently. Stope grades are based on weighted average of drill intersections. The UG material is blended with open pit material so is difficult to reconcile. The UG ore does not form a significant component of monthly totals. The current models have been depleted within all known voids, drives, and stopes.

Criteria	JORC Code Explanation	Commentary
	estimate should be compared with production data, where available.	

Section 4 Estimation and Reporting of Ore Reserves (Open Pit / Underground)

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	*Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve* *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	▪ The Mineral Resource estimate used for the Wiluna Mining Centre was based on the 2023 Mining One Mineral Resource block model (wil_m1_jun23_bm.mdl) and the block model was used to develop the Ore Reserve estimate. ▪ The Mineral Resources are reported inclusive of the Ore Reserves.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	▪ Marcus Jacobs, the Competent Person for Section 4 (Open pits) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023. ▪ Gary Davison, the Competent Person for Section 4 (Underground) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023. The site visit did not reveal any matters that may affect the ability to declare an Ore Reserve. ▪ Both site visits did not reveal any matters that may affect the ability to declare an Ore Reserve.
Study Status	*The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have*	▪ Conversion of the Mineral Resource to an Ore Reserve was on the basis of a viable mine plan and engineering design interrogating the resource model. The work was completed to a PFS level of detail and relevant material Modifying Factors have been considered. ▪ Approved and designed TSF K option 1 is available for 21.4 Mt of the 22.9 Mt of combined tailings and open pit ore reserve, and options for the remaining 1.5 Mt are currently at a scoping study level of detail. Timelines for the design and subsequent approval of a paddock style TSF L presents is a risk to available storage capacity and needs to be addressed to minimise disruption to production. There is however some capacity for storing tailings in pit that has been done on site historically.

Criteria	JORC Code explanation	Commentary
	determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	
Cut-off parameters	▪ *The basis of the cut-off grade(s) or quality parameters applied*	▪ A cut off grade assessment was completed using a AUD$2,880 gold price. The assessment included processing costs and recovery estimates for all mining areas assessed by the 2023 Wiluna Open Pit PFS. By material type the resulting cut off grades were: o Oxide 0.35 g/t Au o Transitional 0.42 g/t Au o Fresh (BIOX-CIL) 0.87 g/t Au ▪ Based on the mining, process and general and administrative (G&A) costs, and considering the realised gold price along with royalties, refining charges and transportation costs, the cut-off grade (COG) for mining was calculated as 2.6 g/t. I.e. at $2,880/oz, this is $241/t which for the purposes of this study, approximately covers all mining and treatment costs. This was the beginning of an iterative process. Future calculations should take into account metallurgical recoveries and any increase in gold price.
Mining factors or assumptions	▪ *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* ▪ *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in*	▪ Most recent open pit mining at Wiluna was undertaken using conventional truck and excavator fleets. The 2023 PFS determined that open pit mining with this arrangement was the most appropriate method for the selected open pits. ▪ A Whittle assessment was initially completed (Lerchs & Grossmann, 1965) and used as the basis for detailed pit designs then scheduling. ▪ Total mining costs of $4.95/t were applied in the pit optimisation. The costs include contract mining, grade control, load and haul and mining related site operational staff costs. ▪ ▪ Based on observations and slope performance, the pit designs were based on the recommended slope parameters. <table><tr><td>Material</td><td>Batter face angle (°)</td><td>Berm width (m)</td><td>Batter Height (m)</td></tr><tr><td>Oxide</td><td>65</td><td>5</td><td>20</td></tr><tr><td>Transitional</td><td>55</td><td>5.5</td><td>15</td></tr><tr><td>Fresh</td><td>70</td><td>4</td><td>20</td></tr></table>▪ Waste rock designs used similar parameters to existing dumps: o Berm width – 5m o Batter angle – 36 degrees o Batter height – 20m ▪ Grade control drilling was taken into account. ▪ A minimum mining width (bench width) of 20m was used in the assessment. ▪ A dilution and mining recovery (ore loss) assessment was completed using a selective mining unit (SMU) of 3 m x 5 m x 2.5 m (x,y,z) and a global dilution factor of 115% (block size plus 15% dilution) and a mining recovery of 95% was adopted for pit optimisations, scheduling and cashflow modelling. Historic results indicated that dilution and ore loss may be higher than the values used, and as a result the inclusion of blast movement monitoring in

Criteria	JORC Code explanation	Commentary
	mining studies and the sensitivity of the outcome to their inclusion. ▪ *The infrastructure requirements of the selected mining methods.*	grade control processes has been recommended along with detailed dilution and ore loss modelling and trial mining to test estimates. ▪ Inferred material was excluded from the Ore Reserves and treated as waste. Pit optimisations indicate that some areas are sensitive to the inclusion of Inferred Resources; priority will be placed on infill drilling in these areas. ▪ Underground mining method is based of historical mining method of long hole open stoping, using waste fill and pillars where geotechnically required. ▪ A dilution and mining recovery (ore loss) assessment was completed and a dilution factor of 0.25m on the hanging wall and footwall of the stopes. Stopes preliminarily design using MSO then altered as required. A mining recovery (ore loss) factor of 95% was used in the model.
Metallurgical factors or assumptions	▪ *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* ▪ *Whether the metallurgical process is well-tested technology or novel in nature.* ▪ *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* ▪ *Any assumptions or allowances made for deleterious elements.* ▪ *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* ▪ *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	▪ The Wiluna Mining Centre operates a Carbon-In-Leach (CIL) gold processing facility that will used for processing oxide, transitional and historical tailings material to produce gold doré. Sulphide feed will be treated through the existing crushing, grinding and flotation circuits, the concentrate will be oxidised in the Biological Oxidation (BIOX) circuit and the BIOX residue leached and recovered to produce gold doré. ▪ Both metallurgical processes use well tested technology and are considered the most appropriate for the style of mineralisation; the CIL process is currently used at Wiluna and the BIOX circuit has been previously used at Wiluna and will be refurbished. ▪ Extensive operating data was available for assessment and included: ○ Metallurgical operating data from the 2022 sulphide flotation campaign ○ Data from historic BIOX operations and ○ Recent Western Cell tailing reprocessing data ▪ Recovery factors for each weathering domain were: ○ Free milling oxide: 84.0% ○ Free milling transition/sulphide: 78% ○ Flotation: 87.5% and BIOX residue: 96% for 84%. ▪ There are no deleterious elements expected for the production of gold doré.
Environmental factors or assumptions	▪ *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue*	▪ The mining and processing facilities are located on granted mining leases. ▪ Investigation into the extent and applicability of environmental studies including flora, subterranean fauna and heritage surveys will be required for the southern calcrete area to enable early submission of a Mining Proposal, and any additional calcrete mining areas. ▪ The Eastern borefield is a good quality water source and while Works Approval has been granted for commissioning additional bores, the installation and operation of bore pumps, extension of overhead powerlines and discharge pipelines requires a separate Mining Proposal. Stygofauna surveys for the Mining Proposal have been conducted and Heritage Clearance remains outstanding.

Criteria	JORC Code explanation	Commentary
	storage and waste dumps should be reported.	▪ Small pockets of material with elevated sulphur could occur across all weathering horizons, primarily in fresh rock and will require management to prevent waste from acidifying. Measures in the Wiluna Mining Environmental Management plan includes measures such as risk assessments of adverse materials and encapsulation.
Infrastructure	▪ *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	▪ The mining and processing facilities are located on granted mining leases. An additional tailings storage facility (TSF L) would require confirmation of lease approvals, the extent and applicability of environmental studies and heritage surveys required for permitting and works approval. ▪ Power generation at Wiluna is from a combination of gas and diesel fired generators and gas is supplied from various sources. Increased gas demand from the restarting of the BIOX circuit will require and increase in supply from about 1.8 TJ/d to about 2.2 TJ/d. ▪ Water at Wiluna is sourced from a number of groundwater sources including the eastern borefield, Caledonian Pit and open pits and underground from Wiluna, Matilda, and Galaxy Mine Areas. Relevant water abstraction licences issued by the Department of Water and Environmental Regulation (DWER) are due to expire in early June 2024 and require renewal. ▪ The site is close to Wiluna and the Goldfields Highway. There is a sealed runway at the Wiluna Aerodrome although the current preference is to use facilities at Mt Keith operations close to 90 km south. ▪ Accommodation is currently available at the existing Wiluna Mine Village and while some blocks require rejuvenation a significant expansion is not required.
Costs	▪ *The derivation of, or assumptions made, regarding projected capital costs in the study.* ▪ *The methodology used to estimate operating costs.* ▪ *Allowances made for the content of deleterious elements.* ▪ *The source of exchange rates used in the study.* ▪ *Derivation of transportation charges.* ▪ *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* ▪ *The allowances made for royalties payable, both Government and private.*	▪ Capital costs for the process plant capital cost estimate was developed within the scope and defined limits to an AACE Class 4 estimate with an accuracy level of ±25%. The estimate was in AUD and does not include or allow for foreign exchange fluctuations. ▪ Capital costs for tailings storage facility options used a cost of AUD$20/m^3, which is comparable with some of the previous TSF J lifts. ▪ Gold doré transport and TC/RC's were obtained from industry benchmarks and freight charges were actual values from 2022. ▪ Open Pit Mining costs were based on the most recent Wiluna costs for contract mining and owner's costs and were updated to reflect current expected market conditions. The average mining cost including both fixed and variable costs was $4.95/t. ▪ Underground Mining costs were based on the most recent Wiluna costs for contract mining and owner's costs and were updated to reflect current expected market conditions. The average mining cost including both fixed and variable costs was $173/t. ▪ The Western Australia State Government royalty of 2.5% metal product and a Franco Nevada royalty of 3.6% for 6.1% was applied to gold produced.
Revenue factors	▪ *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment*	▪ The head grade is derived from interrogating the Mineral Resource model with the proposed mine design. Mining factors were applied to account for recovery and dilution. ▪ The economic evaluation was based on a gold price of A$2,880/oz. Doré transport and refining costs were applied at A$8.01/oz and A$2.84/oz respectively. ▪ The cashflow has been modelled in real terms and no price or cost escalations were applied.

Criteria	JORC Code explanation	Commentary
	charges, penalties, net smelter returns, etc. ▪ *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	
Market assessment	▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	▪ Gold is a precious metal and is subject to fluctuations in supply and demand. ▪ Gold is planned to be sold to Perth Mint at spot price. ▪ There are no hedging arrangements currently in place.
Economic	▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	▪ A discount rate of 8.0% was used in the analysis of the Ore Reserve estimate NPV. ▪ The project demonstrates a positive NPV based on the inputs and assumptions used in the evaluation. ▪ The NPV is most sensitive to recovery and closely followed by gold price and exchange rate. NPV is less sensitive to processing cost, mining cost and G&A cost respectively.
Social	▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	▪ Stakeholder engagement is ongoing and is required to ensure effective communication and engagement and minimise risks to the project. ▪ While the relationship with the Tarlka Matuwa Piarku Aboriginal Corporation (TMPAC) has had difficulties during a period of personnel changes within [WMC], the relationship has improved following recent engagement. WMC is working within its existing agreements with TMPAC that apply to the operations the subject of the PFS and is re-engaging with TMPAC about a new exploration agreement that will apply beyond the operations the subject of the PFS. This and additional resourcing will provide the foundation for managing related operational and approval risks.
Other	▪ *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* ▪ *Any identified material naturally occurring risks.*	▪ Mining Proposals are required for the mining of open pits (initially Bulletin and West Lode, and later East Lode), mining of tailings from TSF C and TSF H, and ongoing treatment of tailings and open pit ore. ▪ Engagement with regulators has commenced, and compilation of a Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities. ▪ The Wiluna Mining Corporation is currently subject to Deed of Company Arrangement (DOCA).

Criteria	JORC Code explanation	Commentary
	▪ *The status of material legal agreements and marketing arrangements.* ▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent*	▪ Approvals for bore pumps and extension of overhead powerlines and discharge pipelines at the Eastern borefields, require a Mining Proposal and Heritage Clearance remains outstanding. ▪ Timing is a risk for the design and permitting of a new TSF for some TSF options, although this is expected to be needed only later in the project.
Classification	▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	▪ Only Indicated resources at Bulletin, East Lode and West Lode have been assessed for estimation of Ore Reserves. Indicated resources above cut off and within the PFS designs have been classified as Probable Ore Reserves. ▪ It is the Competent Person's view that the methods used for the purpose of Ore Reserve estimation provide a fair and reasonable estimate of the mineable parts of the Mineral Resources as it is currently understood.
Audits or reviews	▪ *The results of any audits or reviews of Ore Reserve estimates*	▪ No external audit has been completed.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion*	▪ The Ore Reserves are based on a PFS completed to a level of detail that is typically expected for the scale of the Mineral Resource currently understood. No statistical procedures were carried out to quantify the accuracy of the estimate. ▪ This statement relates to global estimates of tonnes and grade. ▪ Key risks to the Ore Reserve value are: gold price, grade tonnage distribution, production rate, mining recovery and dilution, metallurgical recovery and mining costs.

Criteria	JORC Code explanation	Commentary
	of the factors which could affect the relative accuracy and confidence of the estimate. ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

Section 4 Estimation and Reporting of Ore Reserves (Tailings Retreatment)

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

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	▪ *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve* ▪ *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	▪ The Mineral Resource estimate used as the basis for conversion to an Ore Reserve is "wiltails_m1_model_10_11_23.mdl". ▪ The Mineral Resources are reported inclusive of Ore Reserves
Site Visits	▪ *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* ▪ *If no site visits have been undertaken indicate why this is the case.*	▪ Gary Davison, the Competent Person for Section 4 (Tailing Re-treatment) is an employee of Mining One Consultants Pty Ltd and recently visited the Wiluna Mining Centre in July 2023. The site visit did not reveal any matters that may affect the ability to declare an Ore Reserve.
Study Status	▪ *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* ▪ *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	Current Production: ▪ Wiluna is currently re-mining and re-treating the tailings from the Western Extension TSF. Prior Studies ▪ Prior to the commencement of tailings retreatment, a number of studies had been completed to establish the feasibility of tailings retreatment. These include a PFS (Blackham, 2019). ▪ The re-mining of tailings has been shown to be technically achievable. ▪ The current tailings re-treatment is achieving a cash positive position. The planned tailings re-treatment is NPV positive, satisfying the requirement to be economically viable.
Cut-off parameters	▪ *The basis of the cut-off grade(s) or quality parameters applied*	▪ No cut-off has been applied to the re-mining of the tailings. All material able to be mined within the selected TSF's is planned to be processed.
Mining factors or assumptions	▪ *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* ▪ *The choice, nature and appropriateness of the selected mining method(s) and other mining*	Mining Method: ▪ Re-mining of the tailings at Wiluna is currently being undertaken by conventional 50t and 80t backhoe configured excavators with a fleet of 7 x 40t Bell/Hitachi articulated haul trucks. This fleet is planned to carry on the re-mining. An ancillary fleet of 1 x Dozer, 1 x Grader and 1x Water Cart are also engaged in supporting the primary mining equipment. ▪ Mining is undertaken in 2.5m horizontal flitches. ▪ To assist with drying out of the tailings, each flitch is ripped by a dozer in advance of mining where required. ▪ The outer walls are de-stacked as mining progresses. The walls adjacent to existing TSF's are left intact to preserve their integrity. For TSF H, this ensures that TSF J south wall integrity is maintained. For Western Cell TSF, the west wall of TSF C remains intact until such time as the upper portion is mined in line with the LOM plan.

	parameters including associated design issues such as pre-strip, access, etc. ▪ *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* ▪ *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* ▪ *The mining dilution factors used.* ▪ *The mining recovery factors used.* ▪ *Any minimum mining widths used.* ▪ *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* ▪ *The infrastructure requirements of the selected mining methods.*	▪ Loaded trucks haul the tailings to the scrubbing plant where they are stockpiled before loading into a hopper. ▪ Site has previous history of rehandling reclaimed tailings, such as lifting the walls on TSF J. Geotechnical: ▪ As per recommendations from Knight Piesold (2021), where the TSF H and Western Cell TSF's are mined against TSF J and TSF C respectively, a buttress of tailings is left to ensure the stability of the adjacent structure (TSF). ▪ A trafficability study was undertaken by Knight Piesold (2022) by conducting a load bearing assessment of the TSF's (TSF H and Western Cell). For most locations and depths, the FOS were >1.9, well above 1.5 FOS requirement. Where the in-situ undrained shear strength falls below FOS 1.5, strategies have been recommended for the wheeled equipment (Trucks, grader, FEL). Mining Modifying Factors: ▪ Recovery – 100% of the tailings are planned to be recovered. ▪ The TSF's were constructed using tailings for the lifts, therefore, the only likely dilutant material is tailings themselves (at the same grade as the material came from within the same tailings mass). On this basis, no dilution factors have been applied. ▪ Minimum mining widths – there are no specified minimum mining widths. The bases of the historical TSF's are relatively large (several hundred metres across) with the truck fleet highly manoeuvrable and the excavators able to mine to tight tolerances. Mine Plan: ▪ The re-mining of the tailings has been sequenced and scheduled using MineSched^{TM} software. The production rate required from the historical TSF's is The plan is to mine the TSF's in the following order: ➢ Western Extension TSF; ➢ TSF H; ➢ TSF C (upper); and ➢ TSF C (lower). ▪ Inferred Mineral Resources – There are no Inferred Mineral Resources planned to be mined in the mine plan. All material scheduled has been classified as Indicated Mineral resources. ▪ Infrastructure requirements – No additional mining infrastructure is required to re-mine the tailings. A Scrubbing Trommel and associated materials handling has recently been constructed and commissioned which pre-treats the tailings ahead of the CIL plant.
Metallurgical factors or assumptions	▪ *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* ▪ *Whether the metallurgical process is well-tested technology or novel in nature.* ▪ *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* ▪ *Any assumptions or allowances made for deleterious elements.*	▪ Metallurgical Processes – The Wiluna Mining Centre operates a Carbon-In-Leach (CIL) gold processing facility that will used for processing oxide, transitional and historical tailings material to produce gold doré. ▪ Maturity Level – The current method of treatment via CIL is a well understood method in the mining industry, and commonly used in Australia. Recent Western Cell tailing reprocessing data was available for assessment to support the Ore Reserve. ▪ Test work was undertaken as part of previous studies (e.g., Blackham, 2019). This informed the decision to commence re-treatment in March 2023. Since that time, the CIL plant has performed to expectations. The testwork was domained by TSF and by sub regions in each TSF where appropriate. TSF C has been subdivided into upper and lower on the basis of grade, metallurgical recovery and material type. The upper portion of TSF C is included in the LOM plan, while the lower portion is excluded. ▪ Gold is recovered to Doré for Tailings re-treatment and no deleterious elements are recovered using the processes described. ▪ For the purposes of this PFS, the mining of two x 2.5m flitches for a total of 275kt tonnes (~1% of the Ore Reserve) is considered more than adequate to establish the technical viability of the process.

<table>
<tr>
<td></td>
<td>▪ The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.
▪ For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</td>
<td>▪ Reconciled mill production for the period March-May 2023 (inclusive) was as follows:
<table>
<tr><th>Month</th><th>Head Grade</th><th>Met. Recovery</th><th>Processed</th><th>Processed</th><th>Moisture</th></tr>
<tr><th></th><th>(Au, g/t)</th><th>(%)</th><th>(t, wet)</th><th>(t, dry)</th><th>(%)</th></tr>
<tr><td>March 2023</td><td>0.92</td><td>48.0%</td><td>112,527</td><td>99,910</td><td>11.2%</td></tr>
<tr><td>April 2023</td><td>0.80</td><td>48.8%</td><td>95,376</td><td>78,742</td><td>17.4%</td></tr>
<tr><td>May 2023</td><td>0.89</td><td>47.5%</td><td>112,802</td><td>95,953</td><td>14.9%</td></tr>
<tr><td>Total</td><td>0.87</td><td>48.1%</td><td>320,705</td><td>274,605</td><td>14.3%</td></tr>
</table>
This is result is well in advance of the grade expected from the top of the dam, in the range 0.60-0.65 g/t Au.</td>
</tr>
<tr>
<td>Environmental factors or assumptions</td>
<td>▪ The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</td>
<td>▪ Acid Mine Drainage analysis of the historical tailings material was undertaken as part of the previous PFS (Blackham, 2019), with each master composite subject to analysis. Results obtained indicate Net Acid Potentials ranging from -172 kg H_2SO_4/t to -116 kg H_2SO_4/t with all composites characterised as non-Acid forming.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>▪ The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</td>
<td>▪ All the infrastructure required to mine and process the historic tailings dam facilities is currently in place. The current TSF (TSF K) has sufficient volume to support the Ore Reserve.</td>
</tr>
<tr>
<td>Costs</td>
<td>▪ The derivation of, or assumptions made, regarding projected capital costs in the study.
▪ The methodology used to estimate operating costs.
▪ Allowances made for the content of deleterious elements.
▪ The source of exchange rates used in the study.
▪ Derivation of transportation charges.
▪ The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</td>
<td>Capital costs
▪ There are no additional up front capital cost requirements for the mining and re-processing of tailings.
▪ Sustaining capital of 5% of mining operating cost has been applied to cover mining equipment costs.
Mining
▪ Mining costs for the Ore Reserve assume tailings re-mining concurrent with open pit, underground tailings re-mining. This allows shared overhead and fixed costs. Where open pit mining ceases, an extra allowance for re-mining has been applied.
▪ LOM Minng costs associated with tailings re-treatment are based on a first principles estimate based on the current operating costs.
Processing
▪ Processing costs associated with tailings re-treatment are based on a first principles estimate based on the current operating costs.
G&A</td>
</tr>
</table>

	▪ *The allowances made for royalties payable, both Government and private.*	▪ The current G&A costs support the re-mining and re-treatment of tailings. In the Ore Reserve case, costs are increased and are shared between open pit, underground and tailings re-mining.
Revenue factors	▪ *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* ▪ *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	▪ The head grade is derived from interrogating the Mineral Resource model with the proposed mine design. ▪ The economic evaluation was based on a gold price of A$2,880/oz. Doré transport and refining costs were applied at A$8.01/oz and A$2.84/oz respectively. ▪ The cashflow has been modelled in real terms and no price or cost escalations were applied.
Market assessment	▪ *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* ▪ *A customer and competitor analysis along with the identification of likely market windows for the product.* ▪ *Price and volume forecasts and the basis for these forecasts.* ▪ *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	▪ Gold Doré is the product produced for sale. Gold is a freely traded commodity on the open market and is subject to the forces of supply and demand. ▪ Gold is planned to be sold to Perth Mint at spot price. ▪ There are no hedging arrangements currently in place. ▪ A customer and competitor analysis is not required as there are no product sales contracts.
Economic	▪ *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* ▪ *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	▪ Discounted Cash Flow (DCF) methods have been applied to generate a Net Present Value (NPV) for the tailings re-treatment component of the Wiluna Mining Centre. The gold price assumed to generate the Ore Reserve is AUD$2,880/oz A pre-tax Discount rate of 8% (Real) has been applied. ▪ Inflation and escalation are not considered as all cash flows are conducted in real terms, based on estimates prepared which represent current pricing. ▪ The tailings re-treatment plan has been tested at the planned production rate of 3.2Mtpa. Positive cashflows and a positive NPV were generated for the mining plan.
Social	▪ *The status of agreements with key stakeholders and matters leading to social licence to operate.*	▪ Stakeholder engagement is ongoing and is required to ensure effective communication and engagement and minimise risks to the project.

Other	▪ *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:*
	▪ *Any identified material naturally occurring risks.*
		▪ Mining of the Western Cell TSF has received government approval.
		▪ An approved Project Management Plan (PMP) exists which covers the existing mining operations, including:
		  ▪ Tailings reclamation from the Western Cell TSF
		  ▪ Conventional Processing to 2.2Mtpa
		  ▪ Deposition and storage of tailings in TSF K to 518.5mRL.
		▪ Mining Proposals are required for the mining of tailings from TSF C and TSF H, and ongoing treatment of tailings.

	▪ *The status of material legal agreements and marketing arrangements.* ▪ *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent*	▪ Engagement with regulators has commenced, and compilation of a Mining Proposal is in progress. Submission is required at the earliest opportunity to enable continuous processing beyond the commissioning period of the Wiltails treatment plant and associated activities. This proposal includes an increase in production rate from 2.2 to 3.2Mtpa. ▪ The Wiluna Mining Corporation is currently subject to Deed of Company Arrangement (DOCA). ▪ Approvals for bore pumps and extension of overhead powerlines and discharge pipelines at the Eastern borefields, require a Mining Proposal and Heritage Clearance remains outstanding.
Classification	▪ *The basis for the classification of the Ore Reserves into varying confidence categories.* ▪ *Whether the result appropriately reflects the Competent Person's view of the deposit.* ▪ *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	▪ Probable Ore Reserves have been derived from Indicated Mineral Resources with appropriate modifying factors applied. ▪ The Wiluna Tailings Re-treatment Ore Reserve estimate appropriately reflects the Competent Person's views. ▪ None of the Probable Ore Reserves have been derived from Measured Mineral Resources.
Audits or reviews	▪ *The results of any audits or reviews of Ore Reserve estimates*	▪ The Ore Reserve estimate has not undergone any external audits.
Discussion of relative accuracy/ confidence	▪ *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* ▪ *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic*	▪ The Ore Reserves are based on a PFS completed to a level of detail that is typically expected for the scale of the Mineral Resource currently understood. No statistical procedures were carried out to quantify the accuracy of the estimate. ▪ This statement relates to global estimates of tonnes and grade. ▪ Key risks to the Ore Reserve value are predominantly gold price, with metallurgical recovery and mining costs as lesser risks.

	evaluation. Documentation should include assumptions made and the procedures used. ▪ *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* ▪ *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

JORC Consent Form

Competent Person's Consent Form

Pursuant to the requirements of ASX Listing Rules 5.6, 5.22 and 5.24 and
Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

Report Name

WILUNA PREFEASIBILITY STUDY For WILUNA MINING CORPORATION

February 07, 2024.

Statement

I, Marcus Jacobs

confirm that

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member or Fellow of The Australasian Institute of Mining and Metallurgy.
- I have reviewed the Report to which this Consent Statement is attached.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Ore Reserves.

Consent

I consent to the release of the Report

	07/02/2024
Signature of Competent Person:	Date: DD/MM/YYYY
AusIMM	330210
Professional Membership: AUSIMM or AIG	Membership Number:
	Simon Curd, Palmyra.
Signature of Witness:	Print Witness Name and Residence:

JORC Consent Form

Competent Person's Consent Form

Pursuant to the requirements of ASX Listing Rules 5.6, 5.22 and 5.24 and
Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

Report Name

WILUNA PREFEASIBILITY STUDY For WILUNA MINING CORPORATION

February 07, 2024.

Statement

I, Gary Robert Davison

confirm that

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member or Fellow of The Australasian Institute of Mining and Metallurgy.
- I have reviewed the Report to which this Consent Statement is attached.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Ore Reserves.

Consent

I consent to the release of the Report

	08/02/2024
Signature of Competent Person:	Date: DD/MM/YYYY
AusIMM	106195
Professional Membership: AUSIMM or AIG	Membership Number:
	Olivia Mallia, Thornbury
Signature of Witness:	Print Witness Name and Residence:

Appendix B
Geology

List of Attachments

No Attachments

Appendix C
Geotechnical

List of Attachments

Not for ASX Release

OPEN PIT

C-1 Peter O'Bryan, and Associates (July 2018), "Wiluna Gold Project Geotechnical Assessment Open Pit Mining Free Milling Project"

C-2 Peter O'Bryan, and Associates (Feb 2019), "Geotechnical Overview Wiluna Free Milling and Matilda Open Pits" – document not included

C-3 Peter O'Bryan, and Associates (Aug 2020), "Wiluna Gold Operations Open pit and Underground design parameters" – document not included

C-4 Peter O'Bryan, and Associates (Mar 2021), "Wiluna Gold Operations Surface Slope Stability Post-Abandonment"

C-5 Blackham Resources (Aug 2019), "Internal Memo" – document not included

C-6 Mining One (Jul 2023), "Wiluna Pit Observations from Site Visit"

UNDERGROUND

C-3 Peter O'Bryan, and Associates (Aug 2020), "Wiluna Gold Operations Open pit and Underground design parameters"

C-7 Peter O'Bryan, and Associates (Feb 2016), "Geotechnical Assessment – Wiluna Undergrounds"

C-8 Peter O'Bryan, and Associates (July 2017), "Matilda Gold Operations, Wiluna Expansion Study, Additional Geotechnical Assessment, Underground Mining" – document not included

C-9 Peter O'Bryan, and Associates (Aug 2017) "Matilda Gold Operations, Wiluna Expansion Study, East Load Portals Design Review No.1

C-10 Mine Geotech (March 2022), "Wiluna Underground Geotechnical Assessment"

Appendix D

Hydrology and Hydrogeology

List of Attachments

Not for ASX Release

D-1 (Not included in Provided Appendices)

D-2 Rockwater Consultants (Jun 2021), “Potential Sources of Water for Expanded Mining Operation”

D-3 Knight Piesold (Jan 2021), “Surface Water Management Design, Wiluna Matilda Operations”

D-4 Tetra Tech Coffey (Aug 2021),“Desktop Hydrogeological Assessment Golden Age Pit”

D-5 (Not included in Provided Appendices)

D-6 (Not included in Provided Appendices)

D-7 Wiluna Mining Corporation (Oct 2022), “Water Level Data – 2022”

D-8 Wiluna Mining Corporation (Jul 2022), “Groundwater Monitoring Review (April 2017 – March 2020)”

D-9 Wiluna Mining Corporation (Aug 2022), “Bore fields Water Monitoring Master”

D-10 Wiluna Mining Corporation (2018-2021), “Annual Environmental Report 2018, 2019, 2020, 2021”

D-11 BPL Environmental (Apr 2021), “2021 Wiluna Mine MP 96162”

D-12 KH Morgan & Associates (Nov 18), “Wiluna Mine Area Hydrogeological Impact Assessment”

Appendix E
Open Pit Mining

List of Attachments

Not for ASX Release

Appendix F
Processing

List of Attachments

Not for ASX Release

Appendix G
Tailings

List of Attachments

Not for ASX Release

Appendix G1 WSP TSF K Options Assessment
Appendix G2 Wiluna Tailings Scoping Study Report
Appendix G3 Knight Piesold Wiltails Project Stability Assessment

Appendix H
Calcrete

List of Attachments

No Attachments

Appendix I
Infrastructure

List of Attachments

Not for ASX Release

DOCUMENT INFORMATION

Status	Final
Version	Final
Print Date	16th February 2024
Author(s)	Mining One
Reviewed By	Dean Basile
Pathname	https://miningoneaus.sharepoint.com/sites/5362_MWilunaPFS2023/Shared Documents/General/Reporting (WPO)/5362_M_7767_Final.docx
File Name	5362_M_7767_Final
Job No	5362_M
Distribution	e.g. 1 x bound copy to client; 1 x CD to client; PDF emailed to client

DOCUMENT CHANGE CONTROL

Version	Description of changes/amendments	Author (s)	Date

DOCUMENT REVIEW AND SIGN OFF

Version	Reviewer	Position	Signature	Date
Final	D Basile	Managing Director		8/2/2024