



Simandou Technical Report Summary

In accordance with Subpart 1300 of Regulation S-K under the U.S. Securities Act of 1933 and Item 601(b)(96) thereunder

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Date and signature page

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1 Executive summary

1.1 Property description and ownership

This report Technical Report Summary (TRS) has been prepared for the Property in accordance with Subpart 1300 of Regulation S-K (SK-1300) under the U.S. Securities Act of 1933 and Item 601(b)(96) thereunder.

The Simfer Iron Ore Project consists of the exploitation of the iron ore deposits (in particular and without limitation the Ouéléba and Pic de Fon deposits) located within the 369 square kilometre (km²) perimeter of the Simandou South mining concession (Concession) covering mining blocks 3 & 4, which is held by Simfer S.A., together with all related mining infrastructure (Simfer Mine) (The Property).

The Property is located in the Republic of Guinea (State), approximately 550 kilometres (km) southeast of Conakry (Guinea's capital) towards the southern end of the 110 km long Simandou Range.

Simfer S.A. is owned by Simfer Jersey Limited (Simfer Jersey) (85%) and the State (15%). Simfer Jersey is an incorporated joint venture comprising Rio Tinto Simfer UK Limited (53%), and Chalco Iron Ore Holdings Limited (47%) (CIOH).

With a targeted production of 60 million tonnes per annum (Mtpa) of high grade iron ore fines¹, the Simfer Iron Ore Project will exploit one of the largest known undeveloped high grade hematite iron ore deposits in the world.

The neighbouring Simandou North mining concession (blocks 1 & 2) is held by Winning Consortium Simandou S.A.U. (WCS MineCo) (WCS Concession).

Iron ore extracted from the Property (and WCS's neighbouring mining concession) will be exported via a rail and port infrastructure to be co-developed (Co-Developed Infrastructure) as a joint venture between the State, Simfer Infraco Ltd. (Simfer Infraco) and WCS Infraco, with the ultimate owner and operator of the Co-Developed Infrastructure being the Compagnie du Transguinéen (CTG), an incorporated joint venture between Simfer Infraco (42.5%), WCS Infraco (42.5%) and the State (15%) (the Co-Developed Infrastructure Project).

Agreements with the State to create the legal framework for the Co-Developed Infrastructure Project have been signed and approved for ratification by the Guinean National Assembly on 3 February 2024. They however remain subject to additional conditions, including regulatory approvals.

The Co-Developed Infrastructure will include a purpose-built port facility to be constructed at Morebaya estuary (south of Conakry) which will facilitate the export of the iron ore from both the Property and WCS Concession. The port will be built in phases. Phase 1 WCS barge port (WCS Barge Port) is to be constructed by WCS PortCo and Phase 2 Simfer TSV port (Simfer Port) is to be constructed by Simfer Infraco's subsidiary Simfer Infraco Guinée S.A. (SIG) to reach an overall capacity of 120 Mtpa, with WCS Barge Port capacity to be shared between WCS MineCo and Simfer S.A. pending completion of Simfer Port. The port will be accessed by a purpose built 536 km main rail line (Main Rail Line, to be constructed by WCS RailCo) with rail spurs (namely the Simfer Spur Line regarding the Simfer Iron Ore Project, and the WCS Spur Line regarding WCS's mining project) connecting the Concession (68 km) and WCS Concession (16 km) respectively. The Main Rail Line will have an initial capacity of up to 120 Mtpa.

The Co-Developed Infrastructure will also allow for passenger and general cargo transport services. Iron ore from the Property will initially be loaded onto barges and, when the Simfer Port is commissioned, trans-shipment vessels (TSV) for their subsequent loading onto ocean-going vessels for export.

References to the 'Simandou Project' in this TRS collectively refer to the Simfer Iron Ore Project, the WCS mining project and the Co-Developed Infrastructure Project.

¹ The estimated annualised capacity of approximately 60 million dry tonnes per annum iron ore for the Simandou life of mine schedule was previously reported in a release to the Australian Securities Exchange (ASX) dated 6 December 2023 titled "Investor Seminar 2023". Rio Tinto confirms that all material assumptions underpinning that production target continue to apply and have not materially changed.

1.2 Geology and mineralisation

The Simandou Range iron ore occurrences are located within the Kénéma-Man Domain in the southern part of the West African Craton. This domain is comprised of Archaean basement, comprised predominantly of granitic gneiss, and amphibolitic gneiss (locally migmatitic). The oldest dated basement group in the domain is the ~3.5 billion years (Ga) Guélématata Gneiss.

The Ouéléba and Pic de Fon deposits are located in the Simandou Range on a prominent ridge. The Simandou Range is the result of multi-phase ductile deformation represented by tight synformal fold keels and sheared antiformal structures. The ridge consists of a formation of itabirites (metamorphosed Banded Iron Formation (BIF)), and phyllites overlying basement gneiss and amphibolite.

The Ouéléba and Pic de Fon deposits are typical of supergene-enriched itabirite hosted iron ore deposits. The deposits are similar to other known examples such as the Nimba deposit (Guinea) and deposits within the Iron Quadrangle (Brazil).

Mineralisation is hosted in the itabirite formation which conformably overlays the phyllite formation. There are four main mineralisation groupings: itabirite (siliceous), hematite-goethite (primarily Ouéléba), hematite (primarily Pic de Fon) and weathered.

Ouéleba hematite-goethite mineralisation consists mainly of friable hematite-goethite material extending locally also to depths greater than 400 metres (m) below surface. Hematite mineralisation at Pic de Fon consists mainly of friable hematite material extending locally to depths greater than 400 m below surface. There is a variable component of ultrafine material. Both the hematite, and hematite-goethite mineralisation are chemically and texturally variable, which is evident in the localised hard to medium-hard mineralisation areas.

At Ouéléba, there are small areas of dominantly hematite-only mineralisation similar to the primary mineralisation type at Pic de Fon. These areas appear to increase in abundance towards the northeast of the deposit.

The mineralisation front generally degrades downwards, from the hematitic, or hematite-goethite mineralisation, into partially mineralised and generally friable itabirite, then into slightly enriched itabirite, before finally becoming unenriched, dolomitic, and magnetitic compact itabirite.

Surface mineralisation shows variable degrees of weathering, which increases deleterious elements such as phosphorus, and alumina. This is associated with hydration processes and goethite cementing. Weathering is highly variable in thickness (up to 40 m), and weathered goethite mineralisation also occurs in both flatter topographic areas and on the flanks of the deposits. Numerous debris flows have deposited iron-rich detrital materials, such as cangas (CAN), on the flanks of both deposits. These CANs commonly, unconformably, overlie phyllite or basement lithologies with thicknesses varying from several metres up to 40 m.

1.3 Exploration

Initial reconnaissance exploration, consisting mainly of surface mapping and shallow pit sampling, was carried out by French and Chinese geologist in the area in the 1950s and 1970, respectively. Rio Tinto began exploration of the Simandou Range in 1997 identifying Pic de Fon as a priority target for drill testing. Ouéléba was identified as an additional priority target in 2005.

Detailed surface mapping programs were undertaken in 2000, 2008 and 2010 at both Pic de Fon and Ouéléba, supporting the on-going mapping by the site-based geology team.

Drilling techniques used over the history of the Property include reverse circulation (RC), and diamond drilling (DD). Drilling was mostly RC, with a lesser proportion of DD drilling. 69% of total drilled metres are RC at Ouéléba and 70% at Pic de Fon.

RC drilling at Pic de Fon first commenced in 1998, and several campaigns have been completed from then until 2013. There was no drilling completed at Pic de Fon in 2000, 2004, 2005, 2006, and 2010.



Drilling commenced at Ouéléba in 2005, with 23 RC holes being completed. In 2006, a small number of DD holes were completed. The drilling completed in 2007 and 2008 represents 74% of the total metres drilled. Drilling in these years was dominantly RC. Drilling was ongoing from 2005 to 2013, however, there was no drilling completed in 2009 or 2010.

From 2013 to 2021 no drilling or mapping was undertaken on the project. In 2022 drilling recommenced with a focus on diamond drilling of the Ouéléba deposit.

1.4 Mineral Resources estimate

The Ouéléba and Pic de Fon deposits that contain the Mineral Resources and form the basis for the feasibility study lie along a north-south ridge line of the Simandou Range within the Concession and are separated by 5 km. The northern deposit (Ouéléba) is approximately 8 km in length and the southern deposit (Pic de Fon) is approximately 7.5 km in length, both being up to 1 km wide.

The relevant Qualified Persons (QPs) are satisfied that there has been sufficient orebody knowledge work completed to support reasonable prospects for economic extraction at the Property from a Mineral Resources perspective. Evaluation data collection includes geological and geotechnical drilling; ground, aerial and satellite mapping; Light Detection and Ranging (lidar) topographical surveys; geophysical logging; monitoring of streams and water bores for quality and flows; and the installation of weather stations. This data has been evaluated through a number of testing programmes and studies.

Total drilling of more than 250 km has been used as the basis for interpretation of the Mineral Resources. More than 130 km (680 holes) are drilled at Ouéléba, and more than 110 km (570 holes) are drilled at Pic de Fon.

Table 1-1 summarises the Mineral Resources exclusive of Mineral Reserves reported as at 31 December 2023.

Table 1-1: Simandou Mineral Resources exclusive of Mineral Reserves (dry basis) (Simfer Iron Ore Project) as at 31 December 2023¹

	Likely mining method ²	Measured Mineral Resources as at 31 December 2023						Indicated Mineral Resources as at 31 December 2023						
		Tonnage	Grade (%)					Tonnage	Grade (%)					
Iron ore ³		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	
Simandou (Guinea) ⁴	O/P	66	67.1	1.9	1.1	0.04	1.0	198	66.2	1.8	1.5	0.05	1.8	
Total Measured and Indicated Mineral Resources as at 31 December 2023							Inferred Mineral Resources as at 31 December 2023						Rio Tinto Interest %	
		Tonnage	Grade (%)					Tonnage	Grade (%)					
Iron ore ³		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	
Simandou (Guinea) ⁴		264	66.5	1.8	1.4	0.05	1.6	340	65.8	1.4	1.4	0.07	2.8	45.05

(1) Mineral Resources are presented for the portion attributable to Rio Tinto's economic interest. All tonnes and quality information have been rounded, small differences may be present in totals.

(2) Likely mining method: O/P = open pit.

(3) Mineral Resources of iron ore are stated on a dry in situ weight basis and reported exclusive of Mineral Reserves.

(4) Mineral Resources valuations are based on specific product pricing determined from a 65% Fe Fines price of US c 136.10 / dmtu CFR (Iron ore pricing that includes cost of freight and insurance) China. This price is sourced from an average of forecasts from CRU (CRU group – commodity market analysts) and Wood Mackenzie.

The Mineral Resources presented are not Mineral Reserves. The Inferred Mineral Resources are considered too geologically uncertain to apply economic assumptions and subsequently convert these to Mineral Reserves. There is no certainty that all or any part of the Inferred Mineral Resources will be converted into Mineral Reserves (see Section 11.5). Mineral Resources that are not Mineral Reserves do not meet the threshold for reserve modifying factors such as estimated economic viability that would allow for conversion to Mineral Reserves. All figures are rounded to reflect the relative accuracy of the estimates and totals may not add correctly.



1.5 Mineral Reserves estimate

The Mineral Reserves estimates are based on a Life of Mine (LOM) plan that has been reported according to SK-1300 and has been developed using industry accepted strategic planning approaches which defined the life of the mines on the Property. Inferred Mineral Resources have been treated as waste. The final reserves plan is the outcome of the application of appropriate modifying factors in order to establish an economically viable and operational mine plan. The Mineral Reserves estimate relates only to the Ouéléba deposit.

The estimated Mineral Reserves for the Property total 675 million tonnes (Mt) of 65.3% iron (Fe) product on a Rio Tinto ownership basis, of which 18% have been classified as Proven Mineral Reserves and the remaining 82% classified as Probable Mineral Reserves. Table 1-2 shows the estimated Mineral Reserves for the Property.

Table 1-2: Simandou Mineral Reserves (Simfer Iron Ore Project) on a Rio Tinto ownership basis as at 31 December 2023¹

	Type of mine ²	Proven Mineral Reserves as at December 31 2023						Probable Mineral Reserves as at December 31 2023					
		Tonnage	Grade (%)					Tonnage	Grade (%)				
Iron ore ³⁴		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI
Simandou (Guinea) ⁵	O/P	123	66.4	1.0	1.2	0.07	2.5	552	65.0	0.9	1.8	0.10	3.9

Total Ore Reserves as at December 31 2023								Rio Tinto Share Marketable product
	Tonnage	Grade (%)					Rio Tinto Interest	
Iron ore ³⁴	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	%	Mt
Simandou (Guinea) ⁵	675	65.3	0.9	1.7	0.09	3.6	45.05	675

(1) Mineral Reserves are being reported for the first time in accordance with SK-1300 and are presented for the portion attributable to Rio Tinto's economic interest. All tonnes and quality information have been rounded, small differences may be present in totals.

(2) Type of mine: O/P = open pit.

(3) Mineral Reserves of iron ore are reported on a dry weight basis and shown as recoverable Mineral Reserves of marketable product after accounting for all mining and processing losses.

(4) Mineral Reserves are reported for the first time since 2016 relate to the Ouéléba portion only of the Simfer Iron Ore Project.

(5) Mineral Reserves valuations are based on specific product pricing determined from a 65% Fe Fines price of US c 136.10 / dmtu CFR China. This price is sourced from an average of forecasts from CRU and Wood Mackenzie.

(6) Cut-off Fe >=58%, SiO₂ + Al₂O₃ <= 8%, P <= 0.25%.

(7) Measured Mineral Resources classification within the final mine design has been converted to a Proven Mineral Reserves category, whilst the Indicated Mineral Resources material within the final mine design has been converted to a Probable Mineral Reserves.

1.6 Capital and operating costs

Capital and operating costs have been developed in accordance with a feasibility level of definition, the accuracy for both capital and operating costs are ± 15% with a contingency of around 10%.

The Simfer Mine capital cost has been estimated at \$4.6 billion (Bn) including an allowance of 11% contingency and some 3.7% escalation. Total direct costs for the project account for 49% of the total capital spend. The Co-Developed Infrastructure Project capital cost estimate is \$12.2 Bn (nominal terms), included is the cost for construction of the Simfer Spur Line, the Main Rail Line, and port infrastructure (WCS Barge Port and Simfer Port) for 120 Mtpa. Not included in the Co-Developed Infrastructure Project capital cost are the Simfer TSV vessels of \$0.6 Bn (nominal terms), making the total capital cost of the Simfer Jersey exposure to the Simandou Project \$17.3 Bn (Simfer Jersey share \$11.6 Bn). Other expenditure associated with the Property but to which Simfer Jersey is not exposed is the WCS Blocks 1 & 2 mine and the WCS transshipping barges.

The forecasted Simfer Mine operating cost is estimated at \$10.3/t of product over the life of mine. The Co-Developed Infrastructure operating cost is forecasted at \$14.2/t being a combination of port costs of \$6.7/t and rail costs of \$7.5/t.

The Simfer Mine sustaining capital cost is estimated at \$0.7/t. The rail sustaining capital is estimated at \$0.9/t with the port sustaining capital cost estimated at \$0.5/t. All operating costs are expressed in terms of product tonne.



Economic analysis confirms the economic viability of the Property's Mineral Reserves, which deliver a post-tax Net Present Value (NPV₈) of \$4.4 Bn based on a real discount rate of 8.0 percent. This valuation contemplated sensitivities to changes in major variables.

1.7 Environmental and social requirements

Putting aside the Concession itself, which is described in more detail in Section 3.2 below, the main permitting requirements relate to communities and social performance as well as social and environmental impact assessment.

The Communities and Social Performance (CSP) Management Plan is based on a thorough understanding of the communities in areas in which Simfer S.A. operates and the potential impacts of its activities, both direct and indirect, on these communities. This understanding has been enhanced through social baseline survey data gathered over several years, including recently as part of the Mine and Infrastructure bankable feasibility study (BFS) in-country works. This information has been used to accurately estimate the cost of land access through the provisions of the updated resettlement and compensation action plan (PARC) framework which forms part of the Convention de Base Amendée et Consolidée (Amended and Consolidated Basic Convention; CBAC) and BOT.

The proposed approach to CSP management focuses on the following three core areas:

- Regional and economic development.
- Community relations and community development.
- Resettlement and compensation (including livelihood restoration).

These core areas address the social risks of the Simfer Iron Ore Project, which also provides significant potential development opportunities both locally and regionally. Our regional development strategy seeks to generate broad economic growth and prosperity within the region of the Property. At a local level, community development programmes address the key opportunities identified in the Environmental and Social Impact Assessment (ESIA) and through community consultation.

The Pic de Fon Classified Forest (Classified Forest), an area of recognised high biodiversity value, hosts the Ouéléba and Pic de Fon Mineral Resources. The Classified Forest is at risk from a range of direct and indirect threats to flora and fauna. Managing these risks is complex and requires sustained long term effort to ensure harmful impacts are minimised, residual impacts are offset, and Simfer S.A. and its contractors comply with their legal obligations and maintain a licence to operate, locally, nationally and internationally.

A supplementary geochemical study has been completed together with an optimisation review to refine the mineral waste strategy and the site water balance modelling.

The ESIA and Environmental and Social Management Plan (ESMP) for the Simfer Iron Ore Project were approved in 2013 and Certificates of Environmental Conformity (Certificats de Conformité Environnementale (CCE)) issued. The approval is still current as the CCEs have subsequently been re-certified annually by the State. The scope and designs on which the ESIA were updated in 2023 reflect changes in the project plan (e.g., as refined in the BFS), changes in species conservation status, and updated environmental and social baselines. An ESIA update and a revised ESMP were submitted to the State and will form the basis of CCE approvals going forward. The ESIA update and revised ESMP are expected to be approved in 2024. A conformance assessment with the previous ESMP and commitments indicates that there are no material changes to the ESMP or project commitments.

Lastly, Simfer S.A., and Simfer Infraco Guinée S.A. (SIG), Simfer Infraco's Guinean subsidiary in charge of constructing the Simfer Spur Line and the Simfer Port, apply daily for technical permits and authorisations allowing for the carrying out of activities in various domains such as, without limitation, geological studies, bathymetric surveys, camp construction, site facilities construction (welding yards, material and equipment magazines, disposal sites, etc.), land clearing, borrow pits and quarries opening, use of water for construction, power generation, explosives, fuel supply and storage, waste management, flying drones and aircraft, import of materials, communication facilities, drinking water, rail construction specifics (including tunnels, bridges and culverts), port construction specifics (including dredging) and road construction and upgrade.



1.8 QP's conclusions and recommendations

Based on the information presented in this TRS, the QPs are of the opinion that the Mineral Resources estimate and Mineral Reserves estimate is supported by appropriate technical data and assumptions.

The QPs and their teams undertook multiple extended site visits to the Property from May to December 2023. During the visit both the Ouéléba and Pic de Fon deposits were visited as well as both existing and planned facility locations. The core shed, workshop facilities, camp accommodation, office accommodation and ongoing drill sites were visited. Matters pertinent to the application of the requisite modifying factors and conversion of Mineral Resources to Mineral Reserves were considered and assessed on site.

Mineral Resources and Mineral Reserves are supported by drilling programmes, all within the boundaries of the Concession. Mineral Resources confidence is reflected in the applied classifications in accordance with SK-1300, with factors influencing classification including but not limited to data density, data quality, geological continuity and/or complexity, estimation quality and weathering zones.

Based on the results presented in this TRS and consistent with Rio Tinto's operating practices, further work will be performed on the Property to improve confidence, decrease risk and enable further conversion of Mineral Resources to Mineral Reserves. Within the annual planning cycle, additional drilling is included to continue to acquire data to both improve the local estimate and extend this level of understanding to new volumes for the deposit as required.

These recommendations reflect Rio Tinto's ongoing operating practices and as such costs are incorporated into the Property's operating and capital costs; therefore, the costs of these recommendations have not been separately disclosed in this TRS.

Confidence in the Mineral Reserves is reflected in the applied Mineral Reserves classifications in accordance with SK-1300, with factors influencing classification including but not limited to mining methods, processing methods, economic assessment and other life of asset and closure assessments. Uncertainties that affect the reliability or confidence in the Mineral Reserves estimate include, but are not limited to, the following:

- Future macro-economic environment, including metal prices and foreign exchange rate.
- Changes to operating cost assumptions, including labour costs.
- Changes to mining, hydrological and geotechnical parameters and assumptions.
- Ability to maintain environmental and social licence to operate.
- Ore quality recovery assumptions.

Economic value is most sensitive to the commodity price, but it still remains positively economic for the life of Mineral Reserves under a variety of sensitivity scenarios. Based on the confidence in the modifying factors and the information presented in this TRS, the QP is of the opinion that the Mineral Reserves estimate is supported by adequate technical data and assumptions.



2 Introduction

2.1 Registrant information

This TRS is for Simfer S.A. in its capacity as holder of the Concession and owner of the Property and was prepared by the QPs for Rio Tinto. The Rio Tinto Group consists of Rio Tinto plc (registered in England and Wales as company number 719885 under the United Kingdom (UK) Companies Act 2006) and listed on the London Stock Exchange (LSE), and Rio Tinto Limited (registered in Australia as Australian Business Number (ABN) 96 004 458 404 under the Australian Corporations Act 2001) and listed on the Australian Securities Exchange (ASX). Rio Tinto plc and Rio Tinto Limited operate together and are referred to in this report as Rio Tinto, the Rio Tinto Group, or the Group.

As noted on the Date and Signature Page, several QPs were involved in the technical work summarised in this TRS.

The Property currently consists of the Ouéléba and Pic de Fon iron ore deposits and related mining infrastructure, which are located within the perimeter of the Concession (Section 3).

Simfer S.A. plans to exploit, transport, and export iron ore extracted from the Property.

WCS holds, through WCS MineCo, a mining concession over the neighbouring mining perimeter covering Blocks 1 & 2 of the Simandou Range (WCS Concession).

Rio Tinto tested each of its properties to determine which are material to the Rio Tinto Group. Rio Tinto considers the Property material based on qualitative measures given the strategic importance, media coverage and planned capital expenditure.

For SEC reporting purposes, the Property is considered a development stage property.

This TRS has been prepared in accordance with SK-1300 and Item 601(b)(96) of Regulation S-K to provide a record of scientific and technical information in respect of the Property due to being considered material to Rio Tinto.

2.2 Terms of reference and purpose

The purpose of this TRS is to report Mineral Resources, and Mineral Reserves for the Property effective as of 31 December 2023. The TRS utilises:

- Australian English spelling.
- Metric units of measure.
- Grades presented in weight percent (wt.%).
- Coordinate system presented in metric units using world geodetic system (WGS) 84 Zone 29N (Guinea).
- US Dollars.
- Summary Mineral Resources and Mineral Reserves in Table 1-1, Table 1-2, Table 11-2 and Table 12-1 are presented based on Rio Tinto equity ownership, all other information in the TRS is presented on a 100% basis for the Property.

Key acronyms and definitions used in this TRS include those items listed in Table 2-1 and Table 2-2.

Table 2-1: List of acronyms and abbreviations used in this TRS

Acronym/abbreviation	Definition
ABN	Australian Business Number
AC	Availability charge
ADCAP	Association for Community Development and Agro Pastoralism
AFD	French Development Agency
AGEE	l'Agence Guinéenne d'Evaluation Environnementale
AGS	Association of Geotechnical and Geoenvironmental Specialists
AI	Abrasion index
Al ₂ O ₃	Alumina
AMD	Acid and metalliferous drainage
AN	Ammonium nitrate
AR6	Sixth assessment report
As	Arsenic
ASX	Australian Securities Exchange
ATV	Acoustic televiewer
Ba	Barium
BAS	Undifferentiated basement
BF	Blast furnace
BFS	Bankable Feasibility Study – internal naming feasibility study level of confidence
BIFs	Banded iron formations
Bn	Billion (1,000 million)
Bt	Billion tonnes (1,000 million)
BV (labs)	Bureau Veritas laboratory group
°C	Degrees celsius
c/dmtu	US cents per dry metric tonne unit (e.g., cents per percentage Fe)
CADIC	Centre for Support and Development of Community Initiatives
CAGR	Compound annual growth rate
CAN	Canga
CaO	Calcium oxide
CAP	Carapace
CBR tests	California Bearing Ratio test to evaluate the strength of soil subgrades and base course materials.
CCE	Certificates of Environmental Conformity (Certificats de Conformité Environnementale)
CFR	Iron ore pricing that includes cost of freight and insurance
CHQ	Critical habitat qualifying
CIOH	Chalco Iron Ore Holdings
Cl	Chlorine
cm	Centimetre
Co	Cobalt
COF	Central operations facility
COTS	Coarse ore transfer
COV	Coefficient of variation
Cr	Chromium
CRU	CRU group – commodity market analysts
CSP	Communities and social performance
CTAE	Technical Committee on Environmental Analysis
Cu	Copper
DAC	Design acceptance criteria
DD	Diamond
DEM	Dust extinction moisture

Acronym/abbreviation	Definition
DGs	Dangerous goods
Dmt	Dry metric tonne
DR	Direct reduction
DSO	Direct shipping ore
DTM	Digital terrain model
E	Easting
EITI	Extractive Industries Transparency Initiative
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EVD	Ebola virus disease
Fe	Iron grade
FIFO	Fly-in-fly-out
FOB	Free on board – Iron ore pricing exclusive of shipping and insurance
FOS	Factor of safety
g	Gram
Ga	Billions of years (1,000 million)
GHG	Greenhouse gas
GIZ	German development agency
Golder	Golder Associates, now part of WSP
H ₂ O	Water
HEC	Compact hard hematite
HEF	Friable hematite mineralisation
HGF	Friable hematite goethite mineralisation
HQ	Drill core size 96 mm outside diameter
HSE	Health, Safety and Environment
HSEC	Health, Safety, Environment and Community
HSEC-MS	Health, Safety, Environment and Community Management Systems
IBA	Important bird area
ICMM	International Council on Mining and Metals
ICT	Information and communications technology
IDW	Inverse distance weighted
IFC	International finance corporation
IPC	Compact poor itabirite
IPF	Friable poor itabirite
IRF	Friable enriched itabirite
IRR	Internal rate of return
ITCZ	Intertropical convergence zone
IUCN	International Union for the Conservation of Nature
K ₂ O	Potassium oxide
KBA	Key biodiversity area
km	Kilometre
KNA	Kriging neighbourhood analysis
kWh/t	Kilowatt hour per tonne
LG	Lerchs-Grossmann
lidar	Light detection and ranging
LOI	Loss on ignition – mass loss during smelting process
LOM	Life of mine
LSE	London Stock Exchange
m	Metre
Ma	Millions of years
MEDD	Ministère de l'Environnement et du Développement Durable
MET	Mine end terminal

Acronym/abbreviation	Definition
MgO	Magnesium oxide
mm	Millimetre
µm	Micrometre (0.001 mm)
Mn	Manganese
MPa	Megapascal -unit of pressure (Million x Pascal)
Mt	Million tonnes (metric)
Mtpa	Million tonnes per annum
MW	Megawatts
MWMS	Mine water management system
N	Nothing
Na ₂ O	Sodium oxide
Ni	Nickel
NPI	Non-process infrastructure
NPV	Net present value
NPV ₈	Net present value at 8% discount
NQ	Drill core size 76mm Outside Diameter
OECD	Organisation for Economic Co-operation and Development
ORP	Operational readiness plan
P	Phosphorous content
PARC	Plan d'Action de Réinstallation et de Compensation (Resettlement and Compensation Action Plan)
Pb	Lead
PFS	Pre-feasibility study
PHC	Compact pyritic phyllite
PHS	Soil strength phyllite
PHV	Very weak phyllite
PHW	Weak phyllite
PIN	Project of National Interest
PMOF	Pioneering marine offload facility
PEP	Project execution plan
PQ	Drill core size 123 mm outside diameter
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance and Quality Control
QPs	Qualified persons
QTC	Compact quartzite
QTW	Weak quartzite
RC	Reverse circulation drilling
RC chip	Chip sampling from RC drilling
RL	Relative level
ROM	Run of mine
RTIO	Rio Tinto Iron Ore
RQD	Rock Quality Designation used for jointing assessments in rock
S	Sulphur content
SEA	State enabling activities
SEC	United States Securities and Exchange Commission
SEP	Stakeholder engagement plan
SK-1300	Subpart 229.1300 of Regulation S-K, Disclosure by Registrants Engaged in Mining Operations
SiO ₂	Silica
SMF	Social management framework
Sn	Tin
SOGUIPAMI	Société Guinéenne du Patrimoine Minier S.A.

Acronym/abbreviation	Definition
Sr	Strontium
SRK	Steffan, Robertson and Kirsten, consulting engineers
t/m ³	Tonnes per cubic metre
TiO ₂	Titanium dioxide
TIPA	Tropical important plan area
TLO	Train load out
TML	Transportable moisture limit
TRN	Transitional mineralisation
TRS	Technical Report Summary
TSV	Trans-shipment vessels
UBS	UBS investment bank
UCS	Uniaxial compressive strength
UK	United Kingdom
UKMO	United Kingdom meteorological office
UNFPA	UN population fund
USAID	American development agency
V	Vanadium
VWPs	Vibrating wire piezometers
WCS	Winning Consortium Simandou
WEA	Weathered hematite
WGS	World geodetic system – mapping standard
WHO	World health organisation
WRSF1	Waste rock storage facility #1
WSP	WSP Global Inc consulting firm
Wt. %	Weight percent
XRF	X-ray fluorescence
Z	Height denomination in vertical plane
Zn	Zinc
Zr	Zircon

Table 2-2: List of definitions used in this TRS

Defined terms	Definitions
BOT or BOT Convention	Rail and port infrastructure-related build-operate-transfer convention signed on 26 May 2014 between the State, Simfer S.A. and RTME in accordance with the BOT Law (Law L/97/012/AN dated 1 June 1998) and ratified by the Guinean Parliament on 14 June 2014.
CBAC (ACBC)	Convention de Base Amendée et Consolidée (Amended and Consolidated Basic Convention) signed on 26 May 2014 between the State, Simfer S.A. and RTME, and ratified by the Guinean Parliament on 14 June 2014.
CdB	Convention de Base (Basic Convention) refers to the mining convention and its appendices, signed on 26 November 2002 which was ratified by a Law L/2003/003/AN dated 3 February 2003.
Co-Developed Infrastructure	Includes, without limitation, the Main Rail Line, WCS Spur Line and WCS Barge Port to be built by WCS PortCo; and the Simfer Spur Line and Simfer Port to be built by Simfer Infracore Guinée S.A. (SIG).
Co-Development Agreement	Has the meaning given to it in Section 3.5.
Concession	Mining concession granted to Simfer S.A. by Presidential Decree No. D/2011/134/PRG/SGG of 22 April 2011 over mining blocks 3 and 4 of the Simandou Range.
CTG	Compagnie du TransGuinée S.A., a company incorporated in the Republic of Guinea with registered number RCCM/GN.TCC.2022.11117,

Defined terms	Definitions
	whose registered office is located at Apartment 5D Bloc A, Résidence Hamade, Cité Ministérielle Fondis, Commune de Dixinn, Conakry, Republic of Guinea.
Main Rail Line	536 km rail line to be constructed by WCS RailCo and subsequently owned and operated by CTG, connecting the Morebaya Port to the Simfer Spur Line and the WCS Spur Line, respectively.
Mine Bipartite Agreement	Has the meaning given to it in Section 3.5.
Property	Has the meaning given to it in Section 1.1 above.
RTME	Rio Tinto Mining and Exploration Limited, a limited company of the Rio Tinto Group incorporated under the laws of England and Wales, with registered number with Companies House 1305702. Its registered office is located at 6 St James's Square, London, SW1Y 4AD, United Kingdom.
Simfer Infraco Limited	A company whose registered office is at 6 St James's Square, London, SW1Y 4AD England, duly incorporated and operating under the laws of England and Wales under number 14121500.
Simfer Infraco Guinée S.A. (SIG)	A company whose registered office is located at Immeuble Camayenne, Corniche Nord, D.I. 536, Dixinn, BP 848, Conakry, Republic of Guinea, duly incorporated and registered with the RCCM of Conakry under number RCCM/GN.TCC.2023.B.03127 in accordance with Guinean law.
Simfer Iron Ore Project	The project relating to the exploration and exploitation of iron ore deposits located within the Property, and to be transported and exported using the Simfer Spur Line, the Main Rail Line, and the WCS Barge Port and the Simfer Port successively.
Simfer Jersey	A company incorporated under the laws of Jersey (registration number 105843) with its registered office at La Motte Chambers, St Helier, JE1 1PB, Jersey
Simfer Mine Area Line	Rail lines located within the perimeter of the Concession to be constructed and owned by Simfer S.A., and to be operated by CTG.
Simfer S.A.	Limited company with its registered office at Immeuble Bellevue, Boulevard Bellevue, D.I. 536 Commune de Dixinn, BP 848, Conakry, registered with the RCCM of Conakry under number RCCM/GCKRY/0867A/2003 in accordance with Guinean law.
Simfer Spur Line	The connecting line of approximately 70 km linking the Simfer Mine Area Lines to the Main Rail Line, to be constructed by Simfer InfraCo Guinée S.A. (SIG), and to be transferred to and operated by CTG.
Simfer Port	TSV port to be constructed by Simfer Infraco Guinée S.A. (SIG) and then transferred to and operated by CTG.
WCS MineCo	Winning Consortium Simandou SAU, a limited company under Guinean law registered with the <i>Registre du Commerce et du Crédit Mobilier</i> of Conakry under number RCCM/GN.TCC.2019.B.05570, whose registered office is located at Immeuble Wazni, Tombo I, Commune de Kaloum, Conakry, Republic of Guinea.
WCS Barge Port	Barges port to be constructed by WCS PortCo, and then transferred to and operated by CTG.
WCS Concession	Mining concession for iron ore held by WCS MineCo over blocks 1 and 2 of the Simandou Range.
WCS Infraco	Winning Consortium Simandou Infrastructure Pte. Ltd., a company existing under the law of Singapore under registration number 202217485D, whose registered office is located 5 Shenton Way #19-06, UIC Building, Singapore 068808.
WCS Mine Area Lines	Rail loading facilities and railway from the train loading facilities located within the WCS's mining concession perimeter (and which are owned by WCS MineCo) to the point of connection with WCS Spur Line outside such perimeter.

Defined terms	Definitions
WCS PortCo	Winning Consortium Simandou Ports S.A.U., a company incorporated in the Republic of Guinea with registered number RCCM/GN.TCC.2020.B.01656, whose registered office is located at Immeuble Wazni, Tombo I, Commune de Kaloum, Conakry, Republic of Guinea.
WCS RailCo	Winning Consortium Simandou Railway S.A.U., a company incorporated in the Republic of Guinea with registered number RCCM/GN.TCC.2020.B.01655, whose registered office is located at Immeuble Wazni, Tombo I, Commune de Kaloum, Conakry, Republic of Guinea.
WCS Spur Line	A connecting line of approximately sixteen kilometers (16 km) linking the WCS Mine Area Lines to the Main Rail Line, to be constructed by WCS RailCo and to be transferred to and operated by CTG.

2.3 Sources of information

Sources of exploration and geological data supporting the modelling and Mineral Resources estimates presented in this TRS include data and observations collected by Rio Tinto during the various exploration campaigns completed across the Property, and the various Mineral Resources estimate reports prepared by Rio Tinto and dated 31 December 2023.

General regional and local geological interpretation and information for the Property is sourced from various geological reports prepared by, or on behalf of Rio Tinto tenement holders as well as from publicly available peer-reviewed geological papers. This TRS also utilises relevant external technical reports and data available to Rio Tinto providing input to location, setting, geology, project history, exploration activities, methodology, quality assurance and interpretations.

Sources of data and information supporting the Mineral Reserves estimates presented in this TRS are the various Mineral Reserves estimate reports prepared by Rio Tinto and dated 31 December 2023.

Observations and interpretations of geostatistics, geology and mineralised trends, grade estimation, and Mineral Resources and Mineral Reserves estimates have been generated by or under the supervision of the QPs.

The following software was utilised:

- acQuire™ for the drill hole database.
- Leapfrog Geo™ for geological interpretation.
- Vulcan™ for block model development.
- Isatis™ for variography and statistical analysis.
- GEOVIA Whittle™ for definition of economic pit limits.
- Vulcan™ for pit design.
- Minemax Scheduler™ for mine scheduling.
- Alastri Tactical Scheduler™ for medium term mine scheduling.
- ArcGIS™ for multi-purpose 2D data visualisation, and map generation.

A detailed list of references is provided in Section 24 of this TRS.



2.4 QPs and site visits

Information in this TRS has been prepared under the supervision of the following QPs:

- Matthew Styles, Member of the Australasian Institute of Mining and Metallurgy (MAusIMM) (Member Number 107730), Geology Manager Resource Development. Matthew is responsible for Simandou Mineral Resources. The last site visit was in December 2023.
- Kaye Tindale, MAusIMM (Member Number 332641), Geology Consultant. Kaye is responsible for Simandou Mineral Resources. Multiple visits to site occur each year. The last site visit was in October 2023.
- Michael Apfel, MAusIMM (Member Number 110820), Manager Technical & Strategy. Michael is responsible for Simandou Mineral Reserves. Multiple visits to site occur each year. The last site visit was in December 2023.

Table 2-3 presents a tabulation of the QPs, their site visits, and their areas of responsibility.

Table 2-3: List of QPs

QP	Qualifications / affiliation	Date of last site visit	Area of responsibility ¹
Matthew Styles	Member AusIMM, BSc, MSc, MBA	December 2023	Sections 1, 2, 3, 4 (4.1-4.3), 5, 6, 7, 8, 9, 11 and 23.
Kaye Tindale	Member AusIMM, BSc	October 2023	Sections 1, 2, 3, 4 (4.1-4.3), 5, 6, 7, 8, 9 and 11.
Michael Apfel	Member AusIMM, BSc, MBA	December 2023	Sections 1, 2, 3, 4, 5, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 25.

(1) QPs have relied on information provided by Rio Tinto for preparing findings and conclusions relating to aspects of modifying factors. This information and the portions of this TRS relating to its use are detailed in Section 25 of this TRS.

2.5 Previously filed Technical Report Summaries

This is the first TRS filed for the Property and therefore does not update a previously filed TRS.

3 Property description

3.1 Property location

The Property is located approximately 550 km east-southeast of Guinea's capital Conakry, towards the southern end of the 110 km long Simandou Range, in Southeast Guinea. The location of the Property and its proximity to major infrastructure is illustrated in Figure 3-1.

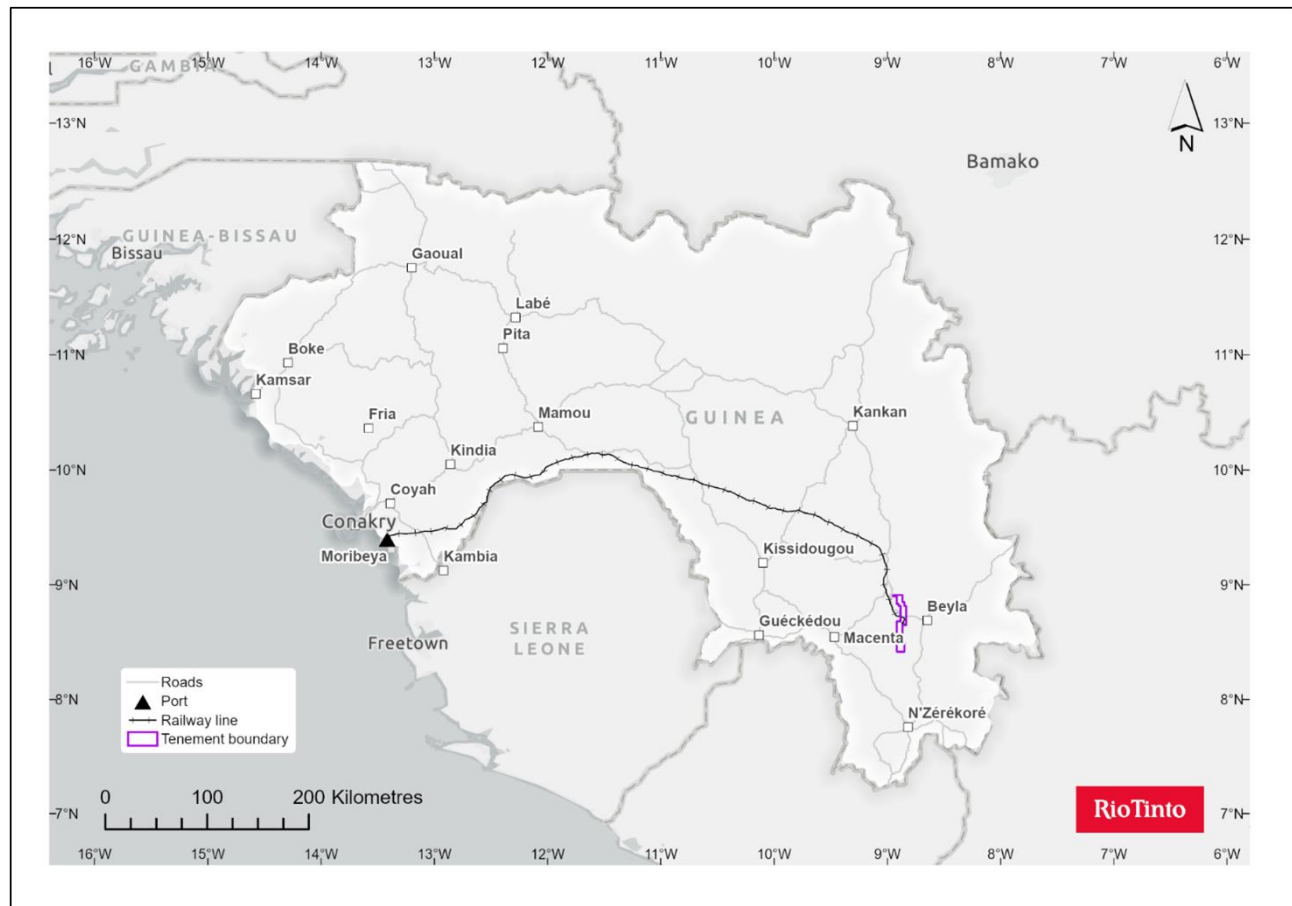


Figure 3-1: Property location map showing planned railway line to Simandou

The Ouéléba and Pic de Fon deposits lie along a north-south ridge line of the Simandou Range within the Concession, comprising blocks 3 and 4 of the Simandou Range and are separated by approximately 5 km. Ouéléba is approximately 8 km in length and Pic de Fon is approximately 7.5 km in length, both being up to 1 km wide and typically 300 m deep from surface but can be up to 500 m deep in places. The Concession covers an area of 369 km².

3.2 Title and mineral rights

Simfer S.A.'s rights over the Property derive from the Concession, which was granted on 22 April 2011 by Presidential Decree No. D/2011/134/PRG/SGG, and published in the April special issue of the Official Journal of the Republic of Guinea (the Concession Decree). In 2012, the ESIA was completed and the State declared Simandou a "Project of National Interest". The investment framework for the development of Simandou, including the CBAC and the BOT, was ratified by the State on 26 May 2014. The Concession duration is 25 years, renewed automatically for a further period of 25 years followed by further 10-year periods in accordance with the CBAC and the applicable Guinean mining legislation, provided Simfer S.A. has complied with its obligations under the CBAC. The Concession and CBAC are valid and provide surety of tenure. Adjustments to the CBAC have been agreed between, inter alia, Simfer S.A. and the State to take into account the possible consequences of the newly negotiated Co-Developed Infrastructure Project arrangements on the Simfer Iron Ore Project. These adjustments which are included in a mine bipartite agreement (Mine Bipartite Agreement) are yet to enter into force as of the date of this TRS.

The Co-Developed Infrastructure will include a purpose-built port facility to be constructed at Morebaya estuary (south of Conakry) which will facilitate the export of the iron ore from both the Property and WCS Concession. The port will be built in phases (Phase 1 WCS Barge Port to be constructed by WCS PortCo and Phase 2 Simfer Port to be constructed by Simfer Infracore Guinée S.A. (SIG)) to reach an overall capacity of 120 Mtpa, with the WCS Barge Port capacity being shared with Simfer S.A. pending completion of the Simfer Port. The port will be accessed by a purpose built 536 km main rail line (Main Rail Line, to be constructed by WCS RailCo) with rail spurs (namely the Simfer Spur Line regarding the Simfer Iron Ore Project, and the WCS Spur Line regarding WCS's mining project) connecting the Property (68 km) and WCS Concession (16 km) respectively to the Main Rail Line. The Main Rail Line is expected to have an initial capacity of up to 120 Mtpa.

The Co-Developed Infrastructure will also allow for passenger and general cargo transport services.

Figure 3-2 shows the Concession boundary deriving from the Concession Decree and the CBAC. No change to the Concession boundary has been made since 2011.

Rio Tinto

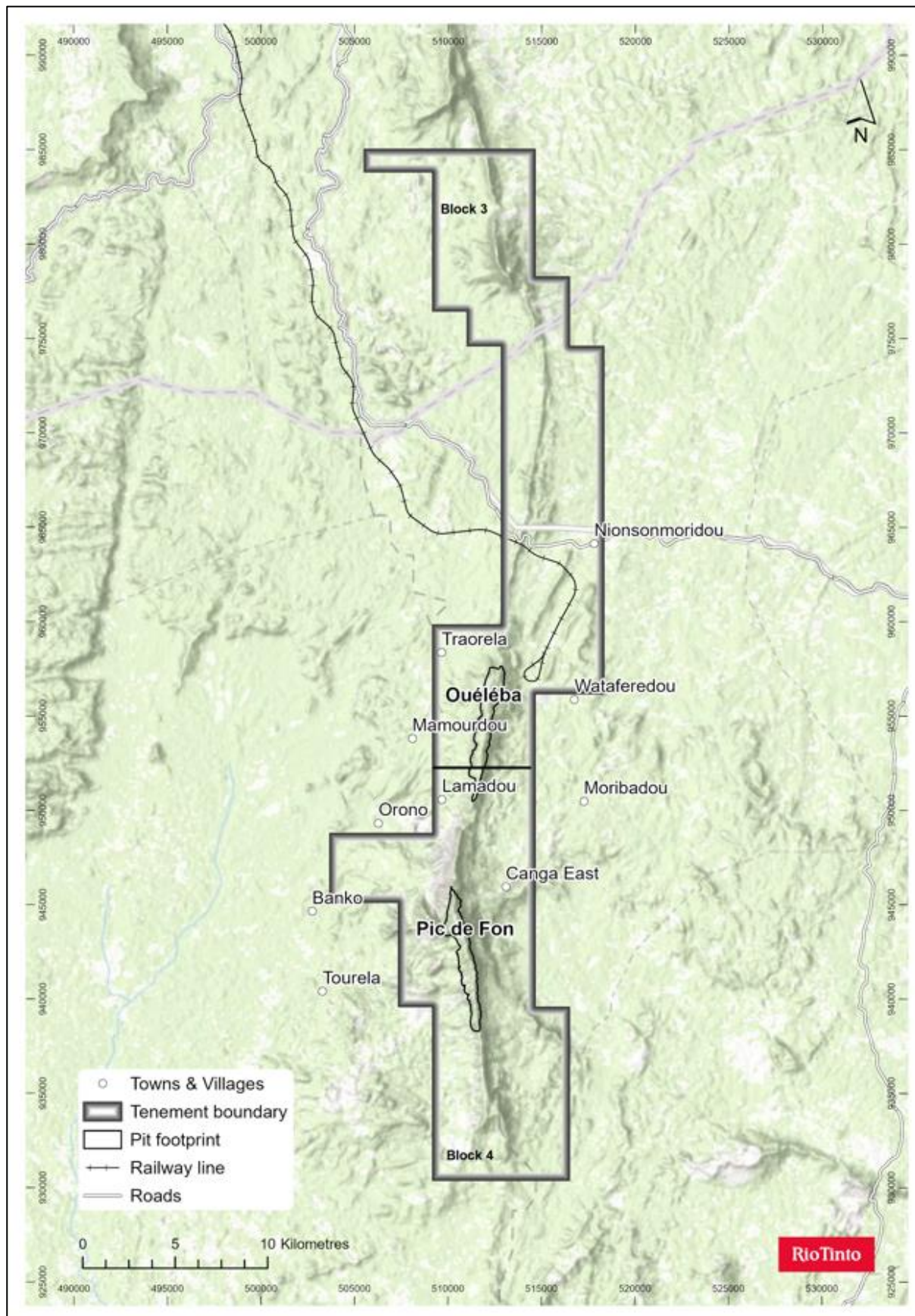


Figure 3-2: Concession boundary for the Property, Guinea



3.3 Encumbrances

There are no known significant encumbrances to the Property that would prevent the reporting of Mineral Resources or Mineral Reserves as of the date of this TRS. For a discussion of the risks to Rio Tinto's access, title or right to perform work on the Property or the permitting requirements of the Property, see Section 3.4 and Section 17.3, respectively.

3.4 Risks to access, title or right to perform work

Access to the Property and to the ore is authorised by the applicable mining legislation, the Concession and the CBAC (as adjusted by the Mine Bipartite Agreement). Mining exploration and exploitation works must be carried out within the Concession perimeter in accordance with the applicable legislation, the Concession and the CBAC. The permits and authorisations (other than mining titles) that are necessary for Simfer S.A. to perform its mining activities (e.g., construction permits, environmental and social authorisations) must be and are obtained by Simfer S.A. in accordance with the applicable legislation and the CBAC.

Access, title or the right to perform work at the Property could also be impacted by the events set out below.

State additional participation in Simfer S.A.'s share capital:

- In addition to its existing non-contributing 15% equity participation in the share capital of Simfer S.A., the State has been granted pursuant to the CBAC various options to purchase over time up to 20% (of which 10% is based on mining historical costs and 10% at market value) additional shares in the share capital of Simfer S.A..
- None of these options have been exercised by the State as of the date of this TRS.

CBAC /Concession termination by the State:

- The CBAC, as amended by the Mine Bipartite Agreement, provides for termination of the CBAC and/or withdrawal of the Concession by the State in case of a breach by Simfer S.A. of certain material obligations under the CBAC, including where:
 - the First Commercial Production Date of the Simfer Mine is not reached by the Tariff Commencement Date (as defined in the Co-Development Agreement); and
 - the physical completion of the Mining Infrastructure has not occurred by 31 December 2026, provided that these deadlines can be postponed based on legitimate grounds such as force majeure events or government adverse actions, in accordance with the CBAC and/or the Mine Bipartite Agreement.

Even though in principle a material breach by Simfer S.A. (or its affiliates) under the Co-Developed Infrastructure agreements does not entitle the State to terminate the CBAC and/or withdraw the Concession, such right is exceptionally granted to the State in case the mechanical completion of the Main Rail Line, Simfer Spur Line, WCS Spur Line and WCS Barge Port does not occur by 31 December 2026, and the State also withdraws the WCS Concession, provided that this deadline can be postponed based on legitimate grounds such as force majeure events or government adverse actions, in accordance with the Co-Development Agreement and/or the Mine Bipartite Agreement.

No such termination or withdrawal has been notified by the State to Simfer S.A. as of the date of this TRS.

3.5 Agreements and royalties

The State has agreed to assume an obligation to deliver a range of investment construction enabling activities under the CBAC and BOT, known as the SEAs (State Enabling Activities). This TRS report is written under the assumption that the SEAs provided for in the CBAC and, for the purpose of constructing the Simfer Spur Line and Simfer Port, the BOT, continue to hold.

The focus of the SEAs is the establishment of structures and processes which will expedite the practical implementation of provisions established in the CBAC and BOT relating to, inter alia:

- Tax and customs.
- Local content.
- Human resources and training.
- Project authorisations.
- Training, HSE and technical standards applicable to the Simandou Project's recruitment and training programmes.



- PARC.
- ESIA.
- Security and DGs management.

The local content provisions of the BOT have been amended by the Co-Development Agreement (as they relate to infrastructure activities) and the local content provisions of the CBAC have been amended by the Mine Bipartite Agreement (as they relate to mining activities).

Timely delivery of the SEAs is critical as part of providing a win-win outcome for the Project and the State. Whilst the Project will benefit from construction schedule adherence, lower capital costs and investment return requirements, the State will benefit from increased levels of economic activity, as well as through direct improvements in Guinea's country risk and rankings.

The entry into force of the Co-Development Agreement and the Mine Bipartite Agreement, which will result in amending the BOT and the CBAC, respectively, to take into account the new architecture for the Co-Developed Infrastructure Project, remains subject to the satisfaction of certain conditions precedent.

An overview of the agreements that are material to the development and operation of the Property can be found in Table 3-1 below.

Table 3-1: Material agreements

Agreement	Parties	Status	Description
Amended and Consolidated Basic Convention (CBAC/ACBC)	Republic of Guinea Simfer S.A. RTME	Executed on 26 May 2014	Sets out the conditions for the construction, development and operation by Simfer S.A. of the Property. The ACBC was entered into following the execution, on 22 April 2011 of a Settlement Agreement between the Republic of Guinea, Simfer S.A. and RTME whereby the parties thereto agreed, among other things, to amend certain terms of the Convention de Base.
BOT Convention or BOT	Republic of Guinea Simfer S.A. RTME Simfer Infraco Guinée S.A. (SIG)	Executed on 26 May 2014 Accession by Simfer Infraco Guinée S.A. (SIG) on 24 July 2023	Sets out the conditions for the design, financing, construction, operation, maintenance and extension by SIG of a multi-user rail and port infrastructure, intended primarily to the transport and exportation of the Property. The BOT provides for (i) the construction of a standard gauge heavy haul railway and a port infrastructure at the Morebaya river allowing the transportation of minerals at a rate of approx. 100 Mtpa; (ii) the provision by SIG of passenger services and cargo services using the infrastructure; (iii) third-party access to the infrastructure subject to Simfer S.A.'s priority access to the infrastructure; and (iv) the provision by SIG of haulage services to Simfer S.A. and, where relevant, third parties. As a result of the co-development and in particular the execution of the Co-Development Agreement (see below), the BOT has been adjusted so that (i) SIG's scope of works is limited to the construction of the Simfer Spur Line and the Simfer Port (the remainder of the scope being constructed by WCS under its respective conventions); and (ii) such infrastructure will be transferred, upon completion, to CTG, at which point the BOT Convention will be terminated.
Framework Agreement	Republic of Guinea Simfer S.A. WCS RailCo WCS PortCo	Executed on 25 March 2022	Sets out the main conditions for the co-development of the rail and port infrastructure for the Simandou Project (the Co-Developed Infrastructure Project), including the (i) undertaking to create a joint-venture company to operate the Co-Developed Infrastructure

Agreement	Parties	Status	Description
			once completed and (ii) undertaking to enter into the necessary arrangements (see below) setting out the relevant regime governing the construction and operation of the Co-Developed Infrastructure that will enable the export of iron ore from the Property and the WCS Concession.
Co-Development Agreement (CDA)	Republic of Guinea CTG Simfer S.A. WCS MineCo RTME Simfer InfraCo Guinée S.A. (SIG) WCS RailCo WCS PortCo	Executed on 10 August 2023 Approved for ratification by the National Council of the Transition	Sets out the main terms relating to the co-development of the Co-Developed Infrastructure, including (i) the construction by SIG, WCS RailCo and WCS PortCo (the Project Companies) under their respective infrastructure conventions of their respective scopes of the Co-Developed Infrastructure, (ii) the transfer to, and operation and maintenance by CTG of the Co-Developed Infrastructure once it is completed, (iii) the local content, environmental, HSSEC and tax regime applicable to CTG and the Project Companies during construction and operation of the Co-Developed Infrastructure.
Bipartite Adjustments to the CBAC (Mine Bipartite Agreement)	Republic of Guinea Simfer S.A. RTME	Executed on 10 August 2023 Approved for ratification by the National Council of the Transition	Provides for the relevant clarifications and adjustments to the CBAC taking into account the implications of co-development, and in particular the following adjustments: (i) mechanical adjustments to ensure that the CBAC can continue to work and be read in the context of the co-development and (ii) adjustments to certain terms of the CBAC, including in relation to the production capacity targets (updated and set at 60 Mtpa), the schedule for first commercial production in respect of the Property and progressive ramp-up of the mine production. Other terms of the CBAC not adjusted as per the Bipartite Agreement remain in full force and effect.
Multi-User Agreement	Republic of Guinea CTG Simfer S.A. WCS MineCo	Agreed form (appended to the CDA)	Sets out the conditions relating to (i) the transportation services will be provided by CTG to Simfer S.A. and WCS MineCo on the basis of their reserved allocation of capacity over the Co-Developed Infrastructure for the purposes of the transportation of iron ore from the Property and WCS Concession to the Morebaya Port (ii) third-party access (including third-party producers and non-producers of minerals) to the Co-Developed Infrastructure, (iii) the expansion of the Co-Developed Infrastructure by CTG and (iv) the provision of passenger services, freight services and cargo services by CTG to third-party individuals and companies using the Co-Developed Infrastructure.
Tariff Principles	Republic of Guinea CTG Simfer S.A. WCS MineCo	Agreed form (appended to the CDA)	Determines the tariffs payable by each of Simfer S.A. or WCS MineCo and each third-party to CTG in relation to the provision of haulage services by CTG (as per their respective Rail and Port Services Agreements) and the funding of expansions of the Co-Developed Infrastructure.
Simfer Rail and Port Services Agreement	Simfer S.A. CTG	Executed on 22 December 2023	Sets out the conditions under which CTG will provide haulage services to the Property using the Co-Developed Infrastructure based on Simfer S.A.'s capacity allocation over the Co-Developed Infrastructure as determined in accordance with the Multi-User Agreement, subject to the payment by Simfer S.A. of tariffs calculated in accordance with the Tariff Principles.

Agreement	Parties	Status	Description
Implementation and Cooperation Agreement	Simfer S.A. Simfer Infraco Guinée S.A. (SIG) WCS MineCo WCS RailCo WCS PortCo CTG	Executed on 29 September 2023	Sets out the conditions for the management of interfaces in the context of the co-development of the Co-Developed Infrastructure including (i) the basis on which the Project Companies are to work together to carry out works that have a common interface, (ii) the regime for cooperation during the construction and commissioning phases (including regular meetings), and (iii) the rules for access to the various project sites during the performance of construction works. Pending the entry into force of the Implementation and Cooperation Agreement, similar principles of interfacing and access are set out in an Interim Access Agreement (see below).
Interim Access Agreement	Simfer S.A. Simfer Infraco Guinée S.A. (SIG) WCS MineCo WCS RailCo WCS PortCo CTG	Executed on 29 September 2023	Sets out the basis on which the Project Companies must work together to implement works which have a common interface, rights of access for the Project Companies, and a regime for cooperation during construction, in the period between the execution of the Implementation and Cooperation Agreement and the effective date of the Implementation and Cooperation Agreement. The terms and conditions of the Interim Access Agreement are therefore materially similar in substance to those contained in the Implementation and Cooperation Agreement (see above) and/or are customary.
CTG Shareholders' Agreement	Republic of Guinea Simfer InfraCo WCS Infraco CTG	Executed on 26 July 2023	Sets out the terms and conditions relating to the operation and management of the CTG joint venture between Simfer InfraCo (42.5 per cent.), WCS InfraCo (42.5 per cent.) and the Republic of Guinea (15 per cent.). CTG will be the ultimate owner (subject to transfer of the Project Companies pursuant to the Project Companies Transfer Agreement (PCTA)) and operator of the Co-Developed Infrastructure. The CTG Shareholders' Agreement contains customary terms and conditions, including with respect to governance, funding and default, and also addresses certain operational matters of CTG.
SIG Shareholders' Agreement	Republic of Guinea Simfer InfraCo Simfer Infraco Guinée S.A. (SIG) WCS Infraco	Executed on 22 December 2023	Sets out the terms and conditions relating to the operation and management of SIG, which will be responsible for the development, design, construction and commissioning of the Simfer Spur Line and Simfer Port. Subject to closing of the WCS-Simfer Investment Agreement, SIG will be owned by Simfer InfraCo (85 per cent.) and the Republic of Guinea (15 per cent.). The shareholders' agreement contains customary terms and conditions, including with respect to governance, funding and default, and addresses certain operational matters of SIG for the construction period. Under the agreement, WCS InfraCo has consent rights over certain key matters.
WCS RailCo and WCS PortCo Shareholders' Agreements	Republic of Guinea Simfer InfraCo WCS Infraco WSC Railway Pte. Ltd. (WCS Rail HoldCo; in relation to WCS Rail	Executed on 22 December 2023	Sets out the terms and conditions relating to the operation and management of WCS RailCo and WCS PortCo, which will be responsible for the development, design, construction and commissioning of the Main Rail Line, WCS Spur Line and WCS Barge Port. Subject to closing of the WCS-Simfer Investment Agreement, WCS RailCo will be owned by WCS Rail HoldCo (85 per cent.) and the Republic of Guinea (15 per cent.) and WCS PortCo

Agreement	Parties	Status	Description
	Shareholders' Agreement only) WCS RailCo (in relation to WCS Rail Shareholders' Agreement only) WSC Ports Pte. Ltd. (WCS Port HoldCo in relation to WCS PortCo Shareholders Agreement only) WCS PortCo in relation to WCS PortCo Shareholders Agreement only)		will be owned by WCS Port HoldCo (85 per cent.) and the Republic of Guinea (15 per cent.). The shareholders' agreements for WCS RailCo and WCS PortCo are materially similar in substance. They contain customary terms and conditions, including with respect to governance and funding, and address certain operational matters of WCS RailCo and WCS PortCo, respectively, for the construction period.
WCS Rail HoldCo and WCS Port HoldCo Shareholders' Agreements	Republic of Guinea Simfer InfraCo WCS Infraco WCS Rail HoldCo (in relation to WCS RailCo) WCS Port HoldCo (in relation to WCS RailCo)	Executed on 22 December 2023	Sets out the terms and conditions relating to WCS Rail HoldCo and WCS Rail Port HoldCo, the holding companies of WCS RailCo and WCS PortCo respectively. Subject to closing of the WCS-Simfer Investment Agreement, WCS Rail HoldCo and WCS Port HoldCo will each be owned by WCS Infraco (66 per cent) and Simfer InfraCo (34 per cent). The shareholders' agreements for WCS Rail HoldCo and WCS Port HoldCo are materially similar in substance. They contain customary terms and conditions, including with respect to governance, funding and default.
Project Company Transfer Agreement	Republic of Guinea Simfer InfraCo WCS Infraco WCS Port HoldCo WCS Rail HoldCo CTG	Executed on 22 December 2023	Sets out the terms on which: (i) the shares in the Project Companies are transferred to CTG on 31 January 2026; (ii) the shares issued in each Project Company pursuant to the relevant shareholders' agreement after 31 January 2026 are transferred to CTG; and (iii) the costs of the Co-Developed Infrastructure, and the associated shareholdings in CTG, are equalised between WCS Infraco and Simfer InfraCo.
WCS-Simfer Investment Agreement	Simfer InfraCo WCS Infraco WCS Rail HoldCo WCS Port HoldCo WCS RailCo WCS PortCo WCS Holdings	Executed on 29 September 2023	Sets out the terms on which Simfer InfraCo will invest into, and acquire a 34% shareholding in, WCS Rail HoldCo and WCS Port HoldCo, in order for Simfer InfraCo to share in the funding of the construction work carried out by WCS RailCo and WCS PortCo. Per the WCS-Simfer Investment Agreement, closing of Simfer InfraCo's investment is subject to the satisfaction (or, where applicable, waiver) of certain conditions, including but not limited to the ratification of the Co-Development Agreement and Mine Bipartite Agreement by the National Council of the Transition in the Republic of Guinea, Chinese State regulatory approvals, antitrust approvals, agreement between Simfer Infraco, WCS Infraco and the Republic of Guinea on the Project Company budgets and programmes, and finalisation of several other transaction documents. The WCS-Simfer Investment Agreement also contains customary warranties.

4 Accessibility, climate, local resources, infrastructure, and physiography

4.1 Topography, elevation, and vegetation

The geographical regions of Guinea are established according to physical characteristics of the environment, including climate, topography, landform, and geology. Guinea is divided into four large physiographical regions with distinct physical characteristics:

- Upper Guinea.
- Central Guinea.
- Lower Guinea (also referred to as Maritime Guinea).
- Forest Guinea.

The Project is situated in the Forest Guinea region, located in the southeastern part of the country. This region is bordered by Sierra Leone, Liberia, and Côte d'Ivoire, and is located between north latitudes 7°30' and 9°30', and west longitude 8° and 10°30'. The Forest Guinea region covers an area of approximately 49,500 km², representing about 20% of the total land area of Guinea.

The general topography is mountainous along the Simandou Range and undulating in surrounding areas. The topography of the Simandou Range consists of steeply sloped hills, separated by deep depressions (ravines), gradually changing into foothills in the piedmont area, and then into low-elevation plateaus. The ravines, of varying size, often contain small streams in dry inland valleys, known as bas-fonds; and alluvial plains along rivers and creeks.

The Simandou Range presents a north-south axis, with an altitude exceeding 1,000 m over a distance of 25 km. It has an average ridge width varying between 1 km and 2 km. The ridge is at its largest in the Pic de Fon Classified Forest, where the altitude is higher than 1,000 m and the width approximately 4 km. The average altitudes in Pic de Fon and Ouéléba areas are in the order of 1,500 m and 1,200 m respectively.

Typically, the study area rises as a prominent ridgeline of approximately 600 m to 700 m above the plateaus, reaching a maximum altitude of 1,656 m at Pic de Fon, 1,650 m at Pic Dabatini, 1,132 m at Ouéléba, and 1,165 m at Signal de Foko located in the southern part of the Pic de Fon Classified Forest. The plateau located on the western side of the Simandou Range has a width of approximately 20 km and an altitude ranging from 550 m to 650 m. The altitude of the plateau located on the eastern side of the ridge is higher, and exceeds 650 m, with some plateaus reaching altitudes in the order of 800 m. The main typical morphological features are the following:

- Natural slopes varying from 25° to more than 40° on the flanks of the ridge. In Ouéléba, the slope angles are shallower than at Pic de Fon, although the western flank of Ouéléba is delineated by a prominent escarpment.
- The very steep slopes are generally encountered in the harder series of itabirite rocks, which are part of the mountain core, and are often found at mid-hillslope elevations.
- In Ouéléba, the phyllites series of rocks, typically encountered at the basis of the range, are deeply weathered and notched.

The Property is located within the Pic de Fon Classified Forest, comprising three major habitats, as follows (in descending order of total surface area):

- Lowland humid forest.
- Submontane forest.
- Submontane grassland.

These forests demonstrate the significant influence of the rainy conditions typical of southeastern Guinea, which influences soils, surface and groundwater flow, and ecosystems.

4.2 Access

Pending completion of the Co-Developed Infrastructure, the Property is accessible by road and air with an airport located at Beyla, approximately 35 km from the camp.

The Co-Developed Infrastructure to enable export of iron ore from the Property and WCS Concession will be co-developed as described in Section 3.5 above.

4.3 Climate

The Simfer Mine will operate continuously throughout the year, with no planned interruptions due to seasonal changes.

The Guinean climate reflects its geographical position at latitude 10°N, where the annual rainfall pattern is conventionally described in terms of the Intertropical Convergence Zone (ITCZ). The ITCZ circles the Earth near the equator, where the trade winds of the northern and southern hemispheres come together. The climate of the project area is governed by the annual migration northwards and southwards of the ITCZ.

The average temperature throughout the year remains relatively constant at around 24 °C. With high temperatures of 33°C in February and low temperatures of 20°C throughout the year. Mean, maximum, and low temperatures for the Project are shown in Table 4-1.

Table 4-1: Average high and low temperature in Nzérékoré

Average	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
High	31°C	33°C	32°C	31°C	29°C	28°C	27°C	26°C	27°C	28°C	29°C	29°C
Temp.	24°C	26°C	26°C	26°C	25°C	24°C	23°C	23°C	23°C	24°C	24°C	23°C
Low	17°C	20°C	21°C	22°C	22°C	21°C	20°C	20°C	20°C	20°C	20°C	18°C

At the Project, the ITCZ is sufficiently far to the south from mid-November to mid-March for its effect to diminish enough to create a 'dry' season. For the remainder of the year (April to October) cloud and rain are present on a frequent basis.

During the wet season, monsoonal storms generate heavy rainfall throughout southeastern Guinea, irrespective of topography. An average of 1900 milometers (mm) of rain falls annually in the Property, with August and September typically being the wettest months with an average precipitation of 400 mm per month. December and January are typically the driest months with typically recording only 1 mm of rain in each of those two periods.

4.4 Local resources and existing infrastructure

The Property is sparsely populated with Beyla (35 km from the Property) being the most populous town in the region with an estimated population of some 13,000. The region is predominantly agricultural with production of mainly rice, maize, cassava, and groundnuts.

4.4.1 Power supply

Power supply to the Property is currently limited with the Project undertaking to provide local power generation as part of the project implementation. The power plant will be a hybrid renewable plant that will supply a maximum demand of approximately 18.5 megawatts (MW) using diesel fired generators initially plus capacity for future expansion using a combination of diesel fired generators and future renewable generation sources.

4.4.2 Water supply

The Property area has sufficient rain and groundwater to meet the needs of the project. During the wet season the area has frequent rain events that feed the rivers and streams along the Simandou Range and recharge the local aquifers. During operations, water will be supplied via a pit dewatering system and additional surface withdrawals are not necessary. Where feasible in-pit water will be recycled for use in dust suppression during the dry season. The Project will export direct shipping ore (DSO), with the only



processing requirements to the ore being crushing; therefore, water usage on the project will be predominantly for dust allaying purposes related to the mining operation.

4.4.3 Personnel

Personnel are engaged on either a residential or fly-in-fly-out (FIFO) basis, sourced from capital and regional centres in Guinea or internationally for expatriates. During operation, the Simfer Mine and load out facilities are expected to peak at around 2,050 Rio Tinto employees and another 1,400 contractors.

4.4.4 Suppliers

The Simfer Iron Ore Project will rely on a variety of imported parts for mining equipment and the stacker reclaimer consumables. Supplies will be transported to site by rail, road or air, utilising highways and rail access roads, public and Simfer S.A.'s owned airports and railway. Guinean suppliers will be selected to work on the Simfer Iron Ore Project in accordance with and under the conditions provided for in the 2022 Guinean Law on Local Content and the Mine Bipartite Agreement.

5 History

5.1 Exploration and ownership history

The Property draws on over 20 years of exploration field activities and previous studies. An overview of the key Property milestones can be found in Table 5-1.

Table 5-1: Key milestones for the Property

Date	Key milestones
1950's to 1996	Regional mapping by French (1950s), and Chinese (1970s) technical teams identified the potential of the Simandou deposits.
1996	Exploration work commences after the State invites RTME to explore a 1,500 km ² area of the Simandou Range, which was the object of historical iron ore exploration activities.
1997	The existence of high grade iron ore mineralisation at the Property is confirmed. RTME is granted four exploration licences, and geological work commences.
2002	The State, RTME, and Simfer S.A. sign the CdB. The CdB sets out all the terms and conditions applicable to the Property.
2003	The Guinean National Assembly ratifies the CdB following State approval.
2006	The original concession is granted to Simfer S.A. The World Bank's IFC becomes a 5% shareholder in Simfer S.A.
2007	Formal commencement of the mine environmental, and social baseline studies.
2008	Simfer S.A. was required to relinquish Blocks 1 and 2 by the incumbent government. Interim pre-feasibility study is completed (based on 75 Mtpa).
2010	Engineering study begins. Rio Tinto and CIOH enter into a joint venture arrangement in relation to Rio Tinto's interest in the Property.
2011	Settlement Agreement is signed between the State, Simfer S.A., and RTME outlining principles of development of the Simandou Project including: - The separation of the Simandou Project into the mining project to be owned by Simfer S.A. and a Trans-Guinean multi-use/user infrastructure project (to be owned by other investors and the State). - State equity participation in Simfer S.A. - Confirmation of the fiscal regime for the Property. The Concession, covering the 369 km ² area of the southern half of the Simandou Range, is awarded to Simfer.
2012-2013	ESIA approved.
2012	Rio Tinto and CIOH joint venture in respect of the Property commences. Preliminary Engineering Assessment Study is completed (based on 95 Mtpa). PIN Decree' is promulgated by the State, granting the Property priority land access rights. 2012 Draft Definitive Engineering Study is completed by Simfer S.A. (based on 100 Mtpa).
2013	Letter of Mutual Intent is signed, which revises key principles of the Settlement Agreement, primarily the outsourcing of the project infrastructure to an infrastructure consortium.
2014	The CBAC and BOT take legal effect, setting out the rights and obligations of the State, Simfer S.A., and other project entities for the construction and development of the Property; submitted to Guinea's National Assembly for ratification. The CBAC and BOT are ratified and take legislative effect. Work commences on the Mine BFS and Infrastructure BFS. The State, through its sovereign investment vehicle, SOGUIPAMI, exercises its first option to take up a 7.5% free carried interest in the share capital of Simfer S.A..
2015	BFS activities continue despite the EVD epidemic in Guinea. Property development timetable target dates are revised to take into account impact of EVD, and other issues. Version 1 of the Mine, Port and Rail BFS is submitted to the State, IFC and Chinalco.
2016	Mine BFS and Infrastructure BFS are submitted to the State, IFC and CIOH on 16 May 2016.
2016 to 2022	Project on care and maintenance following fall in iron ore price and ongoing discussions with the State.



Date	Key milestones
2022	The State, Simfer S.A., WCS RailCo, WCS PortCo and WCS MineCo enter into the Framework Agreement in March 2022.
2022	In July, Simfer Infraco, WCS Infraco, and the State incorporate La Compagnie du TransGuinée (CTG) to ultimately own and operate the Co-Developed Infrastructure.
2022	The State, Simfer S.A., WCS RailCo, WCS PortCo, WCS MineCo, and Baowu Resources sign a non-binding term sheet setting out the structure and key principles for the Co-Developed Infrastructure agreements.
2023	Incorporation of Simfer Infraco Guinée S.A., Simfer Infraco's dedicated infrastructure company, the purpose of which will be to construct and commission the Simfer Spur Line and the Simfer TSV Port.
2023	Simfer Infraco, WCS Infraco, and the State sign the CTG Shareholders' Agreement.
2023	Simfer S.A., Simfer Infraco Guinée S.A., RTME, CTG, the State, WCS RailCo, WCS PortCo and WCS MineCo enter into the Co-Development Agreement.
2023	Simfer S.A., RTME, and the State enter into the Mine Bipartite Agreement.

5.2 Exploration and development by previous owners or operators

The Simfer Iron Ore Project represents a greenfield project with no prior operators and no prior bulk mining operations having been undertaken. No previous production has been undertaken from the Property.

Previous exploration work is summarised in the table above.

6 Geological setting, mineralisation, and deposit

6.1 Regional geology

The Simandou Range iron occurrences are located within the Kénéma-Man Domain, in the southern part of the West African Craton (Figure 6-1). This domain is comprised of Archaean basement, comprised predominantly of granitic gneiss, and amphibolitic gneiss (locally migmatitic). The oldest dated basement group in the domain is the ~3.5 Ga Guélémeta Gneiss.

The general regional structural trend is north-south to northeast-southwest, but swings to northwest-southeast in the north of the Property. Within this basement complex there have been three main tectonic events: (1) the Leolian Cycle (3.2 to 3.1 Ga) producing the general north-south trending structures; (2) the Liberian Cycle (2.9 to 2.8 Ga), responsible for north-northeast to south-southwest trending structures, and (3) the Eburnian Cycle (2.2 to 2.0 Ga), contributing further to the north-northeast to south-southwest regional fabric.

The northern margin of the Eburnian Orogeny is bounded by the Sassandra/Bale Mylonite zone, and is characterised by tectonised basement, with Eburnian granite/granodiorite intrusives northwest of the Property. The southern margin is bounded by the Mount Trou Fault in Liberia, which is characterised by mafic rich biotite and hornblende gneisses, with intercalated amphibolites and BIFs sub-parallel to the tectonic fabric.

There are numerous greenstone-metasedimentary sequences that occur as linear belts, and small relics throughout the Kénéma-Man Domain. The Simandou Range is one of these, and has a north-south sinusoidal strike of approximately 110 km. The stratigraphy within the Simandou Range consists of itabirite units conformably overlying basal phyllites, with minor interbedded quartzites/sandstones, and cherty iron oxides. This supracrustal belt, including the BIF proto-ore, was likely deposited in a shallow marine setting within a forearc basin extending from southern Guinea, into northeastern Liberia. Detrital zircons from within a quartzite of the Simandou Range yielded ages from between 2.7 and 2.9 Ga, indicating that the Liberian deformed basement was acting as a hinterland, supplying the Simandou succession. Therefore, the age of deposition must have been between ~2.6 to 2.7 Ga and ~2.2 to 2.0 Ga, as the Eburnian event infolded the Simandou sequence into the Liberian basement.



6.2 Structural setting

Multi-phase ductile deformation during the Eburnian created the north-south Simandou Range. This created elongated tight boudinaged synformal fold keels and sheared antiformal structures.

The structural understanding of the Simandou Range is complicated due to a number of factors:

- Limited outcrops (although road cuttings, and drill pads have helped in this regard).
- The mineralisation process has obscured internal structures.
- Hydration and weathering processes act to mask the internal structure of the mineralised body, and surrounding phyllites and basement at the surface.

Where good outcrop exists, it is evident that the area has undergone intense multi-phase tectonic events, which further complicates outcrop patterns and internal geometries. Three main phases of deformation are commonly recognised to have occurred at the Property. The phases of deformation are described below, and visually presented in Figure 6-2.

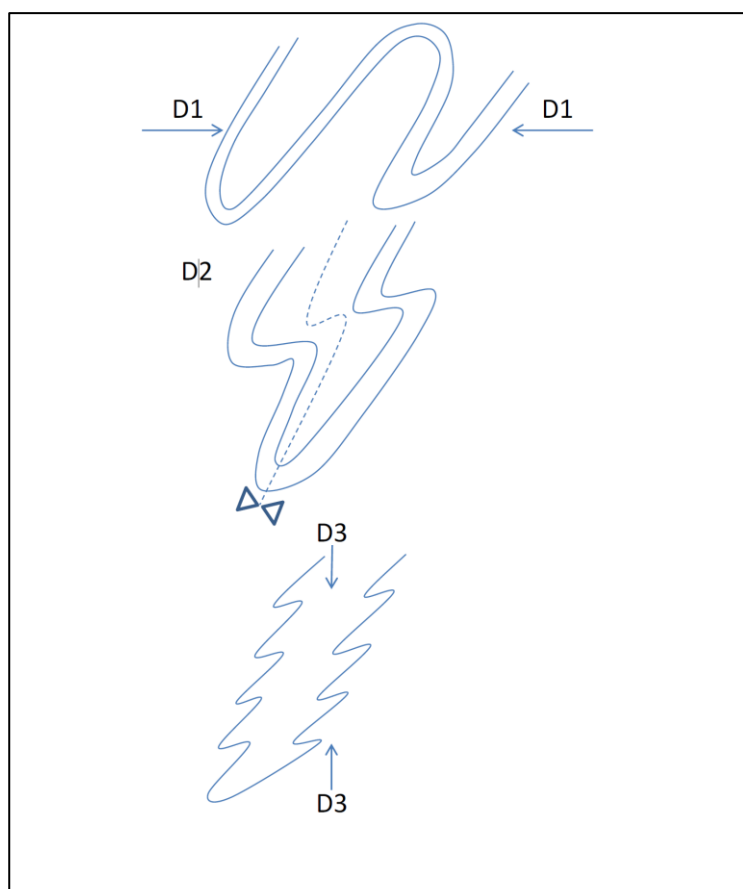


Figure 6-2: Simplified diagram of the three phases of deformation that occurred at the Property

6.2.1 D1 deformation

D1 deformation is characterised by intense north-south recumbent isoclinal type folding causing infolding of the Simandou Group into the basement. D1 deformation was likely due to the initial east-west/northeast collision between the western Kénéma-Man, and the Baoule-Mossi Domain. The Sassandra mylonite zone/shear belt, located to the east of the Simandou Range, may represent the suture zone between these two cratons. The deformation is likely to be early Eburnian, 2.2 to 2.0 Ga in age.

6.2.2 D2 deformation

D2 deformation is characterised by north-south shear zones and north-northeast to south-southwest to northeast-southwest transfer faults. This deformation is related to ductile sinistral shearing, within a transpressional shear zone environment towards the end of the Eburnian orogeny. This stage of tectonism re-folded and modified the earlier D1 folds, creating upright folds and consequently, caused enechelon dome

and basin structures (north-south plunge variation). Shearing was likely focused along lithological contacts with geophysical contrasts such as those of the itabirite, phyllite, and basement. An example of this is seen on the western side of the Ouéléba deposit, where the phyllite has been interpreted to have been thinned and sheared away, leaving itabirite in direct contact with basement. It is also possible that these D2 transfer shear zones were re-activated during the later stage Pan African (500 million years (Ma)), and/or Variscan (390 to 290 Ma) orogenic events. This may have taken the form of ductile to brittle shearing/faulting.

6.2.3 D3 deformation

D3 deformation is characterised by roughly east-west striking, late stage brittle faults/fractures with minor to no displacement, and late stage brittle reactivation of north-south, north-northeast to south-southwest ductile D2 shear zones. Microfaults seen in core, and hand specimen are associated with this stage. It is possible this is related to Tertiary age tectonism, and relaxation due to exposure of the ridge by erosion. Late stage kink folding is also considered to be a D3 stage phenomenon that is limited to the mineralised package, and is believed to be related to collapse after silica removal.

Evidence from both mapping, and drilling indicates that the first order (D1) structure of the Ouéléba and Pic de Fon deposits corresponds predominantly to westerly dipping (but locally easterly dipping at Ouéléba) large scale synformal structures characterised by a north-northeast to south-southwest striking fold axes. Associated sheared antiformal basal phyllites occur as internal waste features within the mineralised package. The itabirite bodies can be visualised as boudinaged, competent bodies surrounded by ductile phyllite that pinches and swells between the itabirite bodies, creating complex geometries.

6.2.4 Faulting

Late stage east-west D3 faults/fractures are interpreted to cross-cut both the Ouéléba and Pic de Fon deposits, and have been interpreted from magnetic, and topographic data (representing incised valleys). However, these faults have proven hard to define on the ground due to the friable nature of the ore, and the lack of visible stratigraphic markers to define any offset.

Evidence for recognisable displacement has only been identified in one locality at Ouéléba (956,000 mN), however the extent of this displacement, particularly in the mineralisation, is yet to be determined. It is, however, still difficult to quantify the offset of this fault through the mineralised portion of the deposit, due to the degraded nature (D3 deformation) of this material.

6.3 Local geology

The Ouéléba and Pic de Fon deposits are located in the Simandou Range, on a prominent ridge. The Simandou Range is the result of multi-phase ductile deformation represented by tight synformal fold keels and sheared antiformal structures. The ridge consists of a formation of itabirites (metamorphosed BIF) and phyllites overlying basement gneiss and amphibolite. The itabirites and phyllites have been deeply weathered and identifying stratigraphy is difficult, with the only discernible contact being that between the itabirites, and phyllites.

Laterite and carapace domains are sub-horizontal, with the laterite overlying all other lithologies, in local areas, and the carapace overlying the mineralisation, and enriched itabirite lithologies. The itabirites, and phyllites are interpreted to be folded, with the axial planes of the fold hinges dipping moderately to steeply towards the west.

6.4 Property geology

The Ouéléba deposit is located towards the southern end of the Simandou Range, approximately 5 km north of the Pic de Fon deposit. It is an approximately 8 km long, and 700 m wide zone of mineralisation (Figure 6-3). The deposit forms part of a north-south trending ridge.

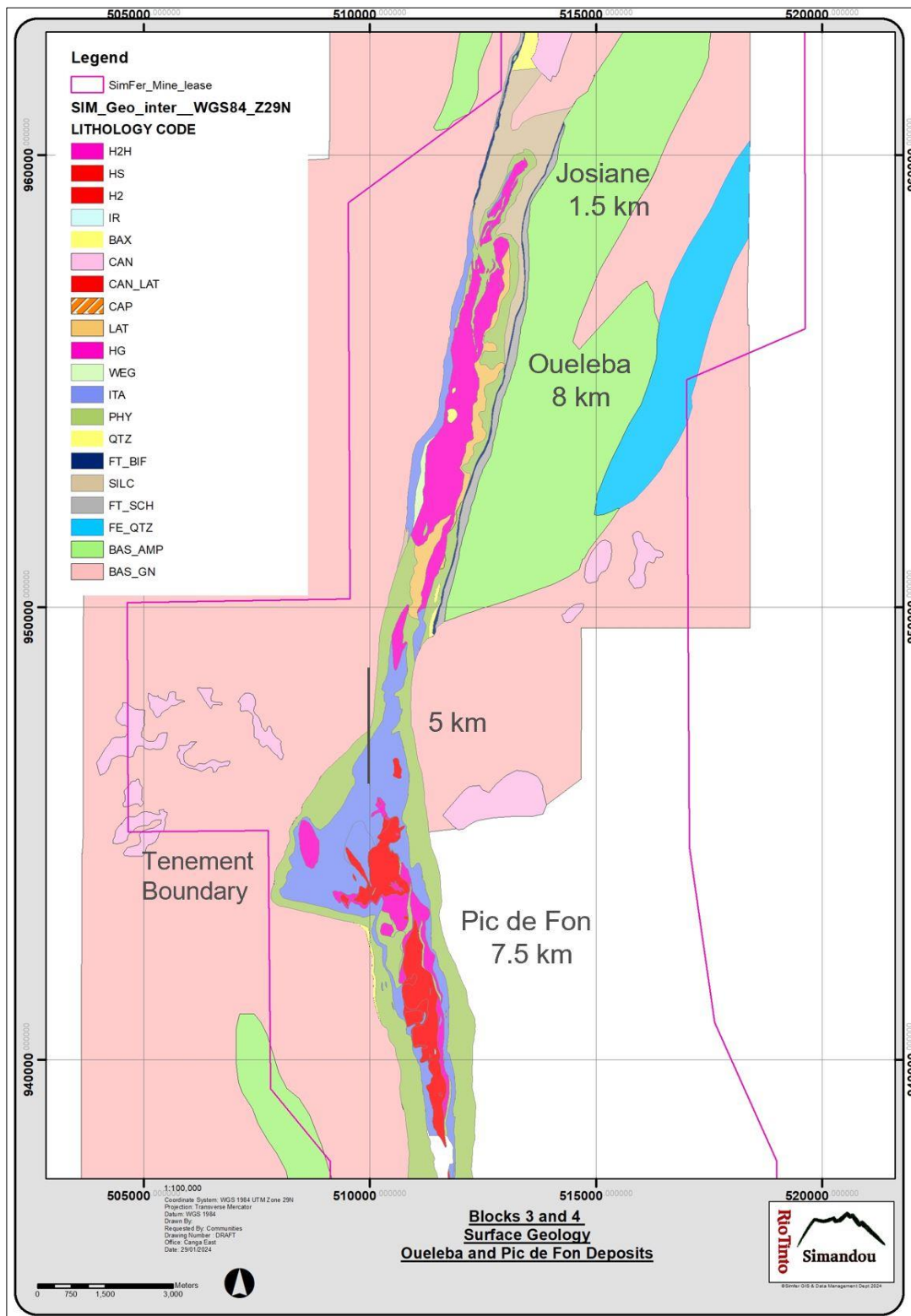


Figure 6-3: Blocks 3 and 4 Ouléba and Pic de Fon geology plan

LAT = laterite; CAP = carapace; CAN = canga; TRN = transitional; HS = friable hematite; H2 = hard hematite; H2H = hard hematite goethite; IR = enriched itabirite; BAX = bauxite; IPF = friable poor itabirite; IPC = compact poor itabirite; PHV = very weak phyllite; PHW = weak phyllite; PHS = soil strength phyllite; PHY = compact phyllite; FT_BIF = footwall bif; FT_SCH = footwall schist; SILC = siliciclastic; QTZ = quartzite; FE_QTZ = iron quartzite; BAS_AMP = basement amphibolite; BAS_GN = basement gneiss

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The Pic de Fon deposit is an approximately 7.5 km long, and 500 m wide (extending briefly to just over 1,000 m wide at the northern end of the deposit) zone of mineralisation. The deposit forms part of a north-northwest trending ridge, and both deposits originated from an itabirite precursor. The ridge line likely forms part of an ancient erosion surface, probably mid-tertiary in age, which has been subjected to deep prolonged tropical weathering.

The stratigraphy of the deposits is characterised by the Simandou Group (Figure 6-4), which unconformably overlies the basement lithologies.

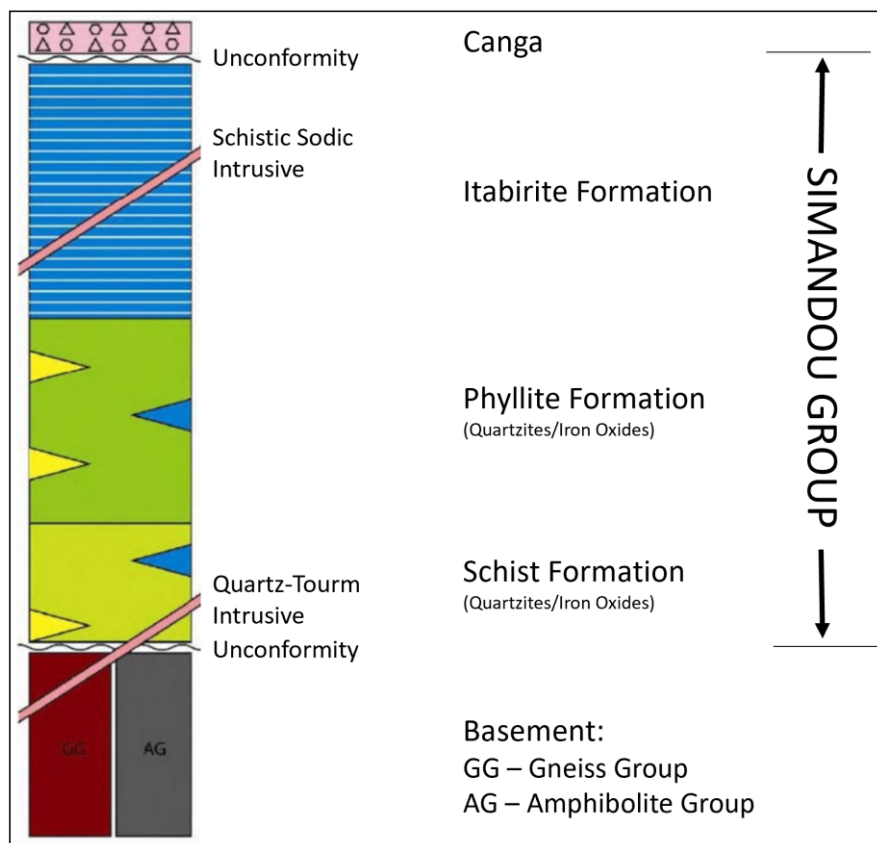


Figure 6-4: Simandou Group stratigraphic column

The Simandou Group consists of a sequence of metamorphosed supracrustal rocks comprising a basal ferruginous schist formation, overlain by phyllites and then itabirites. A combination of high strain deformation, metamorphism (which re-crystallised the banded iron formation proto-ore to itabirite), weathering, and mineralisation processes make stratigraphic interpretations within the deposits difficult. The only remaining discernible stratigraphic contact is between the basal phyllite, and itabirite formations.

6.5 Deposit type and geology

The Ouéléba and Pic de Fon deposits are typical of supergene-enriched itabirite hosted iron ore deposits. The deposits are similar to other known examples such as the Nimba deposit (Guinea), and deposits within the Iron Quadrangle (Brazil). The deposits are part of a supracrustal belt, with the BIF proto-ore likely deposited in a shallow marine setting, within a forearc basin. The age of deposition is considered to be between 2.7 Ga and 2.2 Ga.

Rio Tinto has interpreted the following domains for the itabirites: laterite, carapace, transitional mineralisation, friable hematite-goethite mineralisation, friable enriched itabirite, friable poor itabirite and compact poor itabirite. Phyllite domains have been interpreted for very weak phyllite, soil strength phyllite, weak phyllite, compact pyritic phyllite, weak quartzite, and compact quartzite. Laterite and carapace domains are sub-horizontal, with the laterite overlying all other lithologies, in local areas, and the carapace overlying the mineralisation and enriched itabirite lithologies. The itabirites and phyllites are interpreted to be folded, with the axial planes of the fold hinges dipping moderately to steeply towards the west.

There has been no change to the geological interpretation at Pic de Fon since 2012. The Ouéléba deposit has been reinterpreted to include an additional 217 drill holes completed in 2012 and 2013, after the 2012 resource model cut-off date. Interpretation of the geology domains has remained consistent with the historical methodology.

6.5.1 Schist and phyllite formations

The basal schist formation is a coarse-grained material that transitions into the fine-grained phyllite formation. The phyllite formation varies in competency from weathered soil strength through to fresh compact/hard rock strength at depth. At depth, the fresh compact phyllite can contain varying concentrations of pyrite. There are also numerous quartzites, both friable and compact, within the phyllite.

6.6 Mineralisation

Mineralisation is hosted in the itabirite formation, which conformably overlays the phyllite formation. There are four main mineralisation groupings: itabirite (siliceous), hematite-goethite (primarily Ouéléba), hematite (primarily Pic de Fon) and weathered.

Ouéleba hematite-goethite mineralisation consists mainly of friable hematite-goethite material extending locally also to depths greater than 400 m below surface. Hematite mineralisation at Pic de Fon consists mainly of friable hematite material extending locally to depths greater than 400 m below surface. There is a variable component of ultrafine material. Both the hematite, and hematite-goethite mineralisation are chemically and texturally variable, which is evident in the localised hard to medium-hard mineralisation areas.

At Ouéléba, there are small areas of dominantly hematite-only mineralisation similar to the primary mineralisation type at Pic de Fon. These areas appear to increase in abundance towards the northeast of the deposit.

The mineralisation front generally degrades downwards, from the hematitic, or hematite-goethite mineralisation, into partially mineralised and generally friable itabirite, then into slightly enriched itabirite, before finally becoming unenriched, dolomitic, and magnetitic compact itabirite.

Surface mineralisation shows variable degrees of weathering, which increases deleterious elements such as phosphorus, and alumina. This is associated with hydration processes, and goethite cementing. Weathering is highly variable in thickness (up to 40 m), and weathered goethite mineralisation also occurs in both flatter topographic areas, and on the flanks of the deposits. Numerous debris flows have deposited iron rich detrital materials, such as cangas, on the flanks of both deposits. These cangas commonly, unconformably, overlie phyllite or basement lithologies with thicknesses varying from several metres up to 40 m.

Figure 6-5 to Figure 6-8 show typical geological and block model cross-sections through the Ouéléba and Pic de Fon deposits.

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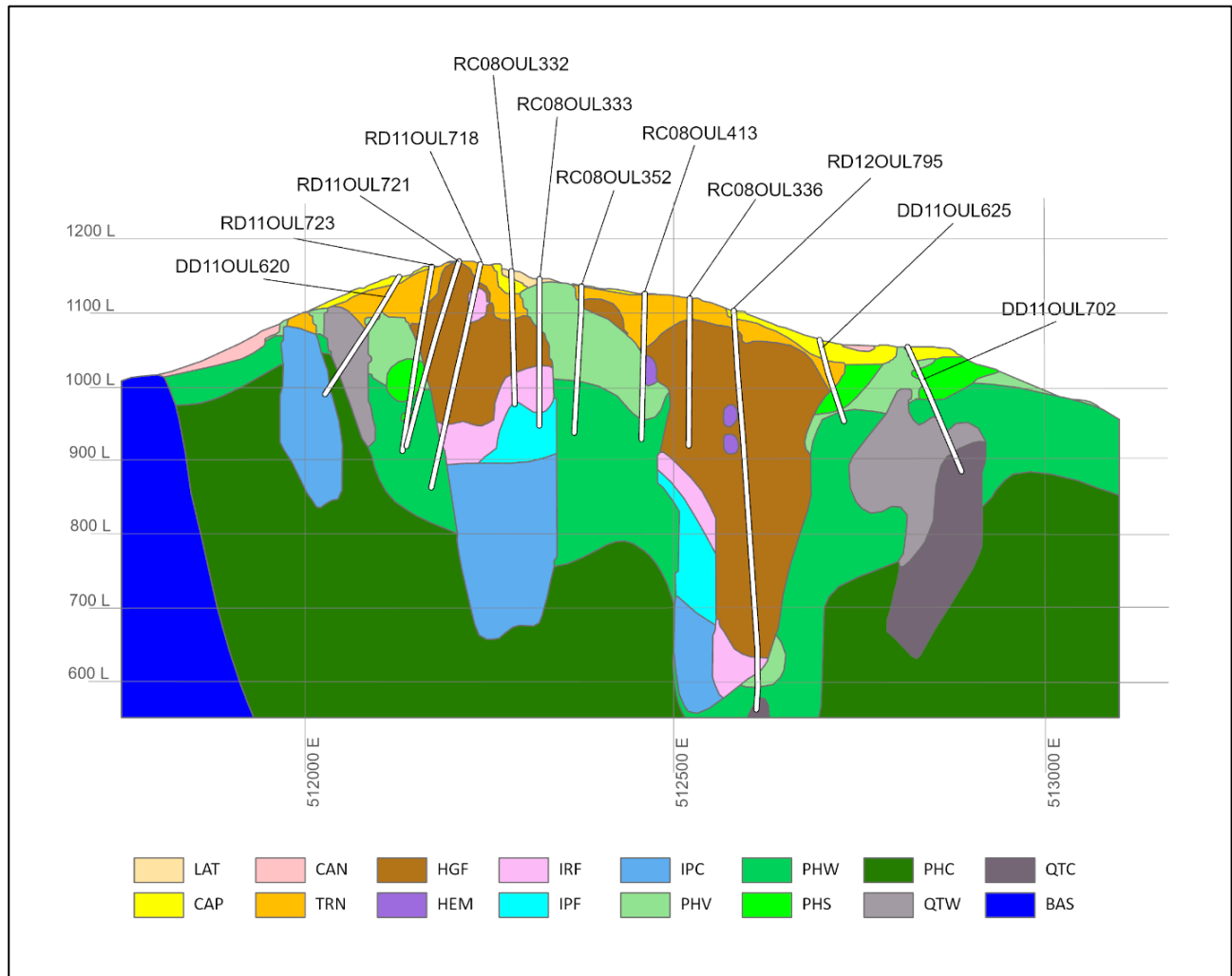


Figure 6-5: Cross-section 956750 mN through Ouéléba showing geological model and drill hole traces

LAT = laterite; CAP = carapace; CAN = canga; TRN = transitional; HGF = friable hematite goethite; HEM = medium hard hematite; IRF = enriched itabirite; IPF = friable poor itabirite; IPC = compact poor itabirite; PHV = very weak phyllite; PHW = weak phyllite; PHS = soil strength phyllite; PHC = compact phyllite; QTW = weak quartzite; QTC = compact quartzite; BAS = undifferentiated basement

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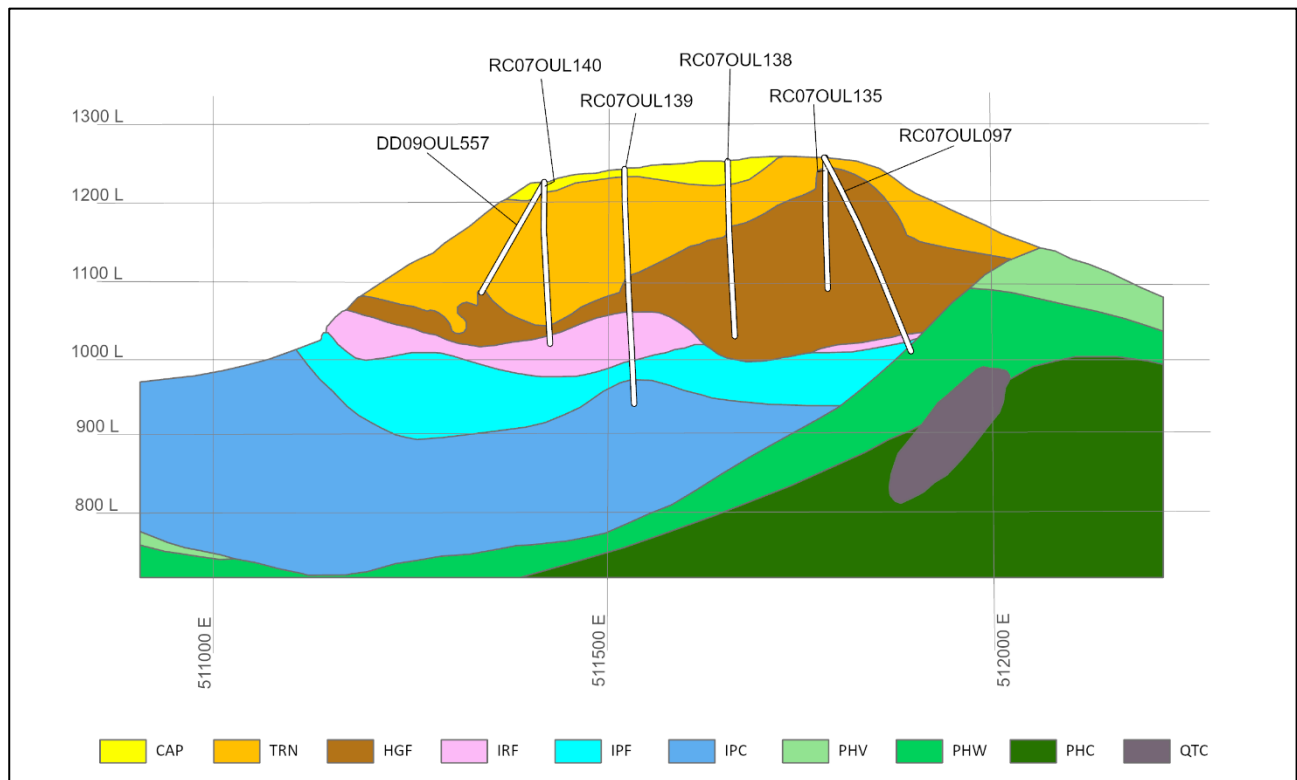


Figure 6-6: Cross-section 952700 mN through southern Ouéléba showing geological model and drill hole traces

CAP = carapace; TRN = transitional; HGF = friable hematite goethite; HEP = hematite; IRF = enriched itabirite; IPF = friable poor itabirite; IPC = compact poor itabirite; PHV = very weak phyllite; PHW = weak phyllite; PHC = compact phyllite; QTC = compact quartzite. Section 952700mN

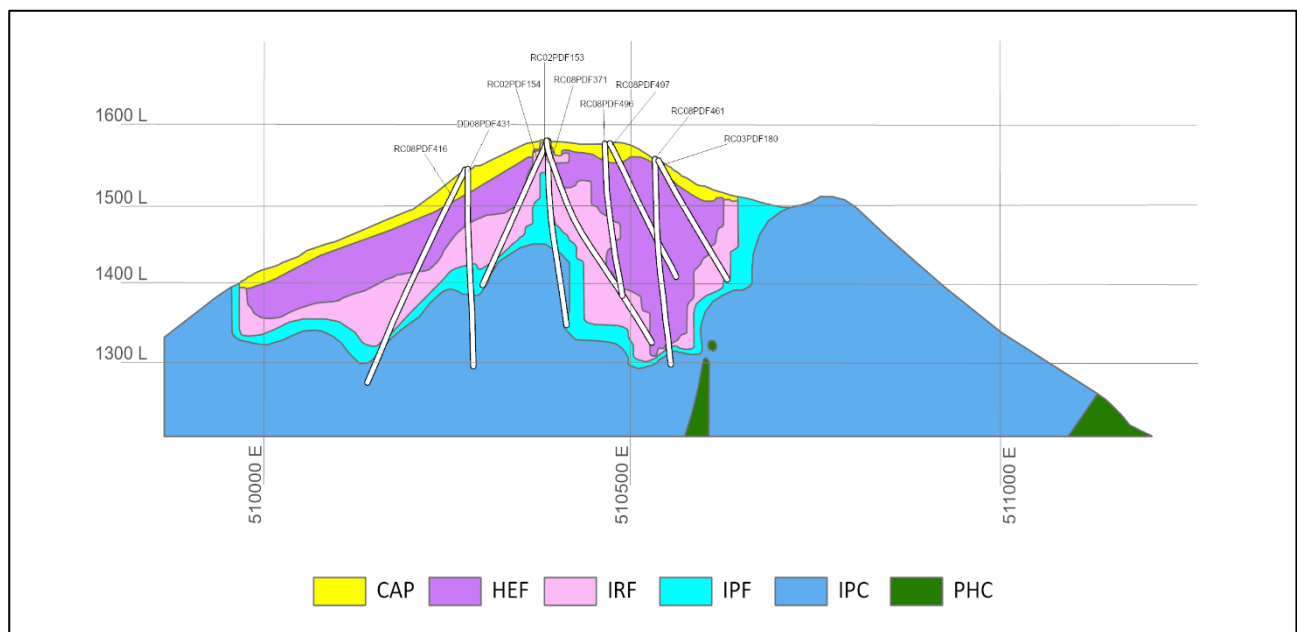


Figure 6-7: Cross-section 943940 mN through Northern Pic de Fon showing geological model and drill hole traces

CAP = carapace; TRN = transitional; HEF = friable hematite; IRF = enriched itabirite; IPF = friable poor itabirite; IPC = compact poor itabirite; PHC = compact phyllite. Section 943940mN

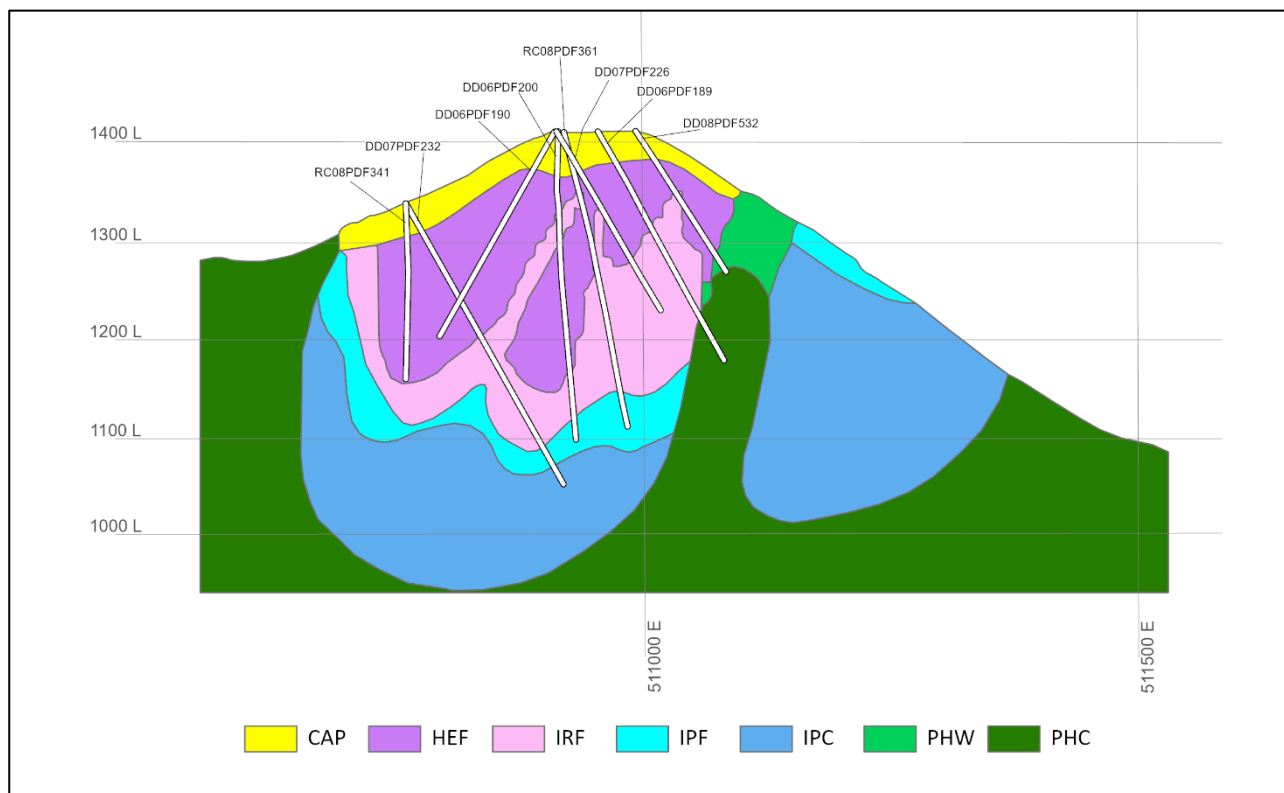


Figure 6-8: Cross-section 942420 mN through Southern Pic de Fon showing geological model and drill hole traces

CAP = carapace; HEF = friable hematite; IRF = enriched itabirite; IPF = friable poor itabirite; IPC = compact poor itabirite; PHW = weak phyllite; PHC = compact phyllite. Section 942420mN

The deep, synformal, friable mineralisation that is dominant at Ouéléba and Pic de Fon is somewhat similar in appearance to the friable mineralisation seen in the Carajas, and Quadrilátero Ferrífero districts of Brazil. The differences between the deposits are likely due to the varying intensities of supergene modification during the late Cretaceous to Tertiary periods.

Mineralisation was initiated by the itabirite formation being oxidised by hypogene fluids flowing along fault zones, fractures, and along banding. These circulating hypogene fluids would have utilised the porosity, via the dissolution of carbonate from the itabirite. This porosity and permeability would also have been exploited by the later inundation of supergene fluids. These processes likely acted to convert magnetite to martite, and variably enriched localised areas with microplaty hematite. There appears to be a link between the locations of high grade hematite bodies along the Simandou Range, and with the northeast to southwest to north-northeast to south-southwest crustal scale shears.

Subsequently, intense deep tropical weathering (supergene enrichment) is believed to have exploited areas pre-conditioned by the hypogene stage and was facilitated by faults and fractures in removing the bulk of the remaining silica in the surrounding rocks. Late-stage weathering has formed variably cemented, high deleterious zones over the primary mineralisation, namely the weathered domain at Pic de Fon, and weathered carapace and transitional zone domains at Ouéléba. A late stage cementing process created the hard hematite bodies at both Pic de Fon and Ouéléba.



7 Exploration

7.1 Exploration

Drilling techniques used over the history of the Property include RC, and DD. Drilling is mostly RC, with a lesser proportion of DD drilling. 69% of total drilled metres are RC at Ouéléba and 70% at Pic de Fon.

Holes are drilled as follows:

- Ouéléba: Declined between -44° and -90° (-77° on average).
- Pic de Fon: Declined between -43° and -90° (-70° on average).
- Hole total depths are between 16 m and 541 m and average 200 m for Ouéléba, and 210 m for Pic de Fon.
- A digital core orientation tool (Reflex™ ACT II RD) has been used since 2009 to mark the bottom-of-core orientation line.

In addition to the drilling data detailed above, the following items have also been completed:

- Metallurgical test work.
- Structural mapping for engineering geology and geotechnical purposes.
- Geological mapping in potential resource extension areas.
- Surface water studies and geotechnical studies.
- Surface exploration activities as part of geological mapping programs over areas where there are no mining activities. A small number of grab samples (1 to 3 kg) were collected.
- Exploration activities to test for potential resource extensions outside the project mining areas are planned once full production is attained.

7.2 Pic de Fon drilling

Drilling commenced at Pic de Fon in 1998 and has continued each year (with the exception of 2005 and 2009) until 2011. A number of drilling companies have operated at Pic de Fon since the commencement of drilling.

Figure 7-1 shows drill hole locations for the Pic de Fon deposit. Table 7-1 shows a summary of drilling data used for the Pic de Fon Mineral Resources estimate. An additional 47 holes (6,975 m) were used for geological interpretation only due to not being sampled or possessing unreliable assay information.

Table 7-1: Summary of drilling data used for the Pic de Fon Mineral Resources estimate

Year	RC		DD	
	# Holes	Metres	# Holes	Metres
1999	16	1,355	-	-
2000	-	-	7	1,384
2001	8	970	1	156
2002	97	17,956	2	511
2003	26	5,500	-	-
2006	-	-	15	3,369
2007	46	10,482	35	6,773
2008	211	44,963	49	12,777
2010	-	-	15	4,373
2011	-	-	1	230
Total	404	81,282	125	29,573

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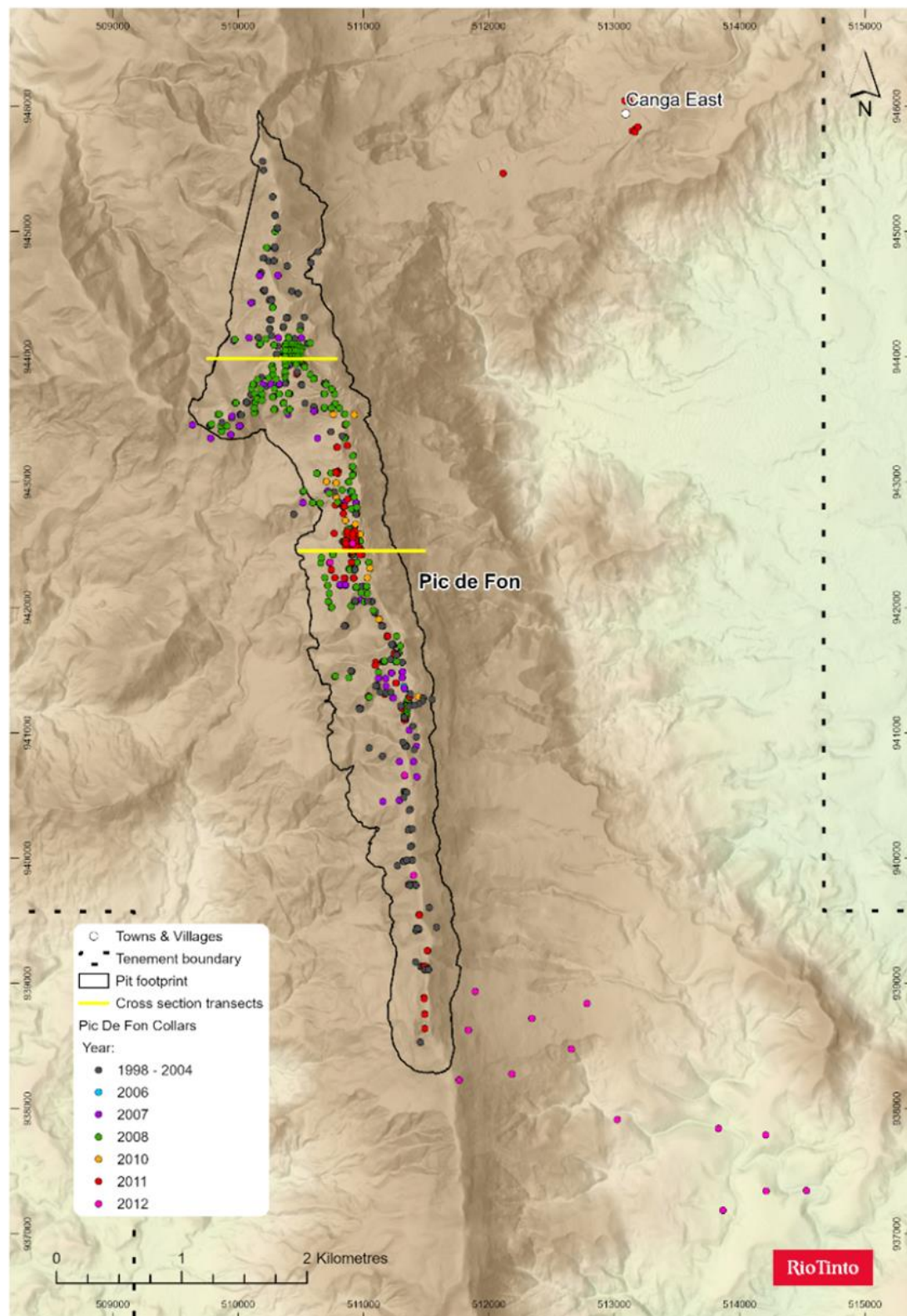


Figure 7-1: Drill hole location plan Pic de Fon



7.2.1 Reverse circulation drilling

RC drilling at Pic de Fon first commenced in 1998 and several campaigns have been completed since then. There was no RC drilling completed at Pic de Fon in 2000, 2004, 2005, 2006 or 2010. A number of holes with RC pre-collars and DD tails drilled in 2011 containing geological logging information were used in the geological interpretation process. RC drilling is used for hole lengths up to approximately 150 m in length. If a hole is planned to be longer, DD is utilised for the remaining length.

The rigs are fitted with a typical, but quite large, cyclone-splitter configuration. The cyclone is fitted with double shutters, one located below the cone of the cyclone and the other below the storage box above the splitter. The cyclone shutter is opened to allow the sample to drop into the storage box. The cyclone shutter is then closed and the storage box shutter opened to allow the sample to enter the splitter compartment. The UDR dome-type cone splitter produces a 6.25% primary 'A' and a 6.25% secondary 'B' sample with an 87.5% reject.

The majority of RC samples at Pic de Fon have been collected every 2 m down hole. Exceptions to this are some 2008 RC holes, which were drilled as part of a continuous miner trial and were sampled on 1 m intervals. These samples comprise 2.6% of the total dataset. Additionally, a small number of RC intervals that occur as the last sample in a hole are less than 2 m in length (and in some rare cases slightly greater).

In 1999, a RC drilling program was undertaken with encouraging results which justified further work in the Pic de Fon area. Following this, RC drilling continued between 2001, and 2003. This program utilised track-mounted or Heli RC drill rigs. RC drilling used two face sampling bit sizes (5 ½ inch, and 5 ¾ inch) and a variety of RC hammers. Polyvinyl Chloride (PVC) casing was used and cemented in place to average depths of 10 m. RC sampling was undertaken through a cyclone, and sample splitter attached to the rig. The splitter allowed for samples to be divided into three individual sample splits, two of 12.5%, and one of 75%.

Between 2006 and the end of 2008, the largest RC drilling campaign conducted at Pic de Fon was completed. This campaign represents 44% of the total RC drilling completed to date. Drilling completed during 2006/2007 identified issues related to sample recovery. Since 2007, RC drilling has utilised two face sampling drill bit sizes (5 ½ inch and 5 ¾ inch). Drilling conducted to the end of 2008 used boosted air. Later drilling i.e., 2011, used only rig air, which increased sample quality and chip size.

7.2.2 Diamond drilling

Diamond drilling at Pic de Fon between 2000 and 2011 used a range of bit sizes. Commonly holes have been drilled with multiple bit sizes. The bit size used is related to the type of the material being drilled and the depth of the drilling to maximise recovery and reduce potential issues with bogged drill rods with bit size decreasing with increasing hole depth. In general, a larger diameter core size is used in weathered material, which is often characterised by soft and loose material, and continued beyond this type of material for approximately 20 m. For drilling in mineralised units, or for hole lengths greater than 180 m, a smaller diameter i.e., HQ3 (96 mm hole diameter, and 61.1 mm core diameter) has been used. A smaller diameter again i.e., NQ is used if the hole extends beyond 350 m in length.

Since late 2009, a drill core orientation tool has been used for DD. An internal audit in late 2011 identified that the reliability of readings averages 40% to 50% mainly due to field procedural errors (e.g., the driller rotating the drill string when breaking the core, and improper transfer of orientation mark to the core).

The majority of samples have been collected every 2 m down hole. Exceptions to this are all DD holes prior to 2006 (these holes were sampled to lithological boundaries). Additionally, a small number of DD intervals that occur as the last sample in a hole are less than 2 m in length (and in some rare cases slightly greater). The sample collection method for DD core has predominantly been half core, with 18 holes being sampled using full core. Most of the remaining half of the sampled material has been retained on site for future reference. Where recovery was very poor for certain intervals, a whole core sample was taken to meet the minimum sample mass requirement of the prep-laboratory (~500 g). For the various metallurgical holes (22 in total) only a groove, or chip sample was collected for each sampled interval.

During 2007, core recovery averaged 83%. However, the arrival of different drilling contractors and a significant focus on improving drilling practices resulted in average core recovery increasing to 88% during 2008.



7.3 Ouéléba drilling

Drilling commenced at Ouéléba in 2005 and continued each year to 2013. A number of drilling companies have operated at Ouéléba since drilling commenced.

Figure 7-2 shows drill hole locations for the Ouéléba deposit. Drilling commenced at Ouéléba in 2005, with 23 RC holes being completed. In 2006, a small number of DD holes were completed. The drilling completed in 2007 and 2008 represents 74% of the total metres drilled. Drilling in these years was dominantly RC.

Table 7-2 shows a summary of drilling data used for the Ouéléba Mineral Resources estimate. 44 additional holes (4,362 m) with no assay or geological logging, or with location uncertainty, were excluded from geological modelling and subsequent grade estimation. An additional five holes with no assay information were used for geological modelling, but not grade estimation.

Table 7-2: Summary of drilling data used for the Ouéléba Mineral Resources estimate

Year	RC		DD		RC pre-collar and DD tail	
	# Holes	Metres	# Holes	Metres	# Holes	Metres
2005	23	2,013	-	-	-	-
2006	-	-	5	1,285	-	-
2007	141	25,795	19	4,999	-	-
2008	316	58,378	29	9,625	6	2,148
2009	-	-	26	7,574	-	-
2010	-	-	49	10,567	-	-
2011	23	3,210	41	8,582	17	4,724
2012	60	8,792	79	16,965	8	2,844
2013	-	-	10	2,844	-	-
Total	563	98,188	258	62,441	31	9,716

7.3.1 Reverse circulation drilling

RC drilling has been ongoing since 2005, with four drilling companies being used. There was no RC drilling completed in 2009 and 2010. The largest number of holes, representing 42% of the total RC drilling, was completed in 2008. RC drilling is used for hole lengths up to approximately 150 m. If the hole is planned to be longer, DD drilling is used for the remaining length.

Casing and sample collection practices and timelines are similar to Pic de Fon, having utilised comparable procedures and companies per campaign as detailed in Section 7.2.1.

7.3.2 Diamond drilling

Diamond drill holes were completed using wireline drilling techniques. Triple tube techniques were used which were collared using SQ (146.0 mm hole diameter, and 102.0 mm core diameter), reducing to PQ3 (122.6 mm hole diameter, and 83 mm core diameter), HQ3 (96 mm hole diameter, and 61.1 mm core diameter) and NQ3 (75.6 mm hole diameter, and 45 mm core diameter) core barrels where required. Diamond drilling at Ouéléba has used a range of bit sizes. Similar to Pic de Fon, in general a larger diameter core size is used in weathered material, which is often characterised by soft and loose material, and continued beyond this type of material for approximately 20 m. For drilling in mineralised units, or for hole lengths greater than 180 m, a smaller diameter i.e., HQ3 has been used. A smaller diameter again i.e., NQ is used if the hole extends beyond 350 m in length.

Core orientation and sampling approaches and timelines are similar to Pic de Fon, having utilised comparable procedures and companies per campaign as detailed in Section 7.2.2.

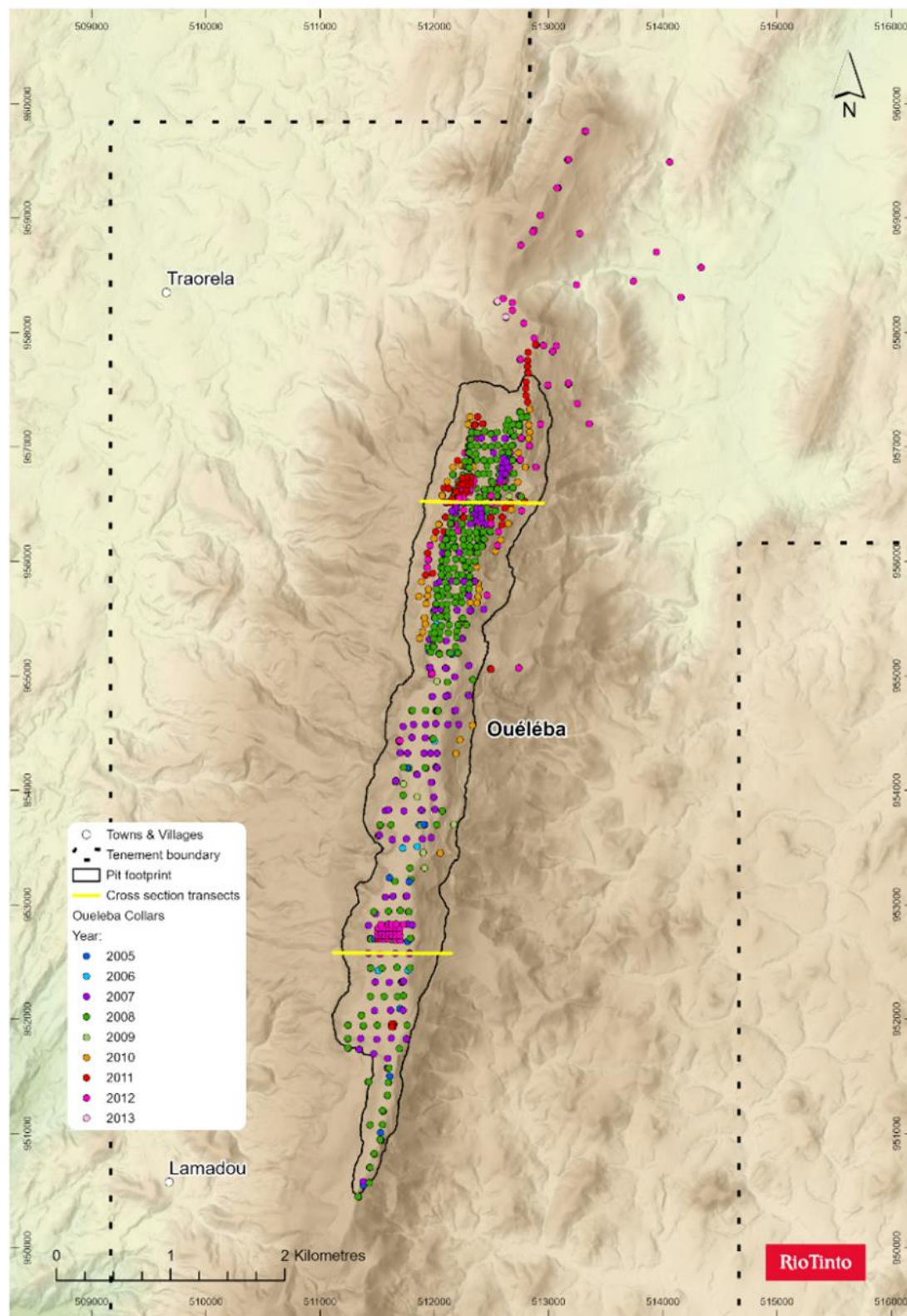


Figure 7-2: Drill hole location plan Ouéléba



7.4 Hydrogeology and hydrology data

Groundwater modelling is undertaken in accordance with the Rio Tinto groundwater modelling framework, which provides guidance for modellers, reviewers, and managers on groundwater modelling in the context of iron ore mining support at the Property.

All models are underpinned by a conceptual understanding of the hydrogeological system. A conceptual model summarises what is known about the system and guides the selection of appropriate assumptions and simplifications. Conceptual models are qualitative and uncertain, due to limitations in representing or having knowledge of the full complexity of even a relatively simple hydrogeological system. In some cases, important hydrogeological features such as faults or dykes, may be poorly characterised by field data, or may be completely unknown.

The hematite/itabirite orebodies at the Property comprise the principal aquifers. The phyllites that host the orebodies are bounded by crystalline basement rocks, which dominate the regional geology. Basement aquifers are typically characterised by localised groundwater flow systems and limited regional groundwater flow.

Hydrogeological data is collected through a network of meteorological, hydrological, hydrogeological, and water chemistry monitoring stations across the Property. Groundwater level monitoring installations include both standpipe piezometers, and Vibrating Wire Piezometers (VWPs).

An integrated surface and groundwater numerical model was developed for the Property. The model is used to derive dewatering requirements and assess possible impacts.

The following parameters were used for the development of the surface water model:

- Rainfall.
- Potential evapotranspiration.
- Land-use.
- Hillslope.
- Canopy interception.
- Rapid runoff.
- Soil moisture accounting.
- Interflow.

The groundwater model was developed based on the geological and structural understanding and conceptual groundwater model derived from drilling and in situ testing. The model consists of eight hydrostratigraphic units that represent the groundwater system for the Property, including the orebody as the principal aquifer. Hydraulic conductivity and storage coefficient of the hydrostratigraphic units were chosen based on ranges derived from various field programs and refined to reflect the conceptual groundwater model.

The outputs from the combined surface and groundwater model were used to develop a site wide water balance.

7.5 Geotechnical data

Geotechnical diamond drilling has been conducted to provide structural, geological, and geotechnical data. This enables the effective evaluation of material and rock mass properties for the economic and safe design of pit walls and underground excavations. Three types of data are collected using geotechnical core logging techniques. These include:

- Interval data – Properties that describe the type and quality of the rock mass.
- Structural data – Characteristics of specific discontinuities that intersect the core.
- Sample data – Information on specific samples is gained through physical tests on the specimens under laboratory conditions to determine properties such as strength, mineralogy, slaking susceptibility etc.

This data is then used to define the geomechanical characteristics of the materials.

Geotechnical diamond drilling preferably uses triple tube drilling techniques to maintain the integrity of the core and various quality control and quality assurance procedures are carried out. Typical geotechnical



drilling core sizes include NQ3, HQ3 and PQ3. PQ3 is the preferred core size for holes that are planned to intersect weak material types such as clays and weak phyllites.

Geotechnical samples are collected at the rig for a variety of destructive and non-destructive laboratory tests. A Shelby tube is used to collect samples in the soil like material, as it provides an undisturbed sample. This is essential when sampling weak rock types such as clays that degrade quickly on exposure to the atmosphere. The logger is present when critical zones for sampling are intersected. Additional samples may also need to be collected for environmental, e.g., acid rock drainage, metallurgical, petrological and assay testing.

The following aspects are considered when selecting geotechnical samples:

- Samples are selected from the split as soon as the core is marked up and initial interval logging (e.g., recovery, RQD length) is completed.
- The following basic parameters are recorded; lithology, stratigraphy (if possible), weathering, discontinuity characteristics (if applicable) and field strength.
- Photos of the samples are taken prior to wrapping, including both end-on and side-on views.
- At least one sample per tray is wrapped as a matter of routine to provide a good selection of geotechnical samples to choose from. The sampling frequency increases when a specific zone of interest is intersected (e.g., a fault zone).
- A core block is placed in the gap where the sample is taken, marked with the sample ID and start and end depths, test type, lithology and estimated field strength.

A large number of laboratory tests have been conducted on samples collected from the Property, due to variation in strengths across the various geological domains. Geotechnical testing was carried out at Geolabs UK Ltd, an independent accredited soil, rock, and aggregate laboratory based in the United Kingdom. Table 7-3 presents a summary of the various types of tests conducted.

Table 7-3: Geotechnical testing on samples collected from the Property

Soil testing	Rock testing
Particle density (specific gravity)	Uniaxial Compressive Strength Test
Natural moisture content	Uniaxial Compressive Strength Test with Young's Modulus & Poisson's Ratio
Particle size distribution	Uniaxial Indirect tensile strength test (Brazilian method)
Hydrometer analysis (pipette analysis)	Multi-stages direct shear testing on joint
Atterberg limits	Point load index testing
Bulk unit weight	Determination of dry density / moisture content relationship method using 2.5 kg rammer
Consolidation test	Determination of dry density / moisture content relationship method using 4.5 kg rammer
Direct shear strength tests of undisturbed soil (3 points)	4 Day Soaked CBR tests
Direct shear strength tests of remoulded soil (3 points) including residual strength	Los Angeles test
Triaxial compression test, Consolidated Undrained + pore water measurement CU (single stage)	
Triaxial extension test, Consolidated Undrained + pore water measurement CU (single stage)	



7.6 QP's opinion on the adequacy of the exploration information

The QP considers the data collected including method of collection, and storage to be appropriate for the generation of the Mineral Resources estimate for both Ouéléba and Pic de Fon and is considered in the classification.

The high grade mineralisation at Pic de Fon and Ouéléba is located on the top of a steep ridge which presents a significant access and logistics challenge to drilling operations though is typically well managed as illustrated in Figure 7-1 and Figure 7-2.

The reliability of drill core orientations readings averages approximately 40–50% between core runs. This error is attributed to procedural errors with impacts to structural interpretation and locally domainning. Due to the high degree of alteration, stratigraphic modelling is not attempted or used to inform estimation. Global resource risk is not considered to be material related to this but will require suitable controls during operations.

Additional drilling will be required to improve the modelling of mineralisation at depth in the initial mining area and upgrade Mineral Resources classification to support planning requirements including waste characterisation, pit slope confidence and the structural model.

The QP is satisfied that the hydrogeological and geotechnical information collected is sufficient and meets requirements for the intended use.

8 Sample preparation, analyses, and security

8.1 Sample preparation and quality control methods

8.1.1 Geochemical sampling

A Standard Work Procedure titled Geochemical DD Sampling has been established to standardise reliable and representative sampling methods of DD core.

Samples at Ouéléba and Pic de Fon have primarily been collected at 2 m intervals for assay and geological logging from both RC and DD drilling. RC samples have been collected via a number of methods (rotating or static cone splitters, and riffle splitters) to achieve a 2 kg primary sample. Samples were dried, crushed, split, and pulverised to produce a pulp sample of approximately 60 g.

8.1.2 Core sampling

DD drilling has used a range of bit sizes with bit size decreasing with increasing depth (e.g., from PQ to NQ). DD core was sawn in half where core was competent, where core was not competent sampling was conducted manually to obtain approximately half the core. One half of the core was retained, and the other half was dried, crushed, split, and sieved for three size fractions (since 2008) which were pulverised to produce pulp samples of approximately 60 g. One half of the core was retained on site for future reference.

8.1.3 Assay sample preparation

Samples were sent to the Canga East Preparation Laboratory (a Rio Tinto owned facility located in Guinee) to be processed to a pulp sample for analysis. Between May and September 2008, samples were sent to the independent SGS Laboratory in Bamako, Mali (ISO 17 025 accredited) due to a shutdown of the Canga East Preparation Laboratory.

Pre-2008 samples were dried for 12 hours at 105°C, then crushed to ≤ 2.36 mm. Samples were then split three times using a riffle splitter, then pulverised to 95% passing 106 micrometres (μm). The following samples were obtained: one 60 grams (g) pulp sample for analysis, one preparation laboratory duplicate sample, and a 300 g retention pulp to be stored at the Canga East Preparation Laboratory.

Grade by size methodology was introduced in 2008 for DD samples. The following is a summary of the methodology:

- Samples are dried for 24 to 36 hours at 105°C prior to crushing.
- The diamond half-core is crushed to 35 mm before being screened in a purpose-built screening into eight size fractions.
- Size fractions are recombined to form distinctive lump (>10 mm), sinter (<10 mm and >150 μm), and pellet feed (<150 μm) samples. These samples are submitted individually (where there is sufficient sample) for assay or combined if there is insufficient material to form a sample pulp of approximately 60 g from one or more of those fractions.
- When the assays for the lump, sinter and pellet feed samples are returned, the assays are then uploaded into acQuire™, and a head grade (which is the term used for the combining of the three individual assays) is then calculated using a weighted average technique.

8.1.4 Sample security

Rio Tinto employs a security team to monitor site security. Prepared pulps are stored on site, inside a secured shipping container. Primary pulps are sent by air freight in a secured metal container to an independent laboratory in Perth, Western Australia for assaying.

Half the core from each DD hole is stored in a secure fenced compound.

RC retention pulps of approximately 120 g are placed in small plastic bags (150 mm x 250 mm), with approximately 20 small plastic bags placed into larger bags. Retention pulps are stored in a secure shipping container on site. Since 2010, secondary RC samples have been riffle split and retained as reference samples in a secure storage facility.



8.1.5 Dry bulk density determination

Bulk dry density values were determined using the Corelok™ system where samples, nominally 15 centimetre (cm) in length, are vacuum sealed, with water displacement used to determine the density value and porosity. The 3,884 density samples (1,918 from Ouéléba, and 1,966 from Pic de Fon) have been selected from 146 DD holes since 2007. The domains represented by the density samples are similar in representation to the domains coded in the resource drilling data. The density data was statistically analysed to determine an average bulk dry density value to be used for each geology domain used in the resource model. Itabirite density values range from 2.8 to 3.3 t/m³. Phyllite density values range from 1.7 to 2.4 t/m³.

8.2 Sample analysis

Pulp samples were sent to Ultra Trace Laboratories in Perth, Western Australia, which is an external ISO 9001 accredited independent laboratory for analysis using X-ray fluorescence (XRF) fusion disc and whole rock analysis completed for 24 elements. The following suite of variables were analysed:

- Fe, SiO₂, Al₂O₃, TiO₂, Mn, CaO, P, S, MgO, K₂O, Na₂O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, and Zr.

Loss on Ignition (LOI) was measured using a thermo-gravimetric analyser at 371°C, 538°C, and 1,000°C and then accumulated for total LOI using a 3 to 5 g sub-sample from the pulp sample.

Laboratory used and the analytical methods have remained consistent across drilling campaigns.

8.3 Quality assurance measures

8.3.1 Quality assurance and quality control program outline

As part of the quality assurance and quality control (QA/QC), measures include the insertion of Certified Reference Material (CRM, standards) to monitor the accuracy of the assay results; and field, pulp, and laboratory duplicates to monitor sampling precision.

8.3.2 Certified Reference Material

Two types of CRM have been used; coarse and pulp. The CRMs used have been prepared by Rio Tinto Iron Ore (RTIO) in Western Australia for the 2002 and 2007 CRMs, and by Geostats Pty Ltd (Geostats) in Western Australia with the homogenisation of the samples by SGS in Bamako (Mali) for the 2009, 2010 and 2011 CRMs.

Certified Reference Material (CRM) standards are inserted by the geologist at a rate of one in every 20 samples in mineralised zones, and one in every 60 samples in waste material, with a minimum of one standard per hole. All check standards contained a trace of strontium carbonate that is added at the time of preparation to allow identification of coarse reference material (geo standards). These standards are used to check sample preparation and analytical precision and accuracy at the laboratory. In addition, pulp CRMs were inserted at the laboratory at the rate of approximately one in 60 samples.

8.3.3 Blanks

Blanks have not been used on the project historically. Locally and cost effective available blank material such as quartz flushes was considered to pose a contamination risk in the preparation stage for deleterious element analysis.

8.3.4 Duplicate samples

There are three types of duplicate samples, including field duplicates, preparation laboratory duplicates, and pulp duplicates:

- Field duplicates are used to monitor the homogeneity of the material being sampled, and the sampling method. Field duplicates are replicate samples from the primary field sample. RC and DD field duplicate samples are submitted at a rate of one in 20 samples (5%), 'spiked' with ~1/4 teaspoon of zinc to allow identification of field duplicate samples. Field duplicate sample results have been compared to their respective original sample results for all analytes of interest. Field duplicates from RC drilling are collected by sacrificing a 'B' split retention sample directly from the rig splitter.



- Preparation laboratory duplicates are inserted at a rate of one per hole by the laboratory. For drilling campaigns up until 2012 (representing 89% of all drilling data) one sample per hole, generally representing an interval of high geological heterogeneity, was flagged as a pulp duplicate, and was analysed for pulp residue, and reprocessed and relabelled by Geostats to test for analytical accuracy (Xtract, 2012a, and 2012b). A 2011 audit recognised this as below recommended guidance of 3 to 5% with actions developed to remedy.

8.4 Opinion on the adequacy of the sample preparation, analysis and security

The QP considers the sample preparation, analytical procedures, QA/QC and security protocols to be appropriate in regard to the data used in the generation of the Mineral Resources estimate and is considered in classification. Quality control and assurance measures employed for sample collection, preparation and security are in line with industry expectations to ensure validity and integrity for use in a Mineral Resource estimate. Sample analytical procedures used are consistent with conventional industry practice.

QA/QC performance has been variable over different drilling campaigns.

Historical duplicate data (to the end of 2008) shows that RC samples yield very good sampling precision for Fe in the massive and homogenous high grade (>50% Fe) hematite/martite mineralisation. However, sampling precision for low grade Fe and deleterious elements such as Al_2O_3 and SiO_2 is lower, indicating that the distribution of the contributing geological components (e.g., phyllite and clays) is less homogeneous. Confidence in resource block estimates is affected by sampling error. The field duplicate data indicates that for a given drill spacing, a higher level of confidence can be expected in high grade Fe (<50%) but a lower confidence can be expected for low grade Fe and deleterious elements.

For Ouéléba, 70% of the drilling data was collected and QA/QC was completed in 2007, 2008 and 2011. Over these campaigns documentation exists and whilst issues are identified, these are not material. Documentation for QA/QC in 2013 has not been able to be located and actions are in place to review this data. Campaigns with absent documentation have been reviewed spatially, visually and statistically. Samples that did not meet the required QA/QC criteria were excluded from the estimation and considered in the resource classification criteria.



9 Data verification

9.1 Exploration and Mineral Resources verification

Written procedures outline the processes of geological logging and data importing, QA/QC, validation and assay importing. A robust, restricted access -database is in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time and user.

All DD and RC chip samples are logged over 2 m intervals. Quantitative logging for lithology, stratigraphy, texture, and hardness is conducted using defined material type codes based on characterisation studies and mineralogical assessments. Colour and any additional qualitative comments are also recorded.

Each tray of core is photographed, and each half core is retained in a secure storage facility.

Most DD holes since 2008 have been geotechnically logged at the drill site before transporting the core. There have also been a number of drill holes which have specifically been drilled to enable more detailed logging and destructive testing of core to obtain quantitative geotechnical rock property information. A subset of drill holes used for geotechnical investigations have also been logged with an acoustic televiewer (ATV).

More than 70% of the holes have been geophysically logged using downhole tools for gamma trace, gamma density, resistivity and magnetic susceptibility.

All drilling data is stored in the Rio Tinto Simandou acQuire™ drill hole database. The system is backed up daily to a server located in Conakry, Guinea. All data is transferred electronically and checked prior to upload to the database.

In-built validation tools are used in the database, and data loggers are used to minimise keying errors, flag potential errors and validate against internal library codes. Data that is found to be in error is investigated and corrected where possible. If the data cannot be corrected, it is removed from the dataset used for resource modelling and estimation.

The drill hole database used for Mineral Resources estimation was validated by Golder, with the work reviewed by the QP. Methods used included checking of QA/QC data, duplicate drill hole locations, duplicate intervals, spurious total assay values, extreme values, zero values, possible miscoded data based on location within a geodomain and assay value, sample overlaps, Total LOI against the sum of the individual LOI values, inconsistencies in length of drill hole surveyed, and length of drillhole logged and sampled.

Drill hole collars (for 99% of the drillholes) were surveyed post drilling by licenced surveyors using DGPS with an accuracy of ± 30 mm. The remaining 1% of drill holes use planned coordinates to locate the drill hole.

Downhole surveying has been undertaken using a downhole gyroscopic tool since 2007, including attempted resurvey of historical drill holes. The downhole gyroscopic tool has an accuracy of $\pm 0.1^\circ$ for dip, and $\pm 1^\circ$ for the azimuth. Overall, 84% of the diamond drilling metres are surveyed over the entire drill hole length, but only 40% of the total RC drilling metres are downhole surveyed. Since 2011 downhole survey coverage of RC drilling metres has increased to 71%.

The grid system used for deposit surveys are in the Dabola 1981 grid system. The Ouéléba drill hole collar locations were converted to WGS84/UTM Zone 29N grid for estimation. With no update to the 2012 Pic De Fon model, this remains in Dabola 1981, but for future iterations will be updated in line with Ouéléba.

The topographic surface is based on airborne data collected in 2011, with an accuracy of ± 0.1 m in elevation, and ± 0.5 m in easting and northing. The Digital Terrain Model (DTM) was created with a 4 m by 4 m cell size triangulation, with a 0.2 m offset decimation applied to allow mining software to use the surface.

The QP considers the protocols used for electronic data storage and extraction of input data supporting the reported Mineral Resources estimates are in line with industry best practice. The implementation of an industry leading software such as acQuire™ provides a high level of data integrity on importation and security. The QP considers the data importation, storage systems and data verification to be adequate to support the Mineral Resources estimation.



The QP considers the surveys are sufficiently accurate for the purposes of Mineral Resources and Mineral Reserves estimation.

9.2 Mining and Mineral Reserves verification

Multiple verification steps, and processes are in place to verify the Mineral Reserves estimate. Verification applies to the assumptions and inputs into the estimate, as well as the estimation process itself.

Before publication and release, several peer review and reconciliation steps validate the reported Mineral Reserves data itself, along with the verification of modifying factors. The open pit mining modifying factors underwent benchmarking against available data within Rio Tinto and known operational data for similar types and scales of operations. Verification of mining costs involved benchmarking against similar scale and type open pit operations in West Africa.

A major mining equipment supplier for the region provided capital cost estimates for the mining fleet, including repair and maintenance costs, as well as delivery and commissioning costs for the fleet. Mining fleet productivity assumptions were verified against benchmark data available for similar types and scales of operations.

To ensure accuracy, validation of the mining block model against the Mineral Resource parent model was conducted for comparative volumes and ore loss dilution estimation.

Verification of the key modifying factors applied to the Mineral Resources estimate will also be undertaken as part of the production process once operational mining commences. Actual performance for operational mining areas provides a high level of confidence where similar performance can be expected and will be incorporated into the planning process for future mining areas.

The QP considers the data used for the purposes of preparing the mine design, mine schedule, and Mineral Reserves estimate suitable for the purpose of the Mineral Reserves estimate.

9.3 Geotechnical verification

Geotechnical data verification processes, and safeguards are similar to those implemented for Mineral Resources data verification, except that geotechnical holes are focused on geological units that will form the walls of the pits, and any structures that may impact slope stability. Historical drilling data is securely stored in an acQuire™ geoscientific information management system. The 2021 to 2023 drill hole data is stored in an AGS (Association of Geotechnical and Geoenvironmental Specialists) format. This will be fully transferred over to the site acQuire™ geoscientific information management system during 2024.

Drill hole logging is undertaken by appropriately qualified geotechnical engineers, and a minimum of 10% of core is relogged as part of the QA/QC process. Data passes through two stages of validation prior to being utilised for design purposes.

Geotechnical slope designs are signed -off by suitably qualified, and experienced professionals. The number of individuals authorised to sign-off geotechnical aspects of designs is limited to ensure quality verification of design data. The QP ensures that there is adequate data of suitable quality to justify the reliance on the information used for final design.

In the opinion of the QP, the geotechnical data used to inform slope parameters is of adequate quality for the Property and its material types and for the purposes used in this TRS.

9.4 Hydrology and hydrogeology verification

The collection of surface water flows, groundwater levels, and water quality data is undertaken in line with internal work procedures and adhere to best practice guidelines and industry standards.

Environmental scientists, hydrogeologists, and scientific technicians ensure traceability during various stages of data collection to the point of analysis through use of data handling and verification protocols. Temporal data is collected and uploaded into the appropriate database.



Verification of groundwater models involves comparing predictive outputs from the existing model, with datasets collected after the development of the original model, with the aim of confirming the model is suitable for use as a predictive tool, and to ensure that the inverse problem and the issue of non-uniqueness are addressed. A model update is scheduled for 2024, which will incorporate the latest geological, hydrogeological, hydrological and mine plan information.

In the opinion of the QP, the data used to inform the groundwater models is of adequate quality. Surface water models are built based on baseline flows and historical observations. In the opinion of the QP, this data is adequate for use in the mine design and production schedules, and for the purposes used in this TRS.

9.5 Processing and recovery methods verification

Metallurgical product predictions are verified numerous times through to their application for deposit estimates. Raw metallurgical laboratory results are peer reviewed, and double checked through redundant analysis techniques.

Reconciliations are used to verify that greenfield projects such as the Property, have the correct techniques used to develop predictions for existing process flowsheets and any adjustments can be applied. Where new flowsheets are employed, pilot scale test work is conducted on actual bulk samples to confirm the techniques and settings used to generate predictions.

In the opinion of the QP, the processing and recovery methods data used to inform product predictions are adequate for the purposes used for this TRS.

10 Mineral processing and metallurgical testing

10.1 Nature and extent of mineral processing and metallurgical testing

Samples for metallurgical and material handling test work were composited (in 2021) from Ouéléba and Pic de Fon drill core. A bulk sample for pilot testing of crushing and screening from near surface ore at Ouéléba was tested in 2022. This sample (of approximately 30 t) was used to confirm and inform the engineering design for the crushing and material handling operation at the Project.

10.2 Spatial representativity of metallurgical sampling

A total of 549 intervals from over 95 holes were selected to be representative of the average LOM product characteristics chemically, mineralogically, and spatially both for Ouéléba and Pic de Fon blast furnace (BF) and direct reduction (DR) product specifications.

10.2.1 Types of test work

Laboratory scale tests were performed to determine characteristics necessary to design the crushing and screening process and material handling equipment according to Table 10-1.

Pic de Fon material will undergo future testing prior to the commencement of the pre-feasibility study for the deposit.

Table 10-1: Types of metallurgical and mineral processing test work used in characterisation of Simfer iron ore

Ore type	Test type	Intended use of test work	Laboratories or other providers
Ouéleba BF and DR	Crushability – unconfined compressive strength, crushing work index, bond abrasion index, size distribution	Design and selection of crushing equipment for comminution of ore from run of mine (ROM) to product sizing	SGS, MMD Canada, Rio Tinto Iron Ore Metallurgical Evaluation Facility
Ouéleba BF and DR	Dust extinction moisture	Prediction of propensity to generate dust during handling and transport	The University of Newcastle Research Association (TUNRA) Bulk Solids – Jenike & Johanson
Ouéleba BF and DR	Materials handling characteristics, flow indexes, angle of repose, angle of surcharge, angle of drawdown, wall friction angle, chute angle, stable rathole diameter, bulk density	Design of bins, transfer chutes, conveyors, and stockyards.	Jenike & Johanson Ltd.
Ouéleba BF and DR	Sintering and pelletising	Evaluation of the performance of iron ore to be sintered or pelletised for the blast furnace or direct reduction process.	School of Minerals Processing and Bioengineering Central South University (CSU)
Ouéleba BF and DR	TML (transportable moisture limit)	Measure the transportable moisture limit	Alfred H Knight Consultancy Limited



10.3 Details of analytical or testing laboratories

Details of the internal and external laboratories or other testing facilities used by Rio Tinto to characterise iron ore within the Property are listed in Table 10-2.

Table 10-2: Details of analytical or testing laboratories

Laboratory	Location	Relationship to Rio Tinto	Certification	Certifying organisation
The University of Newcastle Research Associates (TUNRA) – Bulk Handling	Newcastle, New South Wales, Australia	Independent facility	ISO:9001 ISO:14001 ISO 45001	International Organization for Standardization (ISO)
Rio Tinto Iron Ore Metallurgical Evaluation Facility	Dampier, Western Australia	Internal test facility	None	Not applicable
Jenike & Johanson Ltd.	Ontario, Canada	Independent facility	None	Not applicable
Alfred H Knight Consultancy Limited	Prescot, United Kingdom	Independent facility	ISO/IEC 17025 ISO 9001	International Organization for Standardization (ISO)
School of Minerals Processing and Bioengineering Central South University (CSU)	Changsha Hunan, China	Independent facility	None	Not applicable
MMD Canada	Edmonton, Canada	Sizer Supplier	ISO:9001	International Organization for Standardization (ISO)

10.4 Predictions and assumptions in mineral processing

The process route from the ROM to the crushing plant to produce ore from Ouéléba is forecast as follows:

- Ouéléba crushing facility has two crushing plants each consisting of primary and secondary crushing stages. Crushing will be achieved by mineral sizers and will produce coarse ore at a top size of 125 mm in all operating scenarios.
- Crushed coarse ore will be stacked in nine stockpiles. Stockpiled ore will be reclaimed by one of two reclaimers which each feed a conveyor system to transfer coarse ore to a train load-out (TLO) facility.
- The quality of the product is based on the particle size distribution and the chemical characteristics, including the moisture content.
- The coarse ore will be transported by ship to an overseas port facility where oversize of the screen (+12 mm) is processed through tertiary crushing and undersize (-12 mm) discharges onto a screen undersize conveyor followed by a final product conveyor to be transferred to a dedicated final ore stockpile.

A bulk sample for pilot testing of crushing and screening from near surface ore at Ouéléba was tested in 2022. The test results support the mineral processing as presented in Figure 10-1 and Table 10-3.

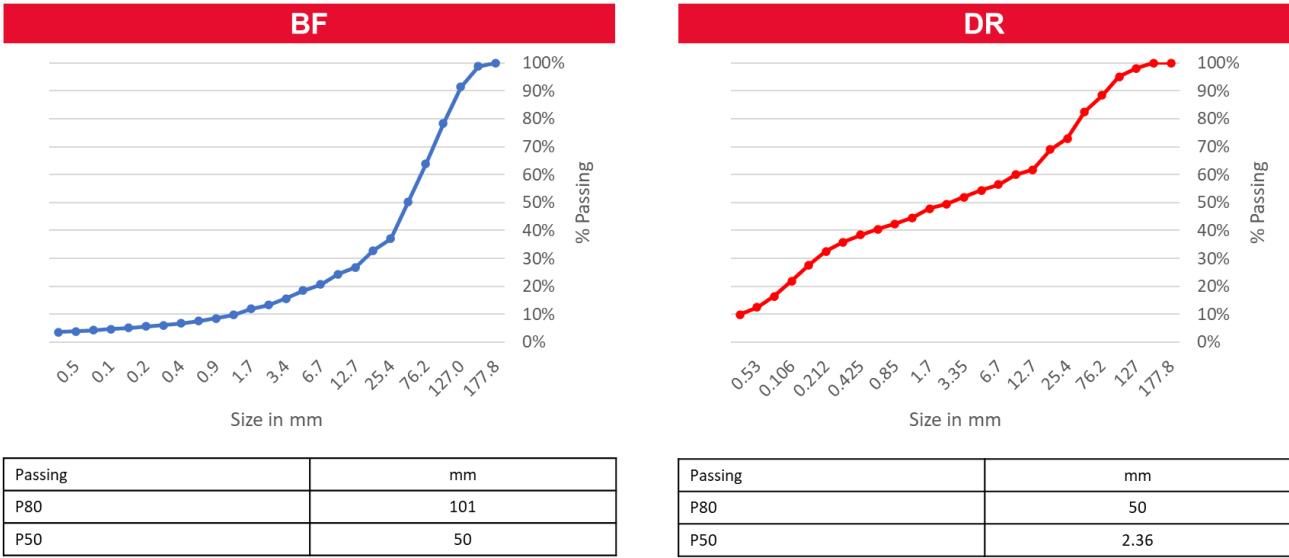


Figure 10-1: BF and DR bulk sample weighted average of particle size distributions after sizing test work

Table 10-3: Details of chemical quality of BF and DR bulk sample

Sample ID	Fe %	SiO ₂ %	Al ₂ O ₃ %	TiO ₂ %	P %	LOI %	Sum %
BF bulk sample	64.46	0.35	2.46	0.093	0.090	5.19	100.5
DR bulk sample	67.11	1.32	1.21	0.040	0.070	2.76	101.5

10.5 QP’s opinion on adequacy of the mineral processing and metallurgical data collected

In the opinion of the QP, the data detailed above is adequate for design of processing facilities and provides suitable product grade predictions for use in production schedules in this TRS.



11 Mineral Resources estimates

11.1 Key assumptions, parameters, and methods

Mineral Resources estimates have been developed and reported as in situ Mineral Resources for Ouéléba and Pic de Fon deposits.

11.1.1 Resource database

All drilling data used in estimates of Mineral Resources is securely stored and validated as described in Section 9.1.

11.1.2 Geological interpretation

Overall, the QP's confidence in the geological interpretation of the area is good, based on the quantity and quality of data available and the continuity and nature of the mineralisation.

Geological interpretation was completed by Rio Tinto and Golder. The method involved the use of surface geological mapping, surface structural measurements, downhole televiewer structural measurements, lithological logging data, assay data, and downhole geophysical data.

The interpretations have evolved from 2007 to present, moving from sectional interpretations that were linked into 3D wireframes, to the development of 3D wireframes using Leapfrog™ software.

The following itabirite related domains are used for the Ouéléba Mineral Resources: Laterite (LAT), Carapace (CAP), Transitional Mineralisation (TRN), Friable Hematite Goethite Mineralisation (HGF), Friable Hematite Mineralisation (HEF), Friable Enriched Itabirite (IRF), Friable Poor Itabirite (IPF) and Compact Poor Itabirite (IPC). Near surface Canga (CAN) deposits are modelled using surface mapping.

The following itabirite related domains are used for the Pic de Fon Mineral Resources: Compact Poor Itabirite (IPC), Friable Poor Itabirite (IPF), Friable Enriched Itabirite (IRF), Friable Hematite (HEF), Transitional Mineralisation (TRN), Compact Hard Hematite (HEC) and Weathered Hematite (WEA).

Phyllite domains have been interpreted at both deposits and include: Very Weak Phyllite (PHV), Soil Strength Phyllite (PHS), Weak Phyllite (PHW) and Compact Pyritic Phyllite (PHC). In addition, Weak Quartzite (QTW), Compact Quartzite (QTC) and Undifferentiated Basement (BAS) units are interpreted at Ouéléba (Rio Tinto 2023). Grade estimation uses the interpreted geology as hard boundaries.

Measured Mineral Resources are only supported in the HEF and HGF domains.

The effects of alternative geological interpretations have not been assessed.

11.1.3 Data preparation

A histogram of sample lengths was constructed to assess the differences in sample lengths. Samples have been collected at predominantly 2 m lengths, with approximately 1% of samples possessing a length other than 2 m. These sample length variations are the results of sampling across a geological contact. With the minor variation in sample lengths, "straight" compositing was used, which leaves the sample unchanged, to generate the sample coordinates.

11.1.4 Exploratory data analysis

The sample data were coded on the geological model and exploratory data analysis focused primarily on the high grade domains given these domains are the focus for exploitation.

Univariate statistics

WSP carried out univariate statistical analyses of grade variables which showed Na₂O is the only variable with a significant number of missing values, which can lead to unpopulated blocks for this grade variable within an estimated domain.



There were no “below detection limit” values present in the dataset used for estimation. During raw data import, data below detection limit is imported and stored in the database. For export, data below detection limit is modified to half detection limit.

All Fe values range between 0.2% and 70% Fe, and LOI is the only variable possessing negative values as expected.

Declustering of samples was completed using Golder software on the complete dataset, using a 140 m declustering distance, and a Z (vertical) factor of 5. Analysis of Fe grade did not highlight a particular inflection point; hence the average distance of the LOM drilling grid was used for declustering.

The statistical values conform well to modelled domains, and the coefficient of variation (COV) values are usually below two, which indicates robust domaining. Cases where the COV can become high is typically in secondary deleterious elements as illustrated by K_2O , which was not used for domain definition (Golder 2021). Histograms of grade variables were constructed for high grade domains. The histograms have expected distribution shapes, with Fe being negatively skewed, whilst other variables are positively skewed.

Histograms of Fe grades within the HGF domain show very low levels of dispersion for some of the deleterious elements, when compared to a domain with lower grades such as the CAP domain.

Multivariate statistics and scatterplots

WSP conducted multivariate statistical analyses for the major elements within the high grade domains.

Both Al_2O_3 and SiO_2 have strong negative correlations with Fe in the HGF, HEF and TRN domains, while Al_2O_3 and SiO_2 have a strong correlation with one another. Within the CAP domain, Al_2O_3 has a strong negative correlation with Fe and a moderate negative correlation with SiO_2 , while the inverse applies for the IRF domain. In most cases, P exhibits a weak to very weak correlation with all other grade variables.

Contact analysis

Contact analysis was completed to assess the viability of combining domains for spatial analysis and grade estimation. This was completed comparing the major elements amongst the high grade domains.

Generally, certain grades may trend towards a similar value close to the boundary, but in this case, there was always at least one grade variable which was incompatible. It was therefore decided not to combine data for any of the high grade domains for variogram modelling and grade estimation and not to use soft boundaries during estimation where separate variograms are modelled but samples can influence estimated values across domain boundaries.

For low grade domains, a soft boundary approach was implemented for the QTW/QTC, and the IPF/IPC domains, where the data was combined for spatial analysis and grade estimation. The limited number of QTW/QTC samples, and the similar IPF/IPC Fe grades were the main considerations in the decision to combine these domains.

Outlier values

High grade Mn, and S outlier values were identified within the dataset. Single grade values should not simply be reduced within a multivariate dataset since this will distort the total oxide content of the sample. It was therefore decided to conduct local block estimates with blocks that contain the outlier sample, and to exclude the sample for estimating any surrounding blocks.

This was implemented for the IRF, HGF and TRN domains at a 0.75% Mn cut-off. It was decided not to implement any constraining of high grade S values. High S grades have safety implications and using the high grade values would likely result in overestimation of S content, which was viewed as a more favourable outcome.

11.1.5 Internal dilution

Internal dilution zones were identified during the 2012 and 2021 model development. These are small zones with geological logging different from the local geological domain. An example would be to have an isolated section of drilling logged as IRF within the HGF zone. Modelling a small pod of IRF within the HGF domain



can be challenging, even though this would be acceptable within the geological framework. During construction of the 2021 geological model, these non-conforming intervals were flagged as internal dilution intervals.

This was addressed by modelling an internal dilution zone only within the HGF domain. This was used to constrain the influence of the internal dilution composites during grade estimation to the immediate area. The modelling process consists of using the flagged intervals to establish high dilution zones. All samples within these zones were then grouped into a high dilution subset/sub-group.

An inverse distance weighted (IDW) power 2 estimate of indicator values was used for estimation of indicator values. Modelling was performed within a block model with 10 m x 10 m x 4 m blocks, which was viewed as a suitable trade-off between a high -resolution model, and the block model file size.

A block was only considered during modelling if there was a sample within 40 m, or if there were two indicator samples within a 140 m search radius. This was necessary to ensure that zones in sparsely sample areas were not over -extrapolated.

The IDW estimate of the internal dilution indicator value was completed using the following parameters:

- Elliptical search neighbourhood of 160 m x 160 m x 25 m.
- A minimum of 5 samples.
- A maximum of 40 samples.
- Vertical (Z) anisotropy (weight scaling) of 5.

A cut-off of 50% (based on the estimated indicator values) was used to identify internal dilution zones, and the samples inside this zone were highlighted and added to the dilution sub-group.

11.1.6 Data reconciliation

A data reconciliation between the current dataset (Dataset 3) and previous datasets (Dataset 1 and 2) was completed to give an indication of the differences associated with new drilling data when compared to the previous 2012 model update.

From Datasets 1 and 2, to Dataset 3, Fe grades remained consistent however some other variables displayed significant changes in grade i.e., Al_2O_3 and SiO_2 . When compared with spatial distribution of new data this indicated and supported locally higher deleterious grade profiles.

11.1.7 Bulk density

A total of 3,844 density samples (1,918 from Ouéléba, and 1,966 from Pic de Fon) have been selected from 146 diamond drill holes since 2007. The domains represented by the density samples are similar in representation to the resource drilling data domains.

The density data was statistically analysed to determine an average bulk dry density value to be used for each geological domain used in the resource model. Itabirite bulk dry density values range from 2.8 to 3.3 t/m³. Phyllite bulk dry density values range from 1.7 to 2.4 t/m³.

11.1.8 Block models

Output volume wireframes for each of the lithologies and domains were exported from Leapfrog™ and used to construct a Vulcan™ block model, and to flag samples in the assay table of the resource database.

The Ouéléba block model parent cell size was 30 m x 30 m by x m, with a minimum sub-cell size of 5 m x 5 m x 2 m, and the Pic de Fon block model cell size was 60 m x 60 m x 12 m, with a minimum sub-cell size of 10 m x 10 m x 2 m. The parent block sizes in the horizontal plane are approximately half the drill spacing at each deposit. The block heights correspond to the proposed selective mining flitch heights for each deposit.

11.1.9 Grade interpolation parameters

For Ouéléba, Kriging Neighbourhood Analysis (KNA) was completed to determine appropriate parameters for block size, discretisation and numbers of samples. The minimum number of samples was set to 6 and the



maximum number of samples to 24, with a limit of 9 samples per drill hole. Three increasing search volumes were used for grade estimation. The primary search ranges used were 375 m by 86 m by 75 m for Ouéléba.

For Pic de Fon, KNA was completed to determine appropriate parameters for block size, discretisation and numbers of samples. The minimum number of samples was set to 6 and the maximum number of samples to 20, with a limit of 5 samples per drill hole. Three increasing search volumes were used for grade estimation. The primary search ranges used were 180 m by 120 m by 60 m.

11.1.10 Grade estimation

Grade estimation was conducted for Fe, SiO₂, Al₂O₃, P, CaO, K₂O, Total LOI, MgO, Mn, Na₂O, S, and TiO₂ using ordinary kriging into parent cells, with a mean density value applied to each domain.

Golder proprietary software was used for Ouéléba grade estimation, and for Pic de Fon grade estimation Vulcan™ software was used.

Hard boundaries were applied to the high grade geology domains. Internal dilution was modelled and estimated as a separate sub-domain of the HGF domain.

A 'high yield limit', or grade -dependent restriction on a sample's range of influence, was used in estimating manganese block grades in the TRN, HGF, and QTW domains.

Recovery factors have not been applied to the Mineral Resources models. Recovery and dilution are incorporated during construction of the Mineral Reserves model.

11.1.11 Model validation

Grade estimation was validated using:

- Visual comparisons between composited drill hole data, and block grades.
- Statistical comparison of declustered composited drill hole global mean grades, and block grades.
- Swath plots to compare composited drill hole and block model mean grades in northing, easting, and elevation slices.

No mining has occurred that will allow reconciliation of actual and predicted data.

Visual comparisons

Visual validation considered sectional and 3D review of the model compared to the input drill holes in long -section, cross section, and plan; focused on primary variables estimated (Fe, SiO₂, Al₂O₃, P, and LOI). The visual validation showed a reasonable correlation between the block estimates and the input data.

Statistical comparison

Estimates were validated by comparing the mean estimated block grade with declustered sample statistics.

Any instance where the mean estimated value deviated by more than 5% from the declustered sample mean was investigated.

It was often found that the generic declustering window was insufficient to cater for the overall grade change encountered by some grade variables during grade estimation. Increasing the declustering window showed the declustering grade trending towards the mean estimated value.

Modelling internal dilution zones within the HGF domain that was estimated using one-way soft boundaries also caused estimates of some grade variables to reflect mean grade deviation by more than 5% from sample data. A similar situation was encountered within Mn, where high values were restricted to the immediate block.

Swath plots

Swath plots were constructed along the Y direction comparing the ordinary kriged block grades with an IDW estimate and the input sample grades.



The block and sample values were averaged into 120 m x 120 m x 24 m panels. The panels were then combined into strips to calculate average values align the Y direction. Only panels with block and sample values were considered.

The swath plots showed that the ordinary kriging estimated grade profile generally follows the sample trend where there is sufficient sample support. In areas where there is a separation of the curves, the ordinary kriging estimate is supported by the IDW estimates. This indicates that the difference between the sample and the estimation profile is due to the spatial arrangement of the samples. The estimation curves can become erratic in areas with a low sample density such as in the north of the Ouéléba deposit.

11.2 Mineral Resources classification

According to SK-1300, to reflect geological confidence, Mineral Resources are sub-divided into the following categories based on increased geological confidence: Inferred, Indicated and Measured, which are defined under SK-1300 as:

“Inferred Mineral Resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project and may not be converted to Mineral Reserves.”

“Indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.”

“Measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in this section, in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.”

Mineral Resources are classified in accordance with the above guidance and in consideration of other relevant factors including, but not limited to, data quality downhole survey risk, kriging variance, grade extrapolation of blocks estimated in the third search pass, blocks estimated with low numbers of samples, and areas visually identified by coordinate extents as being of lower confidence. Specifications pre final review are detailed in Table 11-1.



Table 11-1: Criteria used for Mineral Resources classification

Classification	Drill spacing	Estimation slope of regression	Geological	Other
Measured	62.5 m sections by 62.5 m (max 70 m from drillhole)	> 0.6	More than 1 hole on section and good continuity between sections	HGF and HEF zones
Indicated	125 m sections by 62.5 m (max 120 m from drillhole)	0.6 -0.4	More than 1 hole on section and good continuity between sections	First or second pass
Inferred	200-400 m sections by 200 m (max 220 m from drillhole)	> 0.1	1 hole on section and limited continuity between sections	North of 958700 and no mapping
Unclassified	Greater than 220 m from drill holes	< 0.1		Canga

Measured Mineral Resources are only supported in the HEF and HGF domains.

A significant number of drill holes (103) at Ouéléba did not possess any downhole deviation survey. However, this issue was not considered to pose significant positional uncertainty to impact classification. Many of these drill holes are short and the longer drill holes are spread throughout the deposit, with adjacent drill holes not displaying significant deviation.

No areas at Pic de Fon were considered to be significantly affected by downhole survey risk to require a downgrade in resource classification.

The distance to nearest samples used for block grade estimation was determined for Inferred Mineral Resources to define areas of extrapolation. Block grades that were estimated using samples greater than 125 m are considered to be the result of grade extrapolation. Extrapolated block grades represent 12% of the Inferred Mineral Resources tonnage for Ouéléba, and 14% of the Inferred Mineral Resources tonnage for Pic de Fon.

The QP considers the grade estimation and validation appropriate for Mineral Resources estimation. The current model is simplistic in internal geology, with the project carrying some risks in terms of tonnes, grade, geotechnical and water. These risks are reflected in the classification and will need to be managed and mitigated in operations.

11.3 Mineral Resources estimate

The basis of the Property's Mineral Resources estimate and how it is generated are summarised below. The Mineral Resources estimate for the Property is reported herein in accordance with the requirements detailed in SK-1300. For estimating the Mineral Resources, the following definition of Mineral Resources as set forth in SK-1300 is applied:

"Mineral resource is a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction. A mineral resource is a reasonable estimate of mineralisation, taking into account relevant factors such as cut-off grade, likely mining dimensions, location or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralisation drilled or sampled."

The Mineral Resources estimate is based on the following assumptions:

- Exclusive – Mineral Resources are reported exclusive of Mineral Reserves.
- Moisture – All Mineral Resources tonnages are estimated and reported on a dry basis.
- Mineral Resources are provided as in situ estimates.



- Mining factors or assumptions – Open pit load and haul mining operations will be used for the mining of Mineral Resources ore at Ouéléba and Pic de Fon.
- Metallurgical factors or assumptions – It is assumed that crushing, and material handling processes used for Ouéléba will be applicable for the processing of Mineral Resources from Pic de Fon.
- Environmental factors or assumptions – Extensive environmental studies and surveys will be completed during the Project study phases.

Mineral Resources exclusive of Mineral Reserves for the Ouéléba and Pic de Fon deposits are detailed in Table 11-2 on a Rio Tinto ownership basis. The effective date of the Mineral Resources estimate is 31 December 2023.

Table 11-2: Simandou Mineral Resources exclusive of Mineral Reserves (dry basis) (Simfer Iron Ore Project) as at 31 December 2023

	Likely mining method ²	Measured Mineral Resources as at 31 December 2023						Indicated Mineral Resources as at 31 December 2023						
		Tonnage	Grade (%)					Tonnage	Grade (%)					
Iron ore ³		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	
Simandou (Guinea) ⁴	O/P	66	67.1	1.9	1.1	0.04	1.0	198	66.2	1.8	1.5	0.05	1.8	
Total Measured and Indicated Mineral Resources as at 31 December 2023							Inferred Mineral Resources as at 31 December 2023						Rio Tinto Interest %	
		Tonnage	Grade (%)					Tonnage	Grade (%)					
Iron ore ³		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	
Simandou (Guinea) ⁴		264	66.5	1.8	1.4	0.05	1.6	340	65.8	1.4	1.4	0.07	2.8	45.05

(1) Mineral Resources are presented for the portion attributable to Rio Tinto's economic interest. All tonnes and quality information have been rounded, small differences may be present in totals.

(2) Likely mining method: O/P = open pit.

(3) Mineral Resources of iron ore are stated on a dry in situ weight basis and reported exclusive of Mineral Reserves.

(4) Mineral Resources valuations are based on specific product pricing determined from a 65% Fe Fines price of US c 136.10 / dmtu CFR (Iron ore pricing that includes cost of freight and insurance) China. This price is sourced from an average of forecasts from CRU (CRU group – commodity market analysts) and Wood Mackenzie.

11.4 Cut-off grade, price, and justification

Mineral Resources were reported using a cut-off of Fe $\geq 58\%$ and SiO₂ + Al₂O₃ $\leq 8\%$ and P $\leq 0.25\%$. A cut-off grade using a combined Al₂O₃ and SiO₂ was determined by grade tonnage curves to be representative of the material to be mined and crushed for transportation to customers.

Mineral Resources valuations are based on specific product pricing determined from a 65% Fe Fines price of US c 136.10 / dmtu CFR (Iron ore pricing that includes cost of freight and insurance) China. This price is sourced from an average of forecasts from CRU (CRU group – commodity market analysts) and Wood Mackenzie, based on Q3 2023 forecasts.

Reasonable prospects for economic extraction have been assessed through mining and processing studies at Ouéléba and a study at Pic de Fon. The establishment of an economic pit-shell indicates conventional open pit mining and processing routes would be appropriate in the exploitation of the deposits. Reported Inferred, Indicated and Measured Mineral Resources have been constrained within an optimised pit shell using Rio Tinto forward looking price assumptions, potential processing routes and recoveries.

Additional mineralised material outside of the pit shell is not currently reported as Mineral Resources, but studies are ongoing to determine under what conditions the additional mineralisation may be considered economic.

11.5 Uncertainty in the estimates of Inferred, Indicated, and Measured Mineral Resources

The QPs are satisfied that the stated Mineral Resources classification reflects the appropriate level of confidence and takes into consideration relevant factors of the deposits. The application of resource categories appropriately considers the relevant factors used in the classification process.



Some examples of specific factors that can influence the risk and uncertainty of the Mineral Resources estimates that are considered in the resource classification include:

- Interpretation of the mineralisation boundary. Areas of complex or discontinuous mineralisation is typically assigned one category lower than the main mineralisation.
- Drill hole spacing and adequacy in defining geology, mineralisation, structure, and grade.
- Quality of samples, assays, and geological information.
- Domains or regions within domains where grades are more variable are typically assigned lower levels of resource classification.

The Mineral Resources have addressed reasonable prospects of economic extraction and have considered a range of mining, metallurgical and environmental factors.

Mineral Resources confidence is also assessed via independent reviews and internal peer reviews conducted at key stages of the Mineral Resources estimation process with no material issues identified.

The Mineral Resources presented are not Mineral Reserves, and do not reflect demonstrated economic viability. The level of geological uncertainty associated with the reported Inferred Mineral Resources is considered too speculative to apply relevant economic, and technical factors to have the economic considerations applied that would enable these to be categorised as Mineral Reserves. There is no certainty that all or any part of the Inferred Mineral Resources will be converted into Mineral Reserves. All figures are rounded to reflect the relative accuracy of the estimates and totals may not sum exactly as a consequence.

11.6 QP's opinion on factors likely to influence the prospect of economic extraction

The main factors likely to influence the prospect of economic extraction include:

- Commodity pricing.
- Interpretations of fault geometries.
- Pit slope angles.
- Dilution considerations.

The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues including risks set forth in this TRS.

In the QP's opinion, all of these factors are adequately considered for the Mineral Resources reported. Based on the body of technical studies completed across the Property, it is the QP's opinion that all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved and the Mineral Resources therefore have reasonable prospects of economic extraction.



12 Mineral Reserves estimates

A Mineral Reserves estimate has only been reported for the Ouéléba deposit. The Pic de Fon deposit will be included in a future pre-feasibility study after completion of further geological drilling and subsequent updating of the Mineral Resources model for the deposit.

12.1 Key assumptions, parameters, and methods

The Ouéléba resource block model developed for the Mineral Resources reporting for Ouéléba forms the basis of the Mineral Reserves estimates. The resource block model (outlined in Section 11) was extended to create a mining block model by:

- Undergoing regularisation to a selective mining unit, with dilution and recovery from the regularisation taken into consideration. To accommodate the scale of mining and ensure sufficient operational space for the 400 t / 600 t hydraulic excavators conducting the digging within the benches, the mining operation adopted a selective mining unit measuring 20 m wide by 40 m long with 6 m vertical flitches. Mining of the 12 m bench will involve the excavation of two separate 6 m flitches (two-pass flitches). The excavators will be configured in a backhoe configuration, allowing for selectivity between ore types at ore domain boundaries within the bench.
- Addition of approved pit designs and stages.
- Identification of ore and waste zones by applying cut-off criteria for Fe, P, and $\text{SiO}_2 + \text{Al}_2\text{O}_3$.
- Inclusion of water table horizon to support scheduling.
- Assigning of geotechnical domains, berm widths, and batter angles to assist in the pit optimisation pit shell identification.
- Product predictions for possible processing streams are applied.

12.2 Moisture

Geology models contain tonnage estimates on a dry in situ basis. All mining and scheduled tonnages are first estimated on a dry basis and a moisture allowance is then added for railing and shipping estimation purposes.

12.3 Metallurgical and processing recoveries

An allowance of 0.5% ore losses has been incorporated in the process recovery (crushing, stacking reclaiming and material handling), to allow for ore losses in the material handling process. The 0.5% percentage ore loss estimate applies to the exported product as losses incurred primarily during stacking and reclaiming and port handling and has been provided by Rio Tinto based upon experience at multiple direct shipping operations. As the ore mined will be DSO, there are no further processing losses included in the beneficiation process.

12.4 Methodology

A mining schedule that fully depletes the scheduling inventory for Ouéléba is used from the prepared mining block model. To demonstrate economic viability of the Mineral Reserves, economic modelling is completed using the MineMax Scheduler package. Material is only reported as Mineral Reserves if the level of geological certainty is sufficient to allow a QP to apply the modifying factors in sufficient detail to support detailed mine planning and economic viability of the deposit.

12.5 Modifying factors

Modifying factors are applied to mineralised material within the Measured and Indicated Resource classifications in the Mineral Resources to establish the economic viability of Mineral Reserves. The QP considered mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors that are applicable to the mining area within the Property.

Key modifying factors considered when converting Mineral Resources to Mineral Reserves include:

- Geotechnical parameters: A Geotechnical model was prepared for the Ouéléba deposit based on drilling, mapping and other data. This model formed the basis for slope stability analysis and development of pit design parameters to ensure pit walls meet an acceptable factor of safety.



- Surface water (hydrology) assessments: Hydrological modelling techniques are used to assess the potential impact of ephemeral water courses and flooding due to surface water runoff post rain events. Pit designs are either modified, or appropriate surface water control measures are included in the pit design.
- Groundwater (hydrogeology) assessments: In case of the Ouéléba orebody model that extends below the perched water table, a groundwater model was developed, accounting for geological assessments, drill holes, test pumping and monitoring bores. Groundwater models form the basis for assessing the technical feasibility of pit dewatering and are necessary for design of an adequate dewatering strategy, inclusive of location, number and capacity of dewatering bores within the pit wall.
- Pit designs are developed based on the geotechnical, hydrological and hydrogeological assessment, incorporating access and any other technical requirements. Only material contained inside a designed pit is converted to a Mineral Reserves.
- The mine design footprint and all access considerations with regard to the protected Pic de Fon Classified Forest, and in close proximity to identified protected species habitat in the Boyboya Forest areas, have been taken into account with the design of the Ouéléba pit design.

12.6 Cut-off grade estimate

Pit optimisations were completed using the Lerchs-Grossmann (LG) algorithm in Whittle 4XTM software to calculate the optimal pit at the specified input parameters. A wireframe pit shell for each iron ore price considered was the resultant output. The Revenue Factor 0.65 pit shell was selected as the base for the final LOM pit design. A pit of approximately 2.2 Bt of rock was selected as the final pit shell in that some 98% of the potential ore feed material was contained within the selected pit shell. Extending the revenue factor above the 0.65 value produced minimal additional ore relative to the increased amount of waste added to the total pit volume.

A set of designs have been created based on the pushbacks general phases and the final pit shell estimated in Whittle software at 60 Mtpa (ore) plant rate. The designs are appropriate for the feasibility study. A minimum mining width of 50 m has been considered except for some areas located at the bottom of the pits where a minimum mining width of 35 m has been used.

An estimated marginal cut-off grade was established at $\text{Fe} \geq 58\%$, $\text{SiO}_2 + \text{Al}_2\text{O}_3 \leq 8\%$, and $\text{P} \leq 0.25\%$ based upon the sales of a DSO iron ore product. The economic viability of the reported Mineral Reserves is assessed by generating a production schedule that fully consumes the Mineral Reserves with all other material treated as non-revenue generating. Ensuring that a positive NPV is achieved using specific economic assumptions for costs and revenues. Further details on price, costs, and time disclosure are provided in Section 19 of this TRS.

12.7 Mineral Reserves estimate

The Mineral Reserves for the Property are presented by area in Table 12-1. The effective date of the Mineral Reserves estimate is 31 December 2023.

Mineral Reserves are reported as the economically mineable portion of Measured and/or Indicated Resources after consideration of modifying factors. Measured Resources could be reported as Proven Reserves, but uncertainty in one or more modifying factor may result in them being classified as Probable Reserves. Indicated Resources are reported as Probable Reserves in order to reflect the level of confidence in the Mineral Resources estimate. All stockpile Mineral Reserves are classified as Probable Reserves due to the inherent variability of stockpiled material.

Mineral Reserves are stated as dry tonnes, excluding moisture content, on a Rio Tinto ownership basis. The only payable element is Fe. All figures are rounded to reflect the relative accuracy of the estimates and rounded subtotals may not add to the stated total.

The Mineral Reserves were estimated for the Ouéléba deposit within the Property under the supervision of the QP. The Mineral Reserves are based on a feasibility study for the mine plan and mine design including schedule covering the life of mine within the Ouéléba deposit. Some aspects require additional work prior to commencement of operation, these factors are at a minimum of pre-feasibility study. The total Proven and Probable Mineral Reserves are estimated at 675 Mt at 65.3% Fe, 0.9% SiO_2 , 1.7% Al_2O_3 and 0.09% P product. Of this total, 82% of the product is within the Probable Mineral Reserves category.



There are currently no Mineral Reserves reported at Pic de Fon. Table 12-1 shows the Mineral Reserves estimate for the Simandou project as at 31 December 2023 on a Rio Tinto ownership basis.

Table 12-1: Simandou Mineral Reserves (Simfer Iron Ore Project) as at 31 December 2023

	Type of mine ²	Proven Mineral Reserves as at December 31 2023						Probable Mineral Reserves as at December 31 2023					
		Tonnage	Grade (%)					Tonnage	Grade (%)				
Iron ore ³⁴		Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI
Simandou (Guinea) ⁵	O/P	123	66.4	1.0	1.2	0.07	2.5	552	65.0	0.9	1.8	0.10	3.9

Total Ore Reserves as at December 31 2023							Rio Tinto Interest	Rio Tinto Share Marketable product
	Tonnage	Grade (%)						
Iron ore ³⁴	Mt	Fe	SiO ₂	Al ₂ O ₃	P	LOI	%	Mt
Simandou (Guinea) ⁵	675	65.3	0.9	1.7	0.09	3.6	45.05	675

(1) Mineral Reserves are being reported for the first time in accordance with SK-1300 and are presented for the portion attributable to Rio Tinto's economic interest. All tonnes and quality information have been rounded, small differences may be present in totals.

(2) Type of mine: O/P = open pit.

(3) Mineral Reserves of iron ore are reported on a dry weight basis and shown as recoverable Mineral Reserves of marketable product after accounting for all mining and processing losses.

(4) Mineral Reserves are reported for the first time since 2016 relate to the Ouléba portion only of the Simfer Iron Ore Project.

(5) Mineral Reserves valuations are based on specific product pricing determined from a 65% Fe Fines price of US c 136.10 / dmtu CFR China. This price is sourced from an average of forecasts from CRU and Wood Mackenzie, based on Q3 2023.

(6) Cut-off Fe >=58%, SiO₂ + Al₂O₃ <= 8%, P <= 0.25%.

(7) Measured Mineral Resources classification within the final mine design has been converted to a Proven Mineral Reserves category, whilst the Indicated Mineral Resources material within the final mine design has been converted to a Probable Mineral Reserves.

12.8 QP's opinion on risk factors that may materially affect the Mineral Reserves estimates

Mineral Reserves estimates are reviewed annually or when new information becomes available that may impact the respective modifying factors. The main factors which could materially affect the Mineral Reserves estimate include:

- Commodity pricing.
- Interpretations of fault geometries.
- Pit slope angles.
- Dilution considerations.
- Ore selectivity and ore boundary definition.
- Impact of Currency exchange rates on production costs

The estimate of underlying Mineral Resources may be materially affected by environmental, permitting, legal, title, socio-political, marketing, or other relevant issues including risks set forth in this TRS.

In the QP's opinion, all of these risk factors are adequately considered for the Mineral Reserves reported and the QP is not aware of other risk factors that may materially affect the Mineral Reserves estimate. Based on the body of technical studies completed across the Property, it is the QP's opinion that the Mineral Reserves estimates are appropriate for the project.



13 Mining methods

13.1 Introduction

The Ouéléba deposit will be mined as a conventional large scale open pit mine. The mine plan is based on producing a single product for the first five years and subsequently two DSO products, BF and DR. Those two products will be crushed to <125 mm. The DSO products have no other processing requirements other than moisture management.

Mineralised rock unsuitable as DSO (e.g., outside of deleterious grade limits) and waste rock will initially be trucked to waste rock storage facilities external to the open pit and stored to allow the recovery of the mineralised material if future additional processing and beneficiation is economically viable. As the mine develops and pit voids are depleted, the voids will be used as short haul destinations for backfilling with waste rock. This will allow the mine haul fleet numbers to remain reasonably consistent over the life of mine.

13.2 Background

Mining of the Property has been planned at medium-selectivity using conventional open pit mining equipment, mining two 6 m high flitches within a 12 m high mining bench. The mining process will include drill and blast as well as conventional load and haul operations. There is expected to be a notable amount of free-dig material below the cap rock, with the majority of material assumed to require relatively modest amounts of drilling and blasting.

13.3 Mining model

The mining model was regularised from the geology Mineral Resources model to accommodate the scale of mining for the project with the vertical size deemed suitable to accommodate the selected class of mining equipment. The regularisation of the geology model to a 6 m vertical height supports the two 6 m flitch mining within the proposed 12 m bench height.

The Mineral Resources model for the Ouéléba deposit is a sub-celled model that models the ore domains down to a 5 m (E) x 5 m (N) x 2 m (Z) resolution, from a parent block size of 30 m x 30 m x 6 m. The sub-celled model was regularised to a 20 m (E) x 40 m (N) x 6 m (Z) mining block model to cater for mining estimation. The selected regularised size has been adopted to adequately support the anticipated selectivity available from the 400 t/600 t class hydraulic excavator in backhoe configuration. The re-blocking process effectively incorporates the expected ore loss and dilution that would be encountered at that scale of mining.

The mining model includes a water table variable that indicates whether the rock is above or below the water table through the use of a numeric integer value in the block model. The water table horizon indicated in the block model was compared against the hydrogeological surface across the deposit and checked for horizon agreement at several points within the deposit. The hydrogeological data will continue to be updated during 2024 through information collected with the large-diameter Bauer water rig on site at the property and large-diameter pumping tests being carried out within the LOM pit limits. Section 7.4 describes the hydrogeological considerations.

13.4 Mining dilution and recovery factors

The Mineral Resources within the Measured plus Indicated categories meeting the cut-off criteria described in Section 12.6 were evaluated in both the geology (sub-celled) and the regularised mining model within the life of mine final pit design. The comparison showed an expected ore loss of 2%, with a 4.8% drop in grade.

An additional 0.5% product loss was incorporated within the scheduler to account for anticipated ore losses in the ex-pit transportation and material handling facilities as discussed in Section 12.3.

13.5 Geotechnical considerations

Rio Tinto's D3 management of slope geotechnical hazards standard (the D3 Standard) has been followed for geotechnical design for the Ouéléba deposit. It describes the requirements for geotechnical design and geotechnical hazard management that must be implemented to ensure conformance to the D3 Standard across the full life-cycle of the project from exploration to closure.

RioTinto

The Ouéléba deposit covers a geographically large area with varying ground conditions. A ground model with an understood degree of confidence plays a critical role in the design of optimised and stable pit slopes. Data is collected and analysed to create the ground model. This includes:

- Surface mapping.
- Orientated diamond drill holes.
- Downhole televiewer.
- Geology model.
- Hydrogeological model.

A degree of contingency is mandated in designs through a design acceptance criteria (DAC). The DAC were based on a 5 x 5 matrix, presented in Figure 13-1. This accounts for the levels of confidence (i.e., reliability) in the understanding of site conditions and material parameters, as well as the consequences of instability. If slope instability in a particular sector impacts critical infrastructure, it will be assigned a higher DAC than if that same instability were to impact non-critical infrastructure.

To inform the reliability level the following aspects are reviewed:

- Lithology model.
- Weathering mode.
- Structural model (major and fabric).
- Hydrogeological model.
- Intact strength.
- Strength of structural defects including foliation.
- Geotechnical characterisation.
- Geotechnical modelling approach.

The review found a range of factor of safety (FOS) from 1.35 to 1.5, with a DAC of 1.4 considered appropriate for all open pit slopes at the deposit.

Reliability	Descriptor	Consequence					Comments
		Very low	Low	Moderate	High	Very high	
1	Very low reliability	1.35	1.4	1.5	x	x	Limited knowledge
2	Low reliability	1.3	1.3	1.4	1.45	1.5	Reasonable knowledge - Bottom of LOP range
3	Moderate reliability	1.25	1.25	1.3	1.35	1.4	LOP approach Central case
4	High reliability	1.2	1.25	1.25	1.3	1.3	Top of LOP range
5	Very high reliability	1.15	1.2	1.2	1.25	1.25	Detailed knowledge

Figure 13-1: Design factor of safety against overall slope failure for Ouéléba

The stability assessment used the approach and software presented in Table 13-1.

Table 13-1: Overview of stability assessment approach and software

Pit slope scale	Approach	Software utilised
Bench	- Kinematic stability analyses 3D models - Modified Richie criteria (bench widths)	- Dips - Leapfrog - Excel
Inter-Ramp	3D fault/joint geometric intersections 3D models - Kinematic stability analyses (deterministic) - Limit Equilibrium stability analyses	- Leapfrog - Dips - Slide2 - Excel
Overall	- Limit Equilibrium stability analyses - Finite Element stability analyses (with explicit defect surfaces to mimic directional strength imparted by fabric)	- Leapfrog - Slide2 - RS2

Based on the geotechnical slope design process different pit slope wall configuration were assigned to different domains. A summary of the ranges of slope design recommendations is presented in Table 13-2.

Table 13-2: Slope design recommendations summary

Slope design recommendations	Unit	Value
Bench height	m	6 – 24
Minimum catch bench width	m	6 – 12
Bench face angle	°	55 – 70
Maximum inter-ramp slope height	m	36 – 72
Inter-ramp angle	°	27.7 – 49.2

13.6 Hydrogeological considerations

The Ouéléba deposit will be mined in a staged approach as described in Section 13.2; the progression from north to south has allowed for a slower vertical sink rate than would be required with fixed pushbacks. This reduced vertical sink rate extends the period for which mining will be undertaken above the perched water table. Mining below the water table horizon will require the inclusion of side-wall dewatering wells (horizontal drain-holes) as well as an extended pit drainage network. Standard specification for horizontal drain holes is 100 m long and spaced approximately 50 m between holes. The pit de-watering will be incorporated within the mining operations as the mining horizons approach the water table.

13.7 Mining fleet, machinery, and personnel requirements

Mining will be undertaken using a conventional truck and shovel operation with drilling and blasting required in the hard lithologies and free-dig operations in the soft lithologies within the deposit. The operation will utilise hydraulic excavators of the 400 t /600 t class in backhoe configuration to provide maximum selectivity potential within the 6 m flitches if required. The haul roads have been designed to safely run 220 t haul trucks from any of the major mining haul truck suppliers. Maximum haulage gradients of 10% are used throughout the mining operation for both primary and secondary fleets as recommended by equipment manufacturers.

The operation will require approximately 45 rigid body haul trucks of 220 t capacity, typified by the Cat' 793 class of haul truck. The load and haul fleet will be supported by a conventional fleet of support equipment including, track dozers, rubber tyred dozers, motor graders, blast hole drill rigs, grade control drill rigs, specialist dewatering drill rigs, and large front-end loaders to provide loading support and stockpile blending capabilities.

Personnel will be sourced locally from the neighbouring communities with specialist labour being sourced from within Guinea where available.

13.8 Scheduling process

The mining schedule was initially developed in the MineMax Scheduler software, a commercial application that targets the maximum NPV solution for a mining operation within a given set of constraint criteria. The strategic schedule resulting from the MineMax Scheduler selected final case was then further developed within the Alastri Tactical Scheduler software to provide the level of detail required for medium term mine planning.

The Alastri Tactical Scheduler provides detailed material movements and equipment requirements at a monthly level of detail, enabling the first five years of production for Ouéléba to accurately forecast product qualities, volumes and equipment requirements over the period.

13.9 Scheduling results

Over the approximate 26-year life of mine for Ouéléba, mining is expected to deliver some 1,499 Mt of DSO with an additional 788 Mt of waste rock being handled as either ex-pit dumped to purpose designed waste rock stockpiles or backfilled within the open pit final void as space permits. Backfilling of the final void within the northern portion of the Ouéléba pit is expected to be capable of commencing from production year 15 onwards. All future potential will be considered carefully prior to undertaking any active backfilling of the pit void.

After a three year ramp up period following the commencement of crushing and conveying load commissioning, the mine will operate at a sustained rate of 60 Mtpa export. Annual movement of ore and waste for the Ouéléba life of mine is shown Figure 13-2.

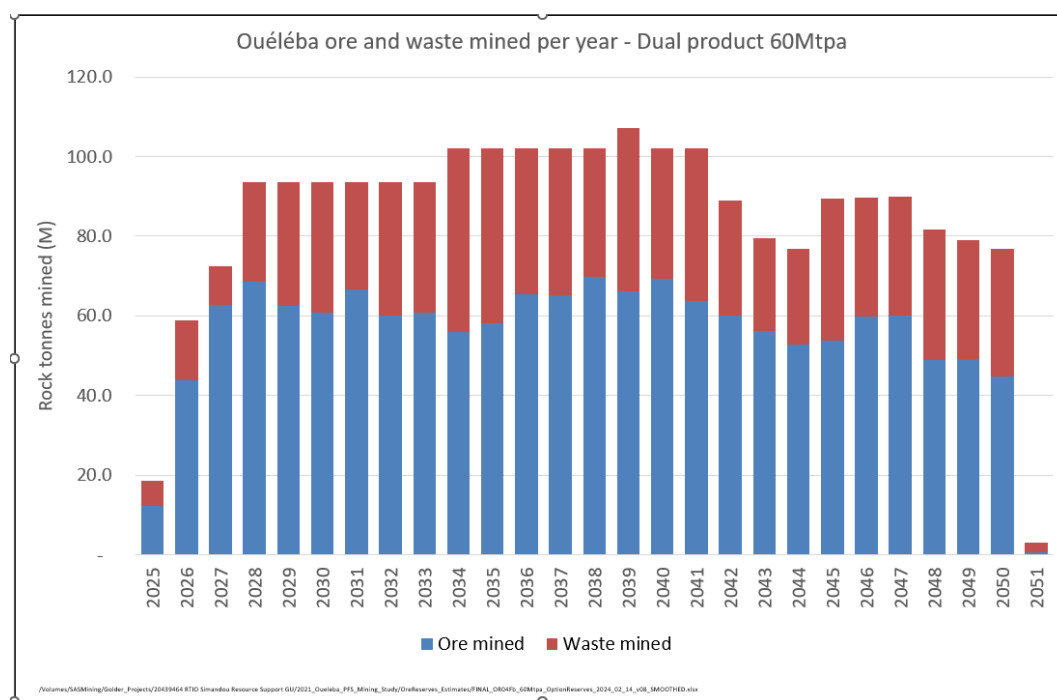


Figure 13-2: Ouéléba ore and waste movement over the LOM

The planned sales by ore type over the LOM is shown in Figure 13-3.

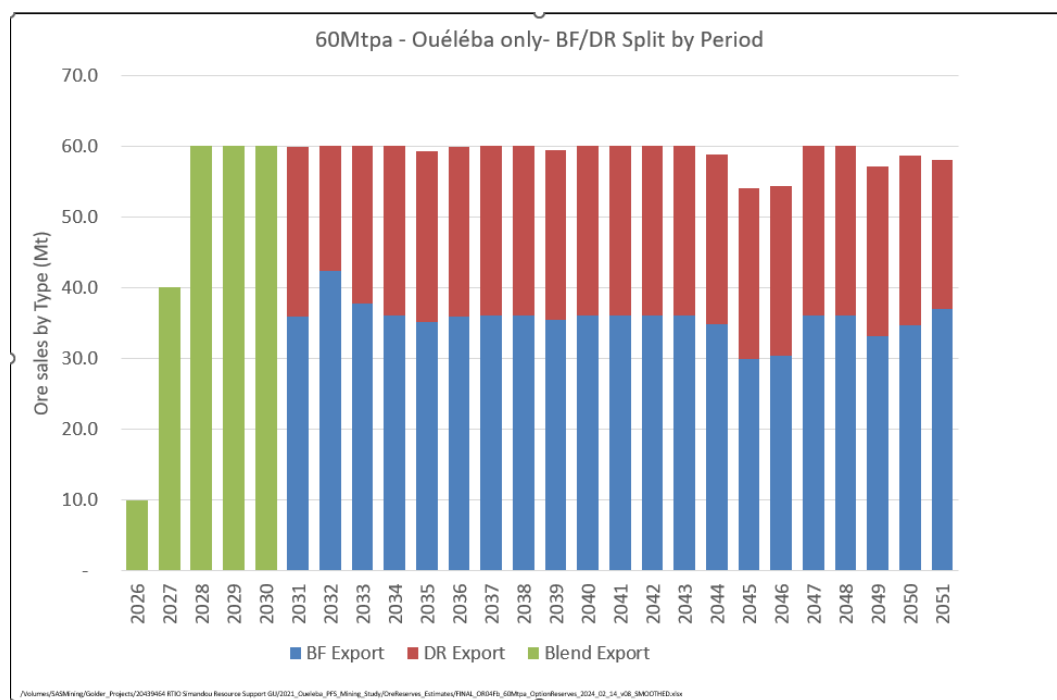


Figure 13-3: Ore export by product type for Ouéléba over the LOM

13.10 Mining unit dimensions

A minimum mining width of 50 m has been allowed other than in the base of the final pit where small areas have been allowed to be mined to a minimum of 35 m mining width. Mining will be undertaken on 12 m benches, mined as two 6 m flitches within each mining bench.

13.11 Open pit design

The Ouéléba ore body is best described as a mountainous deposit striking north-south some 8 km in length and approximately 1 km wide. The Ouéléba deposit presents as a flattened mountain region, the upper portion of the mountain will be mined from the peak elevation of some 1330 m Relative Level (RL) to a pit crest elevation of some 1080 m RL. The pit crest elevation being the elevation at which the ROM ore crushing facilities will be installed. The crushers will then feed the ore onto downhill conveyors which will convey the ore to the stacker/reclaimer facility. The stacker/reclaimer facility also incorporates the rapid train loadout for the transportation of the loaded rail wagons to the Port at Conakry.

The extent of the final pit including the location of the rail load out loop and position of the north and south waste rock facilities are shown in Figure 13-4.



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The maximum depth of the open pit below the pit crest is planned at some 300 m below the pit crest elevation, or 780 m RL. A cross section looking from west to east through the LOM pit is shown in Figure 13-5.

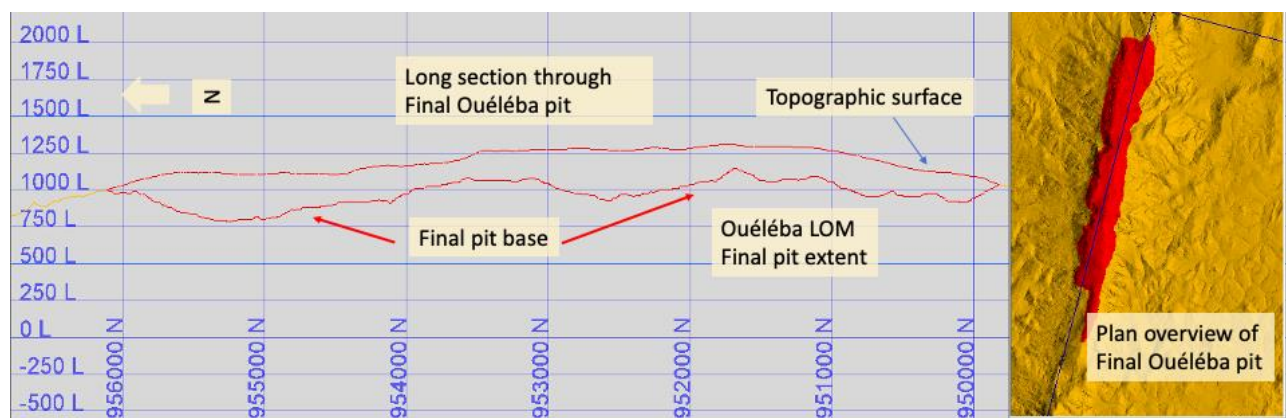


Figure 13-5: Long section through final Ouéléba pit design

14 Processing and recovery methods

14.1 Processing methodologies and flowsheets

The high grade ore is DSO, requiring no beneficiation other than crushing to create a high grade, low impurity product. The test work performed during previous study phases has been analysed to generate the design criteria for:

- The size reduction system.
- Selection and sizing of crushing equipment.
- Design of materials handling systems.
- Estimation of operating costs.

During 2022, pilot scale crushing tests were undertaken. The results from the crushing test work were then incorporated into the Process Design Criteria during 2023.

14.2 Processing plant throughput and characteristics

The configuration of the process plant has evolved during successive studies to provide flexibility to accommodate the expected range of feed size, material hardness and impurities to ensure consistency of product from variable feeds. Simandou ore is generally friable but has some more competent components which are of variable hardness and not present in a constant proportion to the friable material.

One of the main objectives of refining previous design work has been to reduce the capital cost of the processing facility while maintaining (or improving) its reliability, operability and maintainability. The approach adopted to achieve this has been to:

- Select proven, robust, efficient and cost-effective process plant modules from existing Rio Tinto operations.
- To optimise the -tie-ins and interactions between these modules.
- To reduce the footprint wherever possible.

All process changes made have been confirmed by discrete event simulation.

A summary of ore properties is provided below in Table 14-1.

Table 14-1: Summary of ore properties

Description/area	Unit	Value
Primary crushed material density (-350 mm) (volume, loose)	t/m ³	1.9
Above water table ROM	% H ₂ O	2.5
Below water table ROM	% H ₂ O	7.0
Dust Extinction Moisture (DEM)	% H ₂ O	1.9
Plant design	% H ₂ O	8.0
Uniaxial Compressive Strength (UCS) design maximum	MPa	200
Bond Abrasion Index (AI) design maximum	-	0.18
Crushing Work Index (+51 mm to -76 mm) design maximum	kWh/t	18.4

The process plant will receive ROM feed from the Ouéléba mine and will produce and deliver a coarse product onto rail wagons. The process route from the ROM bins to the TLO for ore production from Ouéléba is summarised in the process flowsheet in Figure 14-1.

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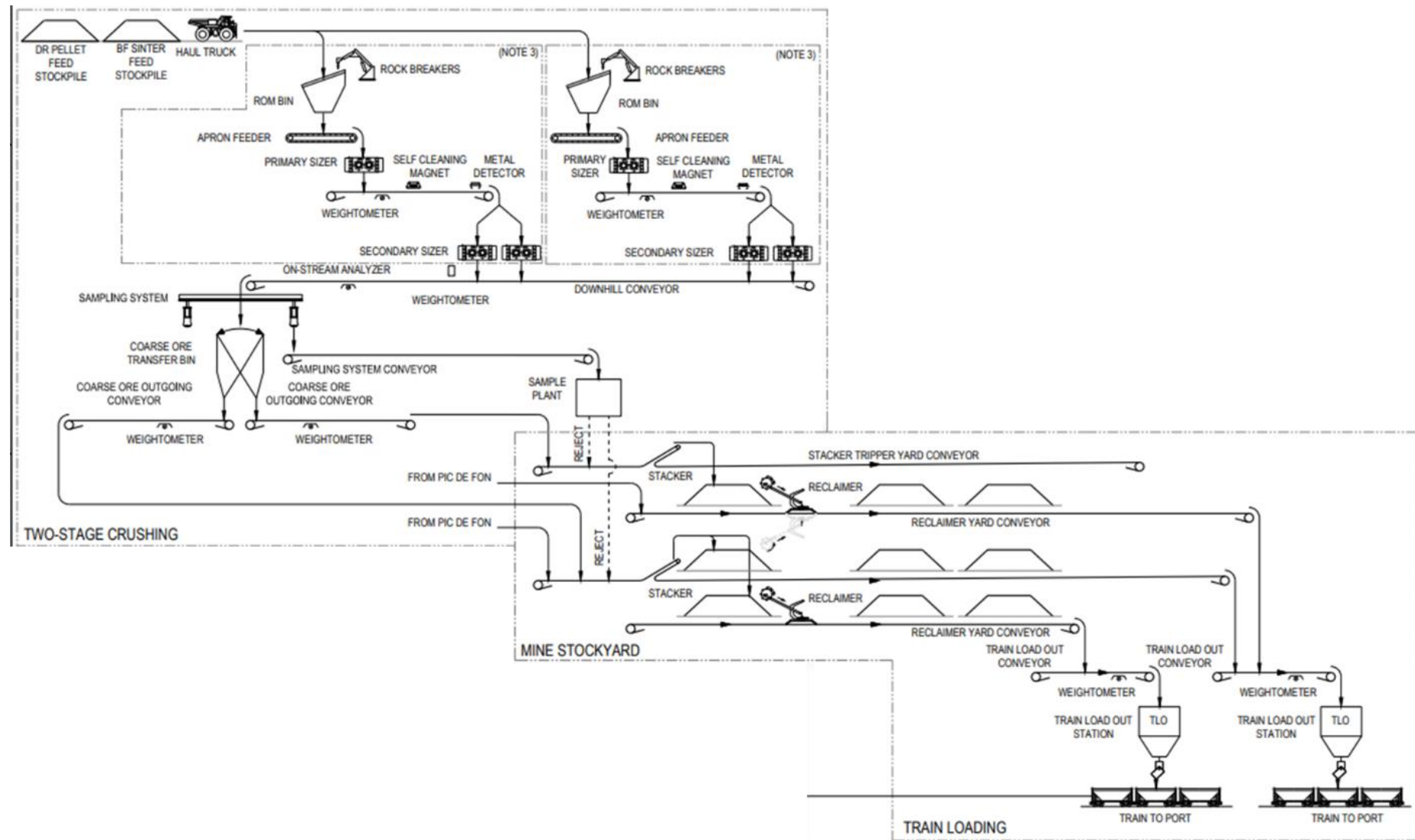


Figure 14-1: Overall simplified process flowsheet for two-stage crushing at mine



The ROM from the Ouéléba mine will be nominally <1,000 mm in size. The crushed product is nominally a <125 mm coarse product, produced by two stages of crushing. ROM material is fed into the plant at saleable grade and no beneficiation is required. Annual ROM feed to the plant is 60 Mtpa (dry) from the Ouéléba mine. Crushed material is sampled and blended on stockpiles prior to loading into rail wagons for transport to the port facility.

14.3 Primary and secondary crushing

The Ouéléba mine plans two identical primary and secondary crushing facilities located at fixed positions close to the pit, near the top of the ridge. Primary and secondary crushing is intended to be performed by mineral sizers and generates a nominal <125 mm product.

The crushing facility is considered to be operated in campaign basis to process different types of ore as needed. Water addition is possible at the ROM bin to reduce dust generation where ROM feed that is below the dust extinction moisture content is being processed.

14.4 Downhill conveying

Conventional (covered) downhill conveying, with energy recovery where appropriate, will be used to transport the secondary crushed ore downhill to the stockyard located in the valley at the base of the Ouéléba ridge.

14.5 Processing plant throughput and characteristics

The processing facility at the Project consists of primary and secondary crushing of the ore. The crushed ore is then stacked using stacker reclaimers. The completed stockpiles are then reclaimed for train load out and dispatch to the port.

14.6 Product sampling

Coarse crushed ore will be sampled at a sampling station prior to the mine stockyard to confirm the particle size distribution, moisture content, and chemical composition of the ore.

14.7 Product stockyard

The product from the Ouéléba crushing plant will be stacked by dedicated stackers onto separate rows of stockpiles in a common stockyard. Different ore types will be stacked by stackers onto separate rows of stockpiles in the same stockyard.

The stockyard has been designed to allow drainage of material to ensure that the product loaded onto rail wagons through the TLO station is within the moisture limits as prescribed in the project moisture management plan. An extensive under-drainage system and diversion of surface water drainage away from the stockpiles will be installed under the stockpiles to ensure product is free draining and to minimise any increase in the moisture content of the product due to rain in the wet season. The general arrangement layout for the stockyard is shown in Figure 14-2.

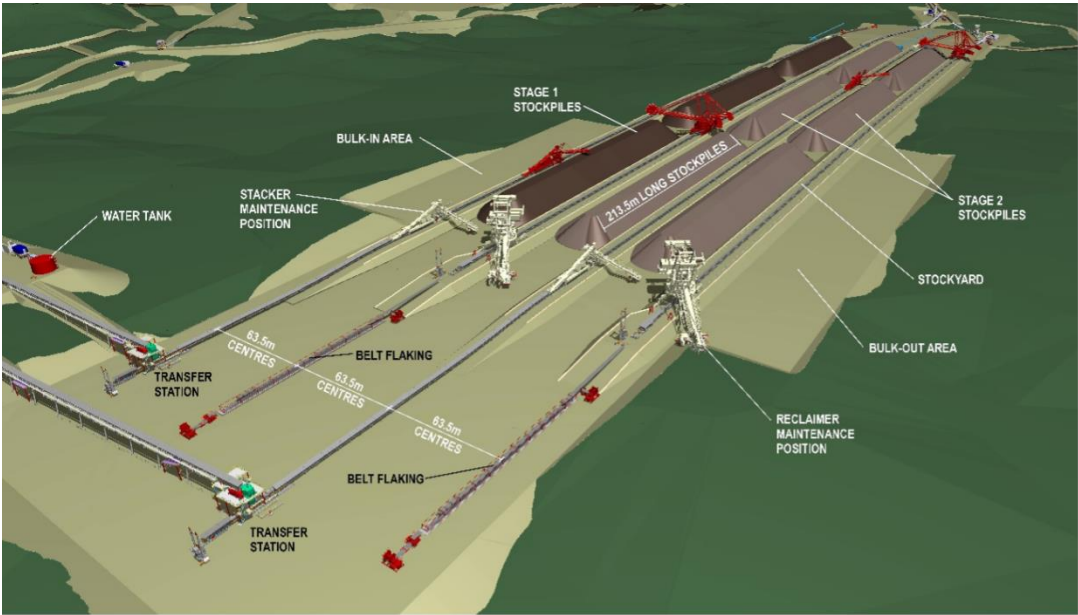


Figure 14-2: Ouéléba coarse ore transfer facility

14.8 Offshore tertiary crushing and screening

Tertiary crushing and screening to produce the required fine product for feed into the ironmaking process facilities will be undertaken offshore by third party companies.

14.9 Energy, water, process materials and personnel requirements

14.9.1 Mine power plant

The Property’s power plant will be a hybrid renewable plant that will supply a maximum demand of approximately 18.5 MW, covering the Mine site’s power requirements using diesel–fired generators initially plus capacity for future expansion using a combination of diesel–fired generators and future renewable generation sources.

In general terms, the main energy consumption is associated with the material crushing and handling processes, amounting to approximately 83% of the total load. Energy consumption of non-process infrastructure amounts to approximately 17%.

14.9.2 Suppliers for process

The main materials used at the mine and the process are represented in Table 14.2. Critical supplies are managed by long-term contracts to mitigate low stock risk.

Table 14-2: Main materials used at the mine and process

Process	Main supplies
Mine	Tyres, fuel, lubricants, filters
Power plant	Fuel, lubricants, filters
Crushing plant and stockyard	Sizer teeth, bin liner wear plates, conveyor belts, idlers, pulleys, lubricants
Train load out	Bin liner wear plates



14.9.3 Personnel

Refer to Section 4.4.3 for details on personnel expected to be engaged during operations.

14.9.4 Mine water management system

The mine water management system (MWMS) integrates management of surface water and groundwater for the project. The components of the MWMS perform the following functions:

- Dewatering the ore body.
- Supply of water for ore processing, dust suppression and domestic use.
- Management of in-pit storm water runoff.
- Pit slope depressurisation.
- Control of erosion and sediment transport.
- Provision of environmental base flows to impacted stream networks.
- Separation and treatment of acid and metalliferous drainage (AMD) from the mine waste rock storage facilities.

Erosion and sediment control measures will be incorporated into mining infrastructure designs. Stormwater will be diverted from areas of disturbance and sediment retention structures will be constructed downstream of areas likely to generate elevated levels of suspended sediment.

14.9.5 Open pit water management

The open pit water management system includes perimeter drains, in-pit storm runoff, and mine dewatering and depressurisation. The objectives of the system are to:

- Provide safe and dry conditions in the working areas of the open pit.
- Extract and discharge groundwater to maintain groundwater levels below the advancing pit floor during open pit mining operations.
- Provide a sustainable supply of water of acceptable quality for mitigation of impacts to base flow in downstream catchments and supplement water supply for construction, mineral processing and dust suppression.
- Promote the passive drainage of phyllite wall rocks through advanced dewatering of the ore body.
- Actively depressurise the phyllite wall rocks through use of horizontal drain holes.

Storm water runoff into the open pit will be collected in sumps and allowed to infiltrate to ground for capture by the dewatering system.

Dewatering bores will be used to maintain groundwater levels below the advancing pit floor, to minimise groundwater seepage into the pit in order to maintain dry working conditions within the operating pits and to maximise safety. Dewatering will increase the efficiency of the mining operation with reduced blasting costs, reduced tyre wear and reduced haulage costs. Effective dewatering will also support optimised pit slope design and implementation during mining operations.

14.10 QP's opinion

It is the QP's opinion that the factors that materially affect the processing estimates have been adequately reflected in the processing estimates. The process plant design is based upon existing available technology and standard processing methods. The QP is satisfied that the selected process and equipment are suitable for the project planned task and volumes.

15 Infrastructure

In line with the State's vision of seeing the Co-Developed Infrastructure Project, co-developed by the Rio Tinto and WCS groups, various agreements have been finalised under which the Simandou Project rail and port infrastructure will be co-developed and co-funded by Rio Tinto and WCS (or their respective affiliates), and their construction will be divided as follows:

- WCS RailCo will be responsible for constructing the Main Rail Line and the WCS Spur Line, and WCS PortCo will be responsible for constructing the WCS Barge Port on the Morebaya River in Forécariah Prefecture in Maritime Guinea.
- Simfer Infracore Guinée S.A. (SIG) will be responsible for constructing the Simfer Spur Line (approximately 68 km), and the Simfer Port.

The Co-Developed Infrastructure will subsequently be transferred to, and owned and operated by, CTG.

15.1 Rail access

No rail access is currently available. WCS RailCo will build the WCS Spur Line connecting the WCS Concession to the Main Rail Line; and Simfer Infracore Guinée S.A. (SIG) will build the Simfer Spur Line connecting the Concession to the Main Rail Line.

15.2 Port access

A port is located in the Morebaya Estuary south of the Conakry (the capital of Guinea) in the Forécariah prefecture, which will allow for the global distribution of iron product.

15.3 Roads

Current site access roads are being upgraded to handle mine traffic and contractor access for construction of the processing plant and associated infrastructure.

The following diagram (Figure 15-1) illustrates the location of the crushing, stacking and load-out facilities, as well as associated non-process infrastructure.

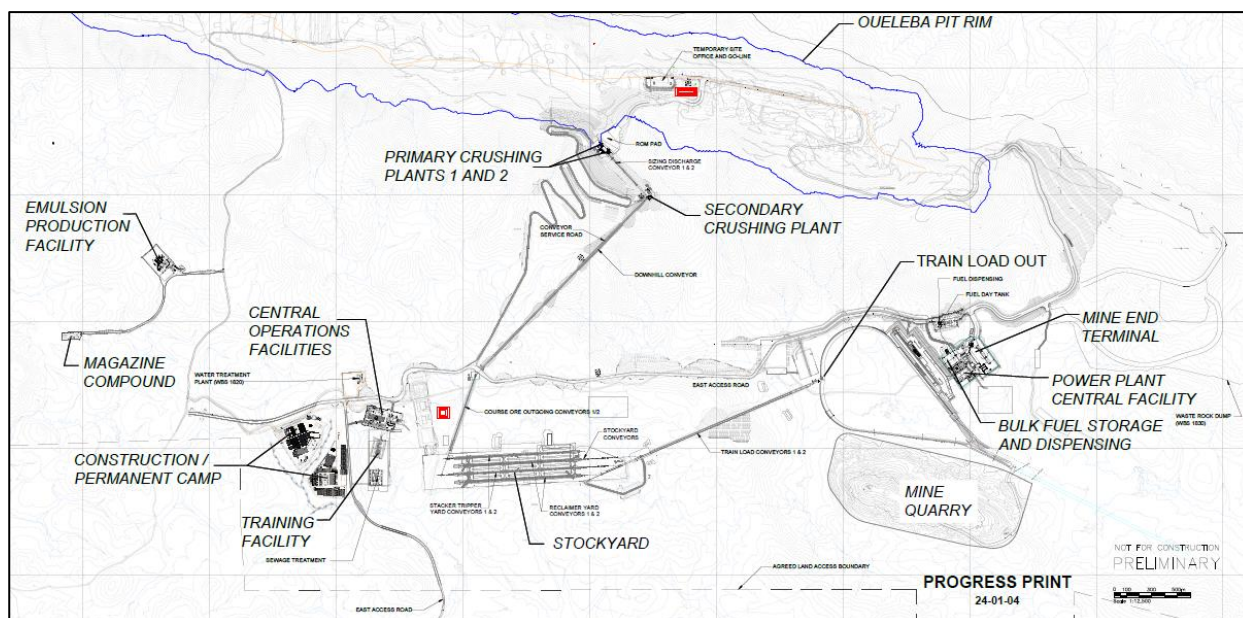


Figure 15-1: Mine site infrastructure

15.4 Camp

Camp facilities are in place with a current workforce involved in further geological sampling and early construction works for the project. Planned expansion of camp facilities in addition to an expansion and upgrade of an existing airstrip are scheduled for the project construction phase.

15.5 Tailings

Not applicable. The iron ore is a DSO, no tailings residue is produced.

15.6 Potable water and wastewater

Water treatment plants have been installed in the permanent accommodation camp, additional potable water capacity is being added as part of the contractor camp and permanent camp expansion.

Water supply wells and dewatering wells supply raw water to the main water treatment plant. Raw water is stored in a fresh / fire water storage tank from where a dedicated pipeline transfers the raw water to the water treatment plant. Treated potable water will be transferred to the potable water storage tank for distribution via pipeline to users across the site.

Potable water consumption across the site is estimated at approximately 225 m³ per day.

All mine water and wastewater will be treated and tested prior to being pumped off site.

15.7 Accommodation and offices

The Central Operations Facility (COF) is intended to provide a central location for the administration, security and operational services for the Project. Facilities to support the fixed plant are also provided at this location due to the close proximity of the COF to the mine process plant. The concept design for the COF includes:

- Mine access control and guard house.
- Mine administration office.
- Mine operations office.
- Prayer building.
- First aid and emergency services centre.
- Fixed plant workshop and rigging building.
- Laboratory.
- Central operations ablution block and shower facility.

A general concept layout of the COF is shown in Figure 15-.

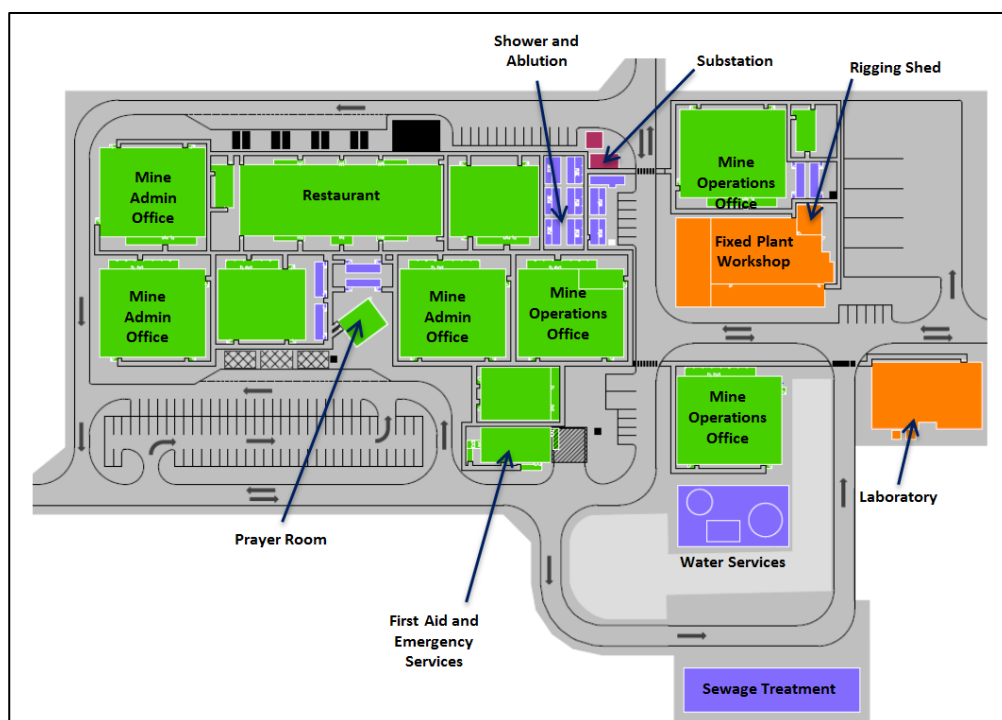


Figure 15-2: Central Operations Facility general layout (Source Simfer Jersey Ch 18)

15.8 Non-process infrastructure

Permanent non-process infrastructure (NPI) is provided at Simandou to support mining and process plant operations at Ouéléba. Where possible these are oriented to maximum benefit of local topography and minimise earthworks costs and are located in the following major areas:

- COF.
- Mine End Terminal (MET).
- Ouéléba go-line (go-line).
- Mine operations explosives facility.
- Waste management facility.

15.9 Open pit truck shop complex

The mine heavy vehicle equipment will have maintenance workshop incorporating several bays. The bays will be sufficient to cater for regular planned maintenance and any unplanned repairs to the truck and support vehicle fleet. The mine will also have a light vehicle workshop for the maintenance of the mine light vehicles including the service trucks.

A large earthmoving tyre storage and maintenance facility has been incorporated within the mining workshop area.

All heavy mining equipment requires washing down prior to scheduled maintenance, a heavy vehicle and light vehicle washdown facility, with one washdown bay for the heavy equipment and two washdown bays for the light mining equipment have been included in the mining workshop facilities.

Refuelling facilities for both heavy vehicles and light vehicles has been incorporated within the facilities. Other items incorporated within the mining workshop facility include, bulk-lubrication storage, a mine warehouse for equipment spares, a dedicated goods yard for the storage of oversized parts and shipping containers. Figure 15- shows the planned general arrangement for the mining workshop and associated facilities.

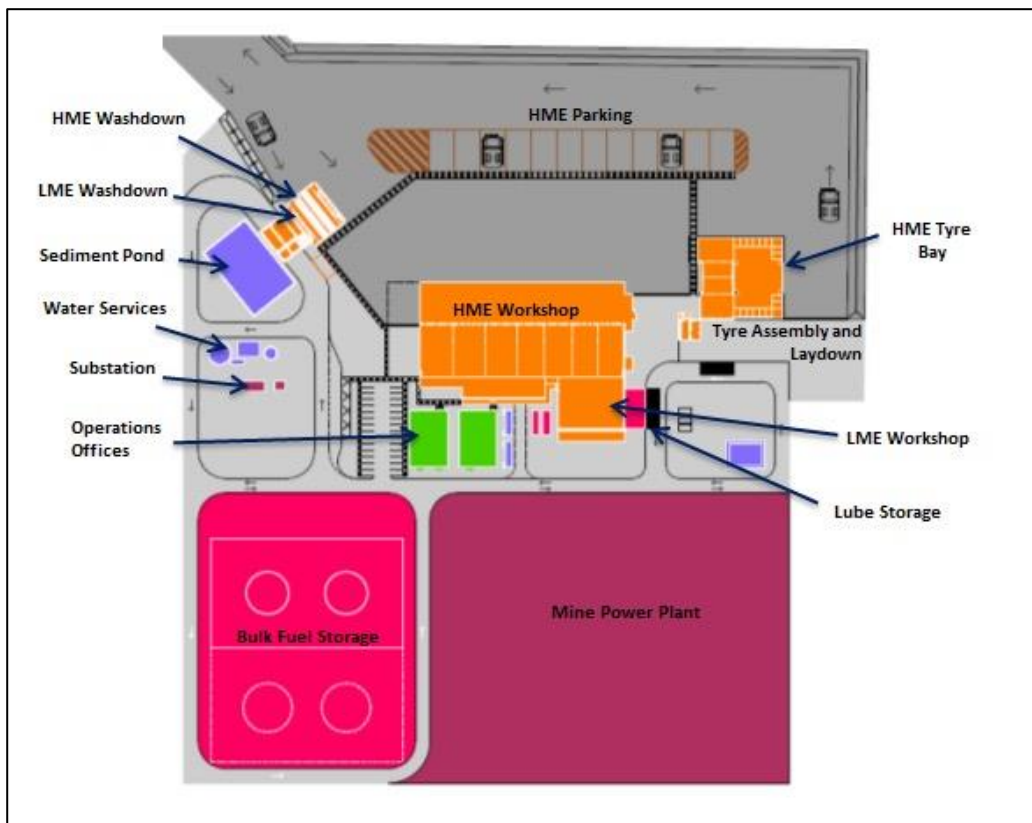


Figure 15-3: General arrangement for the mining workshop and associated facilities (Source Simfer Jersey Ch 18)



15.10 Information and communications technology (ICT) systems

Fibre optic network connectivity has been successfully extended to the Property. This empowers the operation to establish a strong network redundancy strategy that guarantees uninterrupted connectivity, mitigates downtime, and ensures data integrity. A backup microwave solution is in operation between the Canga camp and mine site to provide additional disaster mitigation safeguards in the event of unforeseen or unavoidable network outages, ensuring maximum business continuity.

Digital radio has also successfully been deployed at the mine and rail sites to provide a dependable two-way communications solution to personnel for enhanced worker safety and productivity. Whilst 4G telecommunications connectivity has been successfully deployed at the Canga campsite, which can be leveraged for improved business process efficiencies and community related purposes.

15.11 Other support facilities and utilities

The mining explosives magazine and bulk ammonium nitrate (AN) storage facilities are incorporated within the overall mine design layout. The explosives magazine and AN storage facility will be securely fenced and guarded at all times.

A waste management facility located at the mine site provides central facilities for handling and treating waste. A waste management area at the camp area provides initial waste management services prior to transferring waste to the waste management facility for permanent disposal.

The mining camp will be located in a permitted area. The contractors' temporary facilities occupy areas within permitted area for the duration of the construction, whereupon this will be upgraded and form part of the mining camp. Bulk earthworks have been minimised with roads, buildings and other facilities utilising the natural contours (and terracing) where possible. Site security is provided by a perimeter security fence with a guard house at the entrance. Various types of living accommodation units are provided to house the camp population.

The mine camp will incorporate the following facilities:

- Administration building.
- Guard house.
- Restaurant and mess hall.
- Dispersed laundry facilities.
- Utilities.
- Workshop and storage units.
- Medical facility.
- Recreation facilities.
- Wet mess area.
- Training facilities.



16 Market studies

16.1 Nature and material terms of agency relationships

Rio Tinto has various intragroup arrangements relating to the sales and marketing of its products. There are no material third party agency relationships.

16.2 Results of relevant market studies

Globally, the majority of iron ore (around 70% or approximately 1.5 Btpa) trades in the seaborne market, with relatively small volumes being produced and consumed by vertically integrated mine and steelworks operations. China accounts for just over 75% of Rio Tinto's sales, with East Asia (Japan, Korea, and Taiwan) forming Rio Tinto's second largest market. Small volumes are also shipped to Southeast Asia, with minor intermittent volumes into Europe.

Global iron ore demand experienced solid growth of 1.5% compound annual growth rate (CAGR) in the past decade but will see negative growth of 0.9% CAGR through 2035, on increasing scrap displacement as the world transition toward a greener steel manufacturing, amid decreasing Chinese demand. China is the dominant iron ore consumer with an estimated market share of around 60%. Chinese iron ore demand will gradually decline over the forecast period; however the country will continue to dominate the overall demand in absolute terms. India, on the other hand will provide the most incremental iron ore demand growth over the forecast period.

Global iron ore import demand is also forecast to slow from previous run rates and decrease at a CAGR of 0.9% through 2035 due to declining demand in China, Japan, South Korea and Taiwan over the forecast period. Though Chinese iron ore demand is expected to fall gradually going forward, Wood Mackenzie forecast its import dependency to grow, which will be driven by the displacement of domestic iron ore production and therefore Chinese import dependency to rise from 83% in 2022 to 93% in the long term, resulting in an increase in iron ore imports of around 1 Bt by 2035.

Iron ore consumption in Asia excluding China is expected to grow due to the need for industrialisation, urbanisation and infrastructure development in India and Southeast Asia. As witnessed in China, this stage of development is more steel intensive. In particular, India is forecast to exhibit the strongest growth rate in terms of iron ore consumption, consistent with its high demand growth for finished steel. After achieving a growth rate of 6.1% CAGR over the past decade, India is expected to see another decade of rapid demand growth over the forecast period, at a CAGR of 3.7%. This is mainly due to domestic demand for steel in the infrastructure, automotive and machinery sectors.

Outside of Asia, Wood Mackenzie forecasts a moderate increase of European iron ore demand with a sharper rebound being unlikely in the long term as risks related to the European Union economic growth and political stability remain.

The steel industry is responsible for around 8% of the global carbon emissions and there is an increasing environmental pressure to decarbonize the sector. The alternatives available are either to produce steel using recycled steel from past consumption (i.e. scrap), to reduce carbon emissions of existing process routes through some other means (e.g. carbon capture, storage and utilisation) or to produce iron with less carbon (e.g. using hydrogen and gas).

While scrap usage is the lowest emissions form of steelmaking, its availability is a key constraint that will limit the ability of the industry to completely decarbonize. Likewise, carbon capture, storage and usage remains technological premature and yet to be proven economically. As a result, to meet their emissions reduction targets, most steelmakers are instead investing in the main viable DR (gas or hydrogen based), electric arc furnace, process as it eliminates use of the BF, and therefore coking coal, from the steelmaking process.

Looking forward, Wood Mackenzie estimates that global DR production will increase from 137 Mt in 2023 to 382 Mt in 2040, with significant areas of growth in Europe, Middle East and Australia. The significant rapid growth in global DR production will translate into a strong demand for high grade iron ore.



Simandou represents a source of high grade and low impurity iron ore suited towards the lower carbon emission steel making process. Meanwhile, due to its high iron content and low impurities, a proportion of Simandou ore can be placed into the DR market, with estimates of ~23 Mt of DR fines sold from 2031 onwards.

Given its high quality, Simandou will help our customers achieve their decarbonisation targets and hence play a significant role in delivering our Scope 3 emissions reduction targets.

16.3 Commodity price projections

The iron ore price projections used in this analysis, are based on Q3 2023, Wood Mackenzie and CRU average pricing for iron ore (65% grade). The average long term price used is real 136.1 US c/dmtu CFR (Guinea to China) over the life of mine. A premium or discount may be applied as appropriate depending on the product produced at the Project.

The supply and demand situation for iron ore is affected by market demand. As iron and steel consumption changes with economic development and circumstances, Rio Tinto delivers products aligned with its Mineral Resources and Mineral Reserves. These products have changed over time to be aligned with market demand and customer requirements.

16.4 Mining and processing

Rio Tinto will utilise conventional large scale open pit mining for the Simandou operation with conventional crushing and stacking/reclaiming to load the trains for DSO to the market through the port of Conakry.

16.5 Product transport and handling

Simfer will procure the required freight services agent to deliver product from the Property to market.

16.6 Hedging arrangements

Rio Tinto does not generally believe that using derivatives to fix commodity prices provides a long term benefit to our shareholders. However, for certain physical commodity transactions for which the price was fixed at the contract date, Rio Tinto enters into derivatives to achieve the prevailing market prices at the point of revenue recognition.

16.7 Forward sales contracts

Rio Tinto places its products in a number of contract channels to maintain a diversified book. Contracts may be long term contracts, established for a period greater than one year (up to 7 years), or term contracts, established for a period less than one year. Rio Tinto will also place products onto the spot market to assist with price formation and discovery. A contracting strategy will be developed aligned with market demand and product strategy.

16.8 Contracts with affiliated parties

All international related party transactions are conducted on the basis of arm's length, terms conditions pricing in accordance with the Organisation for Economic Co-operation and Development (OECD) transfer pricing guidelines and the relevant regulations prevailing in specific jurisdictions.

17 Environmental studies, and plans, negotiations, or agreements with local individuals or groups

17.1 Introduction

An ESIA was undertaken that covers the following components of the Simfer Iron Ore Project:

- the Ouéléba mine and associated infrastructure to be developed by Simfer S.A.; and
- the rail spur and associated supporting infrastructure to be built by Simfer Infracore Guinée S.A..

17.2 Project context

The Property is situated in the southern part of the Simandou Range in southeastern Guinea. The Simandou Range follows a north-south axis and covers about 110 km. The southern portion of the range has its highest peak at Pic de Fon (south of the Ouéléba deposit) with an altitude of over 1,650 m. There is up to 700 m difference in elevation between the top of the range and the surrounding undulating plains.

The Ouéléba deposit is located within the Pic de Fon Classified Forest, an area of 252 km² that was established in 1953 mainly to protect water, forests, and soil resources. The main habitats in the Classified Forest are submontane grassland on the crest of the ridge with forested spurs and ravines running off the sides. The area contains some of the best examples of these ecosystems in the region. The species assemblages found within these ecosystems are differentiated from the surrounding lowland habitats and have a high concentration of species of conservation interest.

Small populations of the Western Chimpanzee are found in the forest on the western side of the Simandou Range. The International Union for the Conservation of Nature (IUCN) elevated the conservation status of the Western Chimpanzee from “endangered” to “critically endangered” in 2016 (Humble et al., 2016). There are many vulnerable, endangered, critically endangered, and range-restricted plant and animal species present in the Simandou Range.

17.3 Land acquisition and resettlement

To align with applicable legal and institutional requirements, including Guinean law and international resettlement standards such as the IFC’s Performance Standard 5, the Project will aim to meet the following resettlement objectives:

- Avoid displacement wherever possible – Displacement should be avoided wherever possible and, where unavoidable, should be minimised by exploring alternative Project designs.
- Avoid expropriation – Even when there is legal means to acquire land without the seller’s consent, negotiated settlements should be employed to avoid the need to use government authority to acquire lands compulsorily.
- Engage in forced evictions under no circumstances – Forced evictions² are a gross violation of fundamental human rights. Under no circumstances shall the Project resort to forced evictions
- Mitigate adverse impacts – Compensation should be provided to displaced persons and communities for lost assets either in kind or in cash at full replacement cost and should include additional support measures to help improve or restore standards of living, quality of life and livelihoods.
- Seek full restoration of livelihoods – The standard of living, quality of life, and livelihoods of those affected should ideally be improved, but at minimum will be fully restored through the resettlement process. This requires that entitlements and support programs offered by the Project are appropriate, affordable, and attractive to those affected and carefully designed to enable long term socio-economic development.
- Early and ongoing engagement – Resettlement activities should be planned and implemented with the informed participation of those affected, including good faith negotiations between parties. Early and ongoing engagement will help to secure negotiated settlements and avoid expropriation. A grievance / feedback mechanism is in place to receive and resolve concerns related to resettlement.
- Assist vulnerable persons – Certain persons or households may be particularly vulnerable to displacement impacts due to their social, cultural, physical or economic conditions. Measures should be put in place to identify and support them in participating fully and in accessing entitlements and benefits, and to prevent any project-induced vulnerability.

² As defined in handbook on United Nations Basic Principles and Guidelines on Development-based Evictions and Displacement.

- Monitor implementation and outcomes – Ongoing monitoring is a critical part of successful resettlement. It allows for any necessary course corrections to be made and for early resolution of emerging issues. Monitoring will continue post -displacement, up to the point that a final evaluation concludes that resettlement commitments have been fulfilled and the standards of living, quality of life and livelihoods of those affected are restored. In general, monitoring continues for a minimum of 3 to 5 years post -displacement in the case of a physical resettlement program, and 2 to 5 years in the case of a livelihood restoration program.
- Provide opportunities for development benefits – Opportunities for displaced persons to derive benefits from the resettlement process should be created, for example, using local labour for construction of resettlement housing where feasible and improving access to basic services for households that are physically displaced.

17.4 Environmental and Social Impact Assessment

The Project will result in the development of one of the largest iron ore mines ever developed in Africa, with a large physical footprint in an environment characterised by many environmental and social sensitivities. The ESIA of 2012 and subsequent update in 2023 address a very wide range of impacts. The updated ESIA (2023) is divided into separate chapters each addressing a particular topic.

The key topics addressed include the following:

- Biodiversity and natural resources – including vegetation, mammals, birds, amphibians and reptiles, and aquatic life, as well as geology and soils.
- Atmospheric environment – air quality, noise and vibration, local climate, climate change, and greenhouse gas emissions.
- Water environment – surface water and groundwater quality and quantity.
- Social and cultural environment – cultural heritage, landscape and visual amenity, socioeconomics, land use and ownership, working conditions, project -induced migration, community health and safety, ecosystem services and human rights.

Projects of the scale of Simandou require a comprehensive evaluation of the potential risks and impacts on the physical, biological, cultural, social, and socio-economic environment. The Project is classified as a 'Category A' project requiring a detailed ESIA, according to Guinean Order 2023/1595, as well as the Equator Principles IV (Equator Principles Association, 2020). The results of the updated ESIA are discussed below (sections 17.4.1 to 17.4.9), with the key conclusions being:

- No fatal flaws identified, with over 90% acceptability of the project in local communities.
- Any significant environmental and social impacts identified are to be mitigated through project design and management plans, to reduce the severity of residual impacts.
- Some significant residual impacts which will need to be managed, remain on local biodiversity, in particular relating to impacts on Boyboyba Forest, high altitude habitats and species, and Western Chimpanzee populations.
- There remain residual noise impacts on some affected communities along the rail spur. Monitoring and community engagement is underway to mitigate these residual impacts.
- Residual negative impacts on community health and wellbeing, socio-economics and cultural heritage are not predicted to be significant, while positive impacts are expected to be significant.

The regulatory framework within which ESIA's are conducted in Guinea is defined by the 2023 Administrative Process for Environmental Assessments (Order A/2023/1595/MEDD/CAB/SGG amending Order A/2022/1646/MEDD/CAB/SGG). Other key environmental Guinean legislation includes but is not limited to the following:

- Presidential Decree 200/PRG/SGG/89 of 8 November 1989, on the legal status of classified installations.
- 1994 Water Code (Loi L/94/005/CTRN of February 14, 1994) and 2013 Order (Order No A/2013/173/MEE/CAB/SGG).
- 2019 Environmental Code (Law No. L/2019/0034/AN of 04 July 2019).
- Domanial and Land Code (L/99/013/AN of 30 March 1992).
- Urban Planning Code (L/98 n° 017/98 of 13 July 1998).
- 2018 Law on the Protection of Wildlife and Hunting (Loi ordinaire N° 2018/0049/AN of June 20, 2018).
- Decree A/2019/5663/MEEF/CAB Attributions and Organization of the National Coordination of Control Posts for Wood, Non-wood and Wildlife Forest Products.



- Decree A/2020/1590/MEEF/MPAEM/SGG Protecting Flora and Fauna Species in the Wildlife in the Republic of Guinea.
- Decree A/2020/1591/MEEF/CAB/SGG Protection of Flora and Fauna in the Republic of Guinea.
- 2022 Administrative Process for Environmental Assessments (Order A/2022/1646/MEDD/CAB/SGG), recently amended and promulgated as A/2023/1595/MEDD/CAB/SGG of 05 May 2023

An ESIA was prepared and approved in 2013. An updated ESIA has since been submitted to the MEDD, to apply for a Certificate of Environmental Compliance for the Simandou Mine and Rail Spur Project. The AGEE (l'Agence Guinéenne D'Evaluation Environnementale), an entity of the MEDD, has commissioned a public enquiry through which the public are entitled to express their comments on the Project and on the ESIA. During the public enquiry, a Technical Committee on Environmental Analysis (CTAE) makes a recommendation on the acceptability of the ESIA to the Minister responsible for the MEDD who then deciding to grant an environmental compliance certificate.

This updated ESIA is based upon the approved 2012 ESIA completed for the Project, building on and updating those studies. Updates to the ESIA were to satisfy the following criteria:

- New Guinea legislation regarding environmental and social impact studies.
- Changes in conservation status of some species.
- Evolving Rio Tinto corporate policies around health and safety, biodiversity, human rights, and climate change.
- Evolving international best practices (e.g., Equator Principles IV [Equator Principles Association, 2020]).
- Updates to some of the environmental and social baseline environmental data that may no longer reflect current situation.
- Relevant technological advances that may be beneficial to the Project.
- Experience gained on the Project since 2012.
- Changes in how the mine will be developed, arising from recent engineering optimisation studies.

The updated ESIA is currently (2023) undergoing detailed review by the State regulators responsible for the approval of ESIA in Guinea.

17.4.1 Biodiversity and natural resources

Biodiversity has been identified as one of the most important environmental sensitivities requiring active management as part of the Simandou Mine and Rail Spur Project. Mining activities will take place in an area designated since 1953 as the Pic de Fon Classified Forest, an area of high biodiversity value. This has been under growing threat from human pressures such as fire, agricultural encroachment, cattle grazing, artisanal mining, logging and bushmeat hunting. With the Pic de Fon Classified Forest Management Plan adopted in 2010, the Classified Forest is now divided into a mining zone (where the deposits will be mined and infrastructure located), a fully protected area (to be protected from human activities) and a production area (where the community may undertake limited natural resource use activities).

Detailed investigations on the biodiversity of the mining area have been carried out since 2006. Initially, the studies focused primarily on the Classified Forest area and its immediate surroundings. This information has been used in the application of the mitigation hierarchy to eliminate or reduce impacts to the extent possible through redesign and application of mitigation measures.

More recently the scope of biodiversity studies has been extended to other areas in Guinea, with a view to developing an understanding of biodiversity value at a regional level and informing a biodiversity offset strategy. This is a strategy to compensate for adverse residual impacts to high value habitats by improving similar habitats elsewhere. Other areas of focus to address impacts on biodiversity include the development and implementation of measures to control possible introduction of invasive alien species, transmission of human diseases to Western Chimpanzees and other species, and broader initiatives that will be explored such as partnership with government authorities and other stakeholders to control bushmeat hunting and the illegal trade in rare animals, animal products and plants.

Mining in this area will have an impact on biodiversity, including on Western Chimpanzees and other critical habitat qualifying species (as discussed in the ESIA). To achieve its goal of net gain and no net loss, Simfer S.A. will therefore implement an offset strategy to compensate for the residual impacts to biodiversity predicted to occur as a result of the Project.



Ideally, offset areas will contain similar habitats and species as those predicted to be impacted by the mine. Conservation programmes in these offset areas will be developed and implemented in collaboration with the State, local communities, and specialist conservation groups. A specific Western Chimpanzee offset programme will also be developed.

17.4.2 Managing impacts on water

The Simandou Range forms the headwaters of four major rivers: the Dion and the Milo Rivers to the north (both tributaries of the Niger River); the Diani River to the southwest, which flows into Liberia; and the Loffa River to the southeast, a tributary of the Diani. Information on surface and groundwater flows and water quality has been collected since 2004, and the uses of water resources were surveyed across a wide area focusing on both community and biodiversity receptors. Numerical models have been developed to help understand the effects of mining on groundwater levels and the streams that emanate from the mountain.

Given the high elevation of the Ouéléba pit, and the absence of communities relying on groundwater resources on the mountain, the lowering of groundwater levels caused by dewatering the pit (the cone of depression) will have no adverse impacts on existing groundwater supplies within local communities.

A site-wide water management plan and erosion control plan outline how water will be managed during construction (and eventually during closure). The goal is to contain mine -contact water (i.e., water that has come into contact with mining areas such as waste rock storage facilities, pit roads, etc.). Contact water will either be reused (e.g., dust control) or tested and treated as required to meet project water quality standards before it is allowed to be discharged.

17.4.3 Acid and metalliferous drainage

Simfer S.A. has undertaken extensive geochemical testing to develop an understanding of the mineral waste and AMD potential from such waste that will be produced during mining. The current assessments indicate that only a small proportion (around 1%) of the waste rock will be potentially acid forming, and that with appropriate AMD management measures, the risks of net acid generating conditions occurring can be managed.

To manage the AMD risks, Simfer S.A. will implement an AMD Management Strategy developed for the Project. Studies are ongoing and a Mineral Waste Management Plan will be developed consistent with this AMD Strategy. This includes the identification of all potentially acid-forming material, methods for the safe containment of this material within the waste rock storage facilities, and the collection and treatment of any contact water leached from affected areas. Potentially acid forming waste rock will be sequestered in a constructed cell within the waste rock storage facility, to minimize risk of developing acid forming conditions in the future. The final design of the waste rock storage facility is under development.

The sulphur content data within the waste rock links to the acid and metalliferous drainage potential within the deposit. Areas with a sulphur fraction above 0.5% have been designated as Potentially Acid forming. For each rock type within the LOM pit, the material tonnage was tabulated based on sulphur grade ranges from 0.0% to $\geq 1.0\%$ in 0.05% increments.

Areas where the waste rock displays sulphur content above 0.5% are identified as requiring containment within the waste rock storage facility. Within the LOM pit design, a total of 940 kt out of the contained 442 Mt of waste rock has been identified as exceeding the 0.5% sulphur level. Ongoing efforts are in place to identify the species of sulphur within the waste rock, contributing to a deeper understanding of the mobilization potential of sulphur within the waste rock.

17.4.4 Erosion and protection of soils

Due to a combination of climate, topography, and nature of project activities, erosion is a significant project risk. Measures will be taken to limit erosion such as designing mineral waste emplacements to avoid exposing highly erodible material to run-off, constructing sediment retention structures downstream of areas at risk of erosion, limiting the slope of exposed rock faces, profiling slopes on haul road embankments and other earthworks to minimise the speed of water run-off, and rehabilitating and revegetating exposed surfaces as soon as possible after work is completed.



Development of the mine and its various facilities will also lead to sterilisation of soil resources beneath the works. Most soil formations identified in the Project area are impoverished tropical ferrallitic soils and duricrusts of low fertility, but to minimise impacts, useful topsoil will be removed before construction starts and the removed topsoil will be saved for use in site rehabilitation.

17.4.5 Noise and vibration

Modelling has been used to predict the effect of the Project on the noise levels in villages surrounding the mine and these have been compared with thresholds derived from national and international standards for daytime and night-time noise levels defined by the State, the IFC, and the World Health Organization (WHO).

Amenity noise impacts considers the increases in noise emissions at receptor locations relative to baseline noise levels. A study was completed on the effects of blasting (there will be approximately one blast per day), and it was found that major impacts on human receptors were unlikely to occur given the distance of mining operations from any villages within the region. The impacts of blasting on animals, in particular Western Chimpanzees, have also been considered with blasting frequency increased gradually to allow animals to become accustomed to the disturbance.

17.4.6 Air quality

Monitoring data indicates that air quality is generally good with only occasional elevated levels of pollution mostly caused by natural sources such as the dust laden Harmattan wind during the dry season, bushfire, or local activities – cooking, using fire to clear land, and emissions from old and poorly maintained vehicles. Emissions associated with the Project will include dust from traffic moving on unsealed/unpaved roads, earthworks, ore handling, crushers and stockpiles, and gaseous emissions from the combustion of fossil fuels in vehicles and from electricity generation.

A computer model has been used to predict the effect of the Project on air quality and the predicted levels were compared to WHO air quality interim targets. This indicated that construction is unlikely to cause significant impacts on air quality with the implementation of planned mitigation measures. Mine operations, if unmitigated, will generate emissions of dust under certain conditions which could lead to short-term impacts on ambient air quality in nearby villages (mainly Wataférédou I and II to the east, but also, Lamandou to the west, Nionsomoridou to the north and Foma to the southeast). Concentrations of nitrogen dioxide will also be slightly elevated. A number of control measures have been built into the design and operation of the mine, including selection of modern plant and equipment, use of fuel with restricted level of sulphur (if available), use of water sprays on roads in dry weather, variable height stackers to limit dust and, most importantly, maintenance of ore moisture levels above a threshold at which dust generation is suppressed. Further studies are scheduled for completion during construction and operations to monitor impacts and calibrate models. If additional dust control is found to be necessary, this will be incorporated into the Project management plans.

17.4.7 Local climate impacts

Using the latest understanding of atmospheric dynamics, global circulation models and local scale meteorology a numerical climate model was developed and supported by several years of climatic data provided by the Direction Nationale de la Météorologie de Guinée and site-specific meteorological stations operated by Simfer.

In addition, a climate change assessment of the Property based on the information available from the Intergovernmental Panel on Climate from the Sixth Assessment Report (AR6) was done by Steffan, Robertson and Kirsten, consulting engineers (SRK) in 2022 and was based on General Circulation Models, a class of computer-driven models for weather forecasting, understanding climate and projecting climate change. The potential climate trends were analysed for two assessment periods, namely the near-term assessment period covering the years 2020 to 2049 and the end-of-century period from 2070 to 2099 which predicts the future climate at the end of the 21st century.

The overall conclusion from this work was that the reduction to the height of the ridge will have a negligible impact on the amount of rainfall received directly around the mine (reduction of approximately 1.3%). Over a wider area of 10 km by 20 km (roughly 5 km either side of the ridge where mining will take place), the modelling shows that rainfall amounts will change by less than 0.5%. These predictions are much less than



natural variability and less than the effect predicted to occur through climate change induced by global warming. Mining of the ridge is therefore not predicted to have a significant impact on local climate.

17.4.8 Greenhouse gas emissions

Measures for limiting Greenhouse Gas (GHG) emissions have been built into the design of the Project, focussing on actions to reduce fuel use and improve energy efficiency. Fuel consumption during operation comprises the majority of emissions for the life of the Project. Land use changes has a minor contribution. Simfer S.A. will have a GHG and Energy Efficiency Action Plan focussed on setting and meeting targets for improvements in emissions. GHG emissions will be monitored and reported throughout the Project lifetime, and opportunities for further reduction will be considered wherever possible.

17.4.9 Resources use and non-mineral waste

The Project will utilise resources such as water, fossil fuels, and construction aggregates. With water conservation measures and the purchase of fuel offshore (so as to not deplete national reserves), the residual impacts are of minor significance.

The operation will generate various other waste streams including construction waste, domestic waste from the workforce, office and kitchen waste, clinical waste from medical facilities, redundant plant and equipment, packaging waste, and various types of potentially hazardous waste from workshops, water treatment plants, spill clean-up and other activities. A modern waste management facility will be constructed that is expected to include specialist hazardous waste treatment and disposal arrangements. All necessary permits required under Guinean law will be obtained prior to the establishment of these facilities. The site will be designed, built, and operated in accordance with strict international standards to ensure it has no significant impact on the environment and people in the surrounding area. Options will be explored to reduce, reuse, and recycle materials to the greatest extent possible.

17.5 Project standards

Simfer is committed to conducting its activities in compliance with Guinean legislations and regulatory requirements, as well as international standards and good practices in terms of environmental preservation and human health and safety.

The Simfer Iron Ore Project standards are defined by the CBAC. In accordance with this agreement, the following are identified as the Project standards:

- Rio Tinto's Health, Safety, Environment and Community (HSEC) policies and standards.
- Equator Principles IV (Equator Principles Association, 2020).
- International Finance Corporation's Performance Standards on Social & Environmental Sustainability (IFC, 2012).
- Voluntary Principles on Security & Human Rights (The Voluntary Principles Initiative, 2021).
- World Economic Forum's Partnering Against Corruption Initiative (PACI; WEF, 2021).
- Transparency International's Business Principles for Countering Bribery (Transparency International, 2013).
- The Extractive Industries Transparency Initiative (EITI) Standard (EITI, 2021).
- Principles and Guidance required by the membership of the International Council on Mining and Metals (ICMM), of which Rio Tinto is a founding member (ICMM, 2019a,b,c; 2020; 2021a,b,c).

Together these national, international, and corporate standards establish a set of requirements that the Project will be designed and operated to protect the environment and society from project -related adverse impacts and maximise the Project's benefits through design, construction, operation, and closure. Project monitoring commitments are outlined in the ESMP and in the various supporting management plans. The environmental monitoring will be extensive, covering water (quality, quantity), air quality (primarily fugitive dust), noise and vibration, rehabilitation success, and a range of biodiversity monitoring programs.

17.6 Stakeholder engagement

Guinean regulations and international leading practice in social and environmental assessment and management requires Simfer S.A. to identify and engage with stakeholders through proactive and timely consultation and disclosure about the Simfer Iron Ore Project and its impacts. Stakeholders include relevant regulatory and administrative bodies, communities affected by the Simfer Iron Ore Project, and other



interested parties such as local businesses, associations, and cooperatives, Guinean and international non-governmental organisations (NGO's), and other interested groups.

17.6.1 Stakeholder engagement plan

The Stakeholder Engagement Plan (SEP) was first developed and implemented in 2011, ahead of the completion of the 2012 ESIA, and was recently updated for the 2023 ESIA study for the mine and rail spur project. The SEP sets out the approach which the Simfer Iron Ore Project has followed to implement a robust, open, and transparent engagement programme with different groups of stakeholders, in accordance with Guinean legislation, IFC Performance Standards, other relevant international standards and Rio Tinto requirements. It was built on and aligned with the existing public consultation and disclosure practices and systems which have been followed to date during planning for the Simfer Iron Ore Project.

A grievance mechanism has also been developed and implemented in tandem with the SEP. It has been established to receive and facilitate resolution of concerns and grievances about the Simfer Iron Ore Project's environmental and social performance.

17.6.2 Consultation

Consultations have been undertaken since 2011, increasing in 2020 as Simfer intensified its activities on the Project. Over the period of 2020 to 2022, community consultations were general in nature and were intended to notify the communities of Simfer's resumption of work on the Simfer Iron Ore Project, including progress on environmental and social baseline studies, and engineering studies. Further rounds of community forums were undertaken in 2023 in support of the ESIA update for the mine and rail spur at the following locations:

- Beyla.
- Nionsomoridou.
- Kouankan.
- Kérouané.

At community forums participants included local leaders, village leaders, traditional leaders, Prefects, representatives of elders, men, women, and the youth from identified affected communities. Participants were asked to provide feedback on potential project impacts as well as mitigation measures (solutions). A map of the community engagement process is shown in Figure 17-1 below.

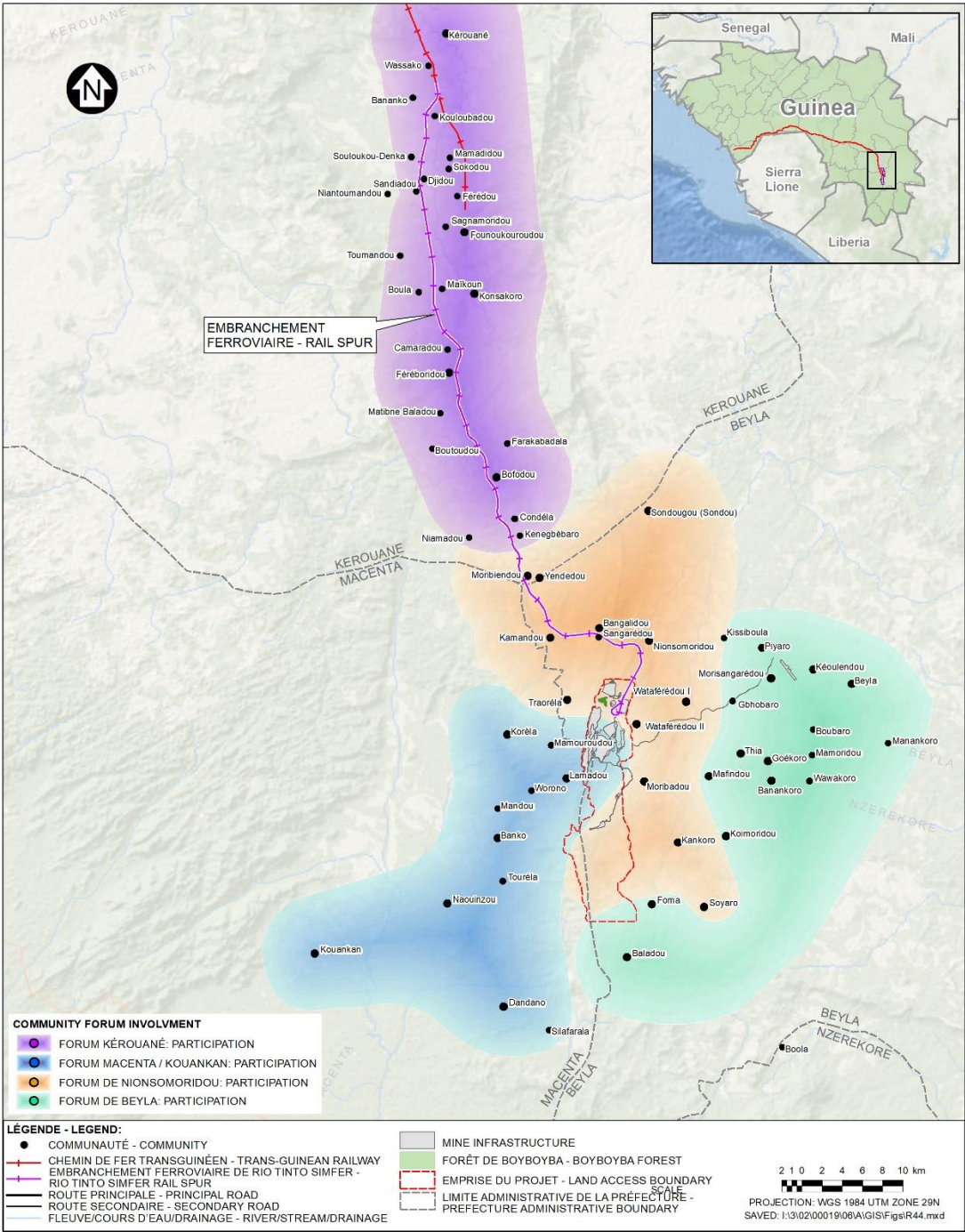


Figure 17-1: Community involvement in the 2023 ESIA community forums



The results of these consultations were considered during the process of completing the ESIA and are discussed in the ESIA. Key concerns raised by affected communities include:

- Prospects for employment and economic development.
- Infrastructure needs in the local area.
- Impacts of in-migration.
- Loss of community ties within and between settlements.
- Protection of forests and special species such as Western Chimpanzees.
- Dust and noise.
- Impacts on livestock.
- Resettlement and compensation for loss of homes and land.
- Requests for sponsorship and donations.
- Behaviours of Simfer and its contractors.
- Community development – a desire for more support, and some perceived inequality between villages.
- Impacts to sites of cultural importance.
- Project stoppage.

All comments made on the Simfer Iron Ore Project, its impacts and the proposed mitigation have been considered during detailed design reviews for planning construction and operation.

17.7 Cultural, economic, and social conditions

17.7.1 Cultural heritage

To protect cultural heritage, Simfer has developed a Cultural Heritage Management Plan which describes the processes, procedures, and resources that will be used by Simfer S.A. to manage all cultural heritage found in the area of the Project. It includes provision for further studies to identify and evaluate sites prior to construction. Where sites are identified they will be avoided wherever possible. If they cannot be avoided, sites will be investigated and rescue archaeology used to preserve the remains, if required. For all cultural heritage sites, communities will be consulted on appropriate means for relocation, if possible, or for providing compensation where relocation is impractical. There will be ongoing stakeholder engagement for the identification and conservation of cultural heritage assets. High importance will be placed on negotiating consent from Guinean authorities and from affected communities on the disturbance, or relocation, of cultural heritage sites.

17.7.2 Local landscape

The prominence of the Simandou Range means that it is theoretically visible from long distances, but in practice the distance from which the human eye can discern landscape features in the Simandou Range is limited by local climatic conditions to about 30 km. The portion of the Simandou mountain range within the mine area is a dominant visual feature. It has a series of separate peaks, reaching altitudes of 1,656 m at Pic de Fon and 1,132 m at Ouéléba. It is characterised by steep natural slopes intersected by a dense network of freshwater streams. The vegetation of the range consists of grassland on the ridgeline, high altitude forest galleries in the stream valleys transitioning to lowland forest and wooded savanna in the lowland areas.

The assessment of impact on the landscape considers the visual amenity of people affected by the proposed mine by considering typical locations from which people may be able to see the mine and its infrastructure. The ESIA considered changes in the landscape as seen from villages around the ridge including Moribadou, Mafindou, Wataférédou I and II, Nionsomoridou, Traoréla, and Foma.

17.7.3 Contributing to the national and local economy

Guinea ranks 182 out of 191 countries on the United Nations Development Programme 2021 Human Development Index and 70% of the population lives on less than one US dollar a day. Levels of education are low, with a national literacy level of 45.33% in 2021 and much lower levels in rural areas. Access to health services is limited and only 19% of the population has access to adequate sanitation and 7% to water of potable quality. The road network is sparse and road transport is often compromised by weather.



The Project provides an opportunity to foster economic development in Guinea. Contributions will include payment of wages to project employees and contractors, purchases of goods and services from local firms, tax payments and direct social investment.

The workforce directly engaged in connection with the Project is expected to peak at approximately 4,600. Once the mine is fully operational, the workforce at the mine is expected to be peak at approximately 2,050 Rio Tinto employees and another 1,400 contractors.

17.7.4 Establishing a social management framework

Simfer S.A. has developed a Social Management Framework (SMF) to provide a structure for the detailed design and implementation of measures to mitigate the adverse impacts of the Project and maximise its benefits. The SMF covers four themes: urban and rural planning; employment creation and livelihoods; community health, safety, and security; and cultural heritage and awareness. A range of more detailed social management plans will be developed as part of this framework. The detailed design and implementation of these plans will be influenced by several factors, as outlined below:

- **Prioritisation** – Simfer S.A. will prioritise mitigation measures that address negative impacts and risks. Implementation timeframes will consider the Project schedule and prioritise measures responding to immediate needs, which may then be enhanced and expanded in subsequent years to foster broader and lasting benefits. Simfer S.A. will also consider appropriate target populations for mitigation, prioritising those affected directly by Project activities, indirectly by in-migration pressures as well as vulnerable groups.
- **Alignment** – Where possible, Simfer S.A. will align its mitigation with the development policies and plans of local communities and government authorities such as Local Development Plans and Poverty Reduction Strategies and with objectives identified in relevant development forums.

17.7.5 Stakeholder engagement

Simfer S.A. will endeavour to actively engage with a variety of stakeholders to consult, exchange information, and work in partnership on detailed design and implementation of mitigation measures. Consultation with Project affected communities will be a key priority. Any concerns regarding mitigation measures or Project activities will be managed through the Project Grievance Procedure and the outcomes arising from grievance resolution will inform the evolution of mitigation. In addition, Simfer S.A. will seek to support capacity building within government and civil society organisations to enhance their capabilities over time to participate in mitigation design, implementation, and monitoring. Simfer's stakeholder engagement plan describes the processes by which these engagements and partnerships will be managed, and their efficacy will be monitored and the plan adapted as needed to support the achievement of Project goals.

The Project is projected to give rise to high levels of in-migration, with people attracted to the mine area in search of employment and economic opportunities. The main locations where in-migrants are expected to converge, and where the risks of adverse impact from in-migration are highest, are identified as Beyla Town and nearby villages on the N1, the larger villages of Nionsomoridou and Moribadou, and the small settlements of Wataférédou I and II. Most of the in-migration is expected to occur during construction (2023 to 2025), but it is likely to continue during operations, albeit at a declining rate.

The recent trend of population growth and increased pressure on land and housing experienced during exploration is likely to continue for many years. Settlements may also experience short periods of rapid in-migration linked to perceptions of new opportunities associated with the Project development at various points in the Project lifetime, though such rapid population increases are likely to stabilise and even reverse rather quickly as actual levels of opportunity become evident.

The primary tool for addressing the impacts of in-migration is through the implementation of the Project-induced migration management plan, in collaboration with relevant partners and the State. Mitigation measures identified in the plan include:

- Avoiding or minimising Project-induced migration as far as possible by discouraging people from moving to the Project area.
- Managing and directing the flow of incoming migrants to suitable locations that have most capacity to accommodate in-migrants in accordance with regional planning objectives.



Implementing mitigation measures to address the adverse environmental and social impacts, and maximise the benefits, of Project-induced migration.

In-migration will be monitored, and the plan updated as necessary throughout the life of the Project.

17.7.6 Impacts on land use and access

The nearest settlements to the mine site are Nionsomoridou, Wataférédou I and II, Moribadou and Foma to the east of the ridge, and Traoréla and Lamandou to the west. The mine works have been planned so that none of these settlements are directly affected by the mine development and there are no permanent settlements within the mine site. However, based on field surveys, four households are based within the mine land access boundaries (three residential households at Siatoro and one renting household) for whom physical displacement is envisaged. Additional monitoring of impacts will be carried out at Lamadou before any decision is made on resettlement.

The mine will occupy about 6,400 hectares of land, which will no longer be accessible to local people. This will displace activities important for their livelihoods including grazing livestock, hunting, gathering fuelwood, harvesting timber, collecting food and medicinal plants, and some scattered cultivation. All of the land occupied by the Simfer Iron Ore Project falls within the area of the Pic de Fon Classified Forest where many activities (grazing, collecting fuelwood, commercial logging, fishing, and use of fire) are prohibited. The balance is mostly wooded grassland with small patches of cultivated agricultural land (lowland, plain and hillside) around the mine plant and rail loop.

Where occupation of useful land and disruption of access cannot be avoided, Simfer we will implement compensation for affected people in accordance with a Framework for Land Acquisition, Resettlement and Compensation (PARC) developed specifically for the Project in accordance with IFC Performance Standard 5 (Involuntary Resettlement). This PARC framework will include use in-kind compensation, financial compensation, and other measures to fully restore, and where possible improve, the livelihoods of people and communities affected by the Project. This will be based on detailed surveys of their current situation and the impacts of the Project; and will be planned and implemented in full consultation with those affected.

The Project will also provide opportunities to supplement or diversify livelihood options and minimise pressures on resources and infrastructure, particularly where these arise from in-migration, through other programmes under the Employment and Livelihoods Creation and Urban and Rural Planning themes within the SMF.

17.7.7 Protecting community health and safety

Guinea, as a low -income country, with multiple political, socio-economic and health challenges, ranks low on the global human development index. Life expectancy, access to basic services, education and standards of living are low, all of which are important social determinants that influence national health outcomes.

The Project will seek to address any potential hazards that may lead to negative health impacts as well as supporting the health system in managing any negative health consequences. The development and implementation of a Project induced migration plan and an environmental management plan will play central roles. However, management measures in the workplace to address community health and safety concerns will include:

- The development of accommodation and camp facilities to limit the need for the non-local workforce to reside in the local communities.
- Development and enforcement of codes of conduct to address the way in which non-local workers interact with the local community.
- Development of Project medical and emergency services to limit an increased burden on public medical facilities due to workforce demands.
- Development of a communicable disease management plan to address concerns such as HIV and AIDS, tuberculosis, sexually transmitted infections, malaria, and vaccine preventable diseases.
- Development of occupational health and safety measures including:
 - i) limiting the introduction of communicable diseases to the area from non-local workers and travellers.
 - ii) road safety programmes including safe driving training, fitness to drive that includes fatigue management and substance misuse programmes.



- iii) rail safety programmes.
- iv) development of employee assistance and wellness programmes, and v) emergency response services.
- Develop contractor management programmes to address the actions of contractor activities and the behaviour of their staff.

17.7.8 Protecting the workforce

Simfer is fully committed to managing its workforce and providing labour conditions in line with Guinean legislation and international labour standards as defined by the International Labour Organization and IFC Performance Standard 2 (Labour and Working Conditions). In particular, Simfer will prohibit all forms of child labour and forced labour. These commitments apply to all directly employed workers and to those employed via contractors during construction and operation.

Through local supplier support programmes implemented within Simfer's SMF, Simfer will also seek to support the adoption of improved labour practices by Guinean companies involved in the Project.

17.7.9 Commitment to local procurement and hiring

Supplier development will be an ongoing Project commitment. Throughout construction and operations, the Project will continue to invest in capacity building in local, regional, and national businesses so they are able to benefit from the Project's business needs. Simfer has a long term aim to maximise local employment, procurement, and participation through local content. The Project has committed to maximising the availability and use of domestically provided goods and services to optimise the economic impact of the Project locally and nationally. The long-standing Local Supplier Development Program is designed to help improve commercial and operational readiness of local suppliers. Training and transfer of skills are critical to ensure appropriate standards are met while developing a capable local supply chain that can provide goods and services to the Project.

17.8 Mine closure

At the conclusion of mining, the mine will be closed, and the land will be rehabilitated. A conceptual mine closure plan has been developed that contemplates site closure that will restore the land to its best future use. Closure planning is an iterative process, and ongoing technical studies as well as consultation with local stakeholders will feed into future refinements of the current closure concepts, in accordance with Rio Tinto's Mine Closure Standard. A detailed Mine Closure Plan will be completed and agreed with relevant stakeholders at least 5 years prior to the cessation of operations. The implementation and success of the plan will be monitored until the site achieves an environmentally and socially acceptable and sustainable state.

The conceptual mine closure plan indicates that closure will be required after about 26 years of mining. Studies are ongoing to determine the potential for further extraction. On completion of mining the pit will be closed and the ore handling and processing facilities will be decommissioned. This will entail dismantling, demolition and removal of equipment and buildings, reshaping and re-contouring of land surfaces and rehabilitation of occupied areas. Dewatering of the pit will cease upon completion of mining and the pits allowed to fill with water, creating three in-pit lakes, based on the current mine plan. As far as practical, the land occupied by the mine and its infrastructure will be returned to its former land use. The mine pit, waste emplacements and other works will be made safe for the community including the placement of barriers to discourage people from entering the mined out pit. A public education program on safety issues associated with the open pit faces and pit lakes which will form at the bottom of the excavated areas will be conducted. A passive water management system will be implemented so that adequate protection for surrounding water resources can be provided without ongoing active management by Simfer.

The closure phase will also require the management of social issues including retrenchment of the workforce and managing the implications of loss of local employment and business. To mitigate the social impacts commonly associated with mine closure, the Mine Closure Plan will also include components related to social and community impacts. The plan will be developed in consultation with relevant authorities, the workforce and local communities.



17.9 Translating the ESIA into environmental and social management

The ESMP will be delivered through a Rio Tinto Simandou Health, Safety, Environmental and Communities Management System operating under the overarching framework of Rio Tinto's Management System Standard and Communities and Social Performance Standard. This is a single, consolidated standard that reflects international good practice, fully incorporates the requirements of the international standard ISO 14001 and defines Rio Tinto requirements relating to the systems and procedures to be used by all operations to ensure effective management of environmental and social impacts and risks.

17.10 QP's opinion

It is the opinion of the QP's that Rio Tinto's current actions and plans are appropriate to address issues related to environmental and social impacts, environmental compliance, permitting and local individuals. The Mineral Reserves estimate is located within an existing area zoned for mining, and planned activities are supported by regular monitoring and compliance reporting requirements undertaken in line with regulatory licence requirements and international leading practices.

18 Capital and operating costs

The accuracy of capital and operating cost estimates comply with the following guidelines (Table 18-1):

Table 18-1: Capital and operating cost estimation accuracy guidelines

Factors ¹	Initial Assessment	Preliminary Feasibility Study	Feasibility Study
Capital Costs	Optional ² . If included: Accuracy: $\pm 50\%$. Contingency: $\leq 25\%$.	Accuracy: $\pm 25\%$. Contingency: $\leq 15\%$.	Accuracy: $\pm 15\%$. Contingency: $\leq 10\%$.
Operating Costs	Optional ² . If included: Accuracy: $\pm 50\%$. Contingency: $\leq 25\%$.	Accuracy: $\pm 25\%$. Contingency: $\leq 15\%$.	Accuracy: $\pm 15\%$. Contingency: $\leq 10\%$.

- When applied in an initial assessment, these factors pertain to the relevant technical and economic factors likely to influence the prospect of economic extraction. When applied in a preliminary or final feasibility study, these factors pertain to the modifying factors, as defined in this subpart.
- Initial assessment, as defined in this subpart, does not require a cash flow analysis or operating and capital cost estimates. The qualified person may include a cash flow analysis at his or her discretion.

Capital and operating costs have therefore been developed in accordance with the accuracy and contingency requirements for a feasibility study set out in Item 1302 under SK-1300. The accuracy for both capital and operating costs are $\pm 15\%$ with a contingency of around 10%.

18.1 Capital costs

The mine capital cost has been estimated as \$4.6 Bn including an allowance of 11% contingency and some 3.7% escalation. Total direct costs for the project account for 49% of the total capital spend. A breakdown of the direct capital costs by area is shown in Table 18-2. All capital costs are on a 100% basis.

Table 18-2: Mine capital cost estimate as at 31 December 2023

Categories	Capital cost estimate (USD Bn Nominal)
Direct costs	
Bulk and early earthworks	0.7
Major process plant equipment	0.4
Mining equipment	0.3
Construction	0.4
Non process infrastructure	0.4
Total - Direct costs	2.2
Common distributables	
Logistics	0.2
Camp operations	0.1
Fuel & Magazine	0.2
Owners cost allocation	0.2
Total - Common distributables	0.8
IS&T	0.1
Overall - direct cost	3.1
Owners cost	
Project management team	0.5
Owners cost (vendor & recharges)	0.3
Total - Owners costs	0.9
Escalation	0.1
Contingency	0.5
Overall - Project cost	4.6



Excluded from the capital cost estimate are the following items:

- Rail from the train loading facilities to the point at which the railway track joins the spur line.
- Fuel management system equipment at the port main fuel depot (this sits within the port contractor's scope of work).
- Sovereign risk.
- All sunk costs to date.
- Financing costs including interest during construction.
- Deferred capital.
- Sustaining capital.
- Asset closure cost.
- VAT & GST.

Full Customs Duties is excluded. However, an allowance of 3.25% of import value to be paid during the construction phase. This allowance is separate to any Custom Duties that may be payable.

The following costs, though included in the capital cost estimate, are covered under Simfer's scope:

- Pre-production cost.
- Operational readiness.
- Pre-stripping.

The capital cost estimate is assessed as a 'Class 2' estimate as defined by the American Association of Cost Engineering. The factors that determine the estimate classifications are the level of project definition, estimate methodology and estimate source data.

A Class 2 estimate has a project maturity level between 30% to 70% and is built from detailed unit costs with detailed take offs.

18.2 Operating costs including sustaining capital

The operating cost estimates comprises the expenses that are required to operate the mine on a day-to-day basis and include mining, processing, and support costs. They have been compiled using a number of inputs developed internally and incorporating data provided by original equipment manufacturers, information received from various tender processes and estimates provided by mining engineering consultants. All cost estimates are on a 100% basis.

The forecasted Simfer SA mine operating cost is estimated at \$10.3 per wet tonne of product over the life of mine. The CTG infrastructure operating cost is forecasted at \$14.2/t being a combination of port costs of \$6.7/t and rail costs of \$7.5/t.

The mine sustaining capital is estimated at \$0.7/t. The rail sustaining capital is estimated at \$0.9/t with the port sustaining capital cost estimated at \$0.5/t.

Mining costs relate to the cost of extracting material from the pit and delivering it to the train loading station. The major components of mining costs are drilling & blasting, loading & hauling, pit support, processing (crushing, conveying, staking, reclaiming), and site support (G&A).

Rail costs relates to the cost of transporting the ore product from the mine site to the Marine export facility. The major costs of railing are primarily determined by the production volumes and length of railway. Key cost elements associated with railing include the fuel consumption required to transport the ore, tracks, and rolling stock maintenance, administration, and labour cost.

Port costs relates to the cost of off-loading the rail wagons and exporting the ore product from the port to being loaded into "ocean-going" vessels. The major components of port costs are the off-loading, conveying, stacking and reclaiming. Other major costs include the channels dredging and the Transshipment operations.

A breakdown of the unit costs for both the mine operations and the infrastructure/port and rail transport is shown in Table 18-3 with a total delivery cost to the port of \$24.50/t product.



Table 18-3: Total operating costs \$ per tonne of wet product as at 31 December 2023

Area	Mine	Infrastructure Port & Rail	Total
Consumables	1.6	0.2	1.9
Labour	2.1	1.1	3.1
Maintenance	1.2	2.9	4.1
Fuel	1.8	5.3	7.0
Services	2.9	3.1	6.0
Utilities	-	0.6	0.6
Contingency	0.7	1.1	1.8
Total / Product	10.3	14.2	24.5



19 Economic analysis

19.1 Summary

Rio Tinto has produced an economic evaluation of the Property's Mineral Reserves. Analysis excludes Mineral Resources and other lower confidence inventory. All cashflows are presented at a Property level owned by Simfer SA, on a 100 percent basis, in real 2023 US\$ dollars with no allowance for inflation. The economic evaluation presented in this chapter may differ from other external guidance published by Rio Tinto.

Economic analysis confirms the strong economic viability of the Property's Mineral Reserves, which delivers a Simfer SA post-tax NPV of \$4.4 billion based on a real discount rate of 8.0 percent. This valuation is robust against sensitivities to changes in major variables.

19.2 Methodology

19.2.1 Modelling approach

An economic evaluation of the Property's Mineral Reserves was completed and valuations conducted in a standalone valuation model that forecast cash flows relating to Simfer SA mine operation.

Mine economics were evaluated using the discounted cash flow method, mid-year discounting and taking into account annual iron ore production and sales forecasts. Sensitivities to price, operating costs, capital costs and discount rate were evaluated.

19.2.2 Sources of assumptions

A combination of internal and external sources were used as the basis for the financial evaluation. Key assumptions used in this economic analysis are outlined in Table 19-1.

Table 19-1: Economic analysis assumptions used as the basis for financial evaluation

Category of assumption	Source of assumption
Pricing and revenue	Based on consensus pricing (a blend of Wood Mackenzie and CRU)
Physicals	Mine technical services
Operating costs	Simfer Jersey operational readiness team with support from business analysis
Development capital	Rio Tinto projects
Sustaining capital	Simfer Jersey operational readiness team with support from business analysis
Taxation and royalties	Foundational agreements and tax convention agreements with the state Rio Tinto tax department

19.3 Inputs and assumptions

19.3.1 Financial

Financial inputs and assumptions include:

- Valuation date: 1 July 2023.
- Model based in US\$ and in real 2023 terms.
- Iron ore price projections based on Q3 2023, Wood Mackenzie and CRU average pricing for iron ore (65% grade).
- Included in the CTG charges, the Mine will pay to CTG the Operating Charges as detailed in section 18.2, 1% Operating Fees, and the Availability Charge (AC) based on a return of/on equity of 12% real.
- Mine management fees of 1% of gross revenues are assumed to be payable by Simfer to the Mine operator.



- Initial inventory stockpiling (excluding receivables, other payables and warehoused inventory) of \$164.2 million.
- The third stage (tertiary) of crushing and sizing activities will be outsourced and performed in China at an additional cost of \$2.1/dmt (real 2023).
- Valuation undertaken on a 100 percent basis, without regard for any apportionment of the expenses between Rio Tinto and other equity holders, such as joint venture participants.
- Discount rate of 8.0 percent, real after tax.
- Tax and royalty assumptions per the Agreements with the State.

19.3.2 Pricing and revenue

Iron ore price assumptions were based on specific product pricing determined from a 65% Fe Fines price of US c 136.1 / dmtu CFR (Guinea to China). This price was sourced from an average of forecasts from CRU and Wood Mackenzie.

19.3.3 Taxes and royalties

Taxes and royalties were modelled in accordance with the tax conventions as agreed with the State at the Simfer level. Other taxes as per the international structure of asset ownership to reach a Simfer Jersey Corporate level were excluded. A breakdown of the taxation assumptions for the Simfer project is shown in Table 19-2.

Table 19-2: Taxes

Items	Value
Government royalty	
Revenue basis	Gross sale value
Rate	3.5%
Economic development contribution	
Revenue bases	Gross sale value
Rate	0.25%
Corporate tax	
Tax holiday	No tax holiday
Rate during first 8 years	15%
Rate after 8 years	30%
Loss carry forward limitation	5 years
Investment tax credit	None
Withholding taxes	
Dividends	Exemption
Shareholder loan interest	Nil paid at Simfer SA level
VAT	Broad VAT exemption
Customs and duties during operations	5.6% on supplies involved in extraction including petrol and diesel Exemption for imports directly involved in the work of operating the mining infrastructure

19.4 Capital costs

Capital costs are summarised in Section 18.1.

19.5 Operating costs

Operating costs are summarised in Section 18.2. Unit operating costs reflect the 'all in' cost associated with producing each tonne of iron ore, on average, over time. Operating costs presented in Section 18.2 exclude closure and rehabilitation costs, which are included in the economic analysis described in this section.

19.5.1 Closure costs

Economic analysis includes allowances for rehabilitation and closure costs for the property based on current and future projected land disturbance. Closure costs include activities such as demolition and disposal of infrastructure, earthworks and civil works, water management, remediation of contaminated sites and



revegetation. Closure costs of \$396 million are included in this economic evaluation based on the property's current and future disturbance footprint.

19.6 Cash flow

19.6.1 Cash flow analysis

Rio Tinto reviewed the Mineral Reserves production schedule, after -tax cash flows to confirm the economics of the mine plan contemplated by this Mineral Reserves schedule. The Property's Mineral Reserves are value accretive, delivering \$20.2 billion in post-tax free cashflow as detailed in Table 19-3.



Table 19-3: Non discounted cashflow for the Property

Item (\$B real 2023)	Total	2022 ¹	2023	2024	2025	2026	2027	2028	2029	2030-39 avg.	2040-49 avg.	2050-52 avg.
Iron Ore sales (mt)	1,489	-	-	-	-	11	40	60	60	60	60	40
Gross revenue	109.2	-	-	-	-	0.73	2.71	3.91	3.83	4.23	4.61	3.23
Royalties	(3.8)	-	-	-	-	(0.03)	(0.09)	(0.14)	(0.13)	(0.15)	(0.16)	(0.11)
Selling cost and others ²	(1.3)	-	-	-	-	(0.01)	(0.03)	(0.05)	(0.05)	(0.05)	(0.05)	(0.04)
Net revenue	104.1	-	-	-	-	0.70	2.58	3.72	3.64	4.03	4.39	3.08
Mine operating costs (mine gate)	(15.3)	-	-	-	-	(0.30)	(0.46)	(0.57)	(0.61)	(0.61)	(0.60)	(0.44)
Other operating costs ³	(5.1)	-	(0.01)	(0.02)	(0.03)	(0.05)	(0.10)	(0.13)	(0.13)	(0.20)	(0.22)	(0.15)
CTG charges	(49.7)	-	-	-	-	(0.63)	(1.47)	(1.85)	(1.91)	(1.94)	(1.92)	(1.78)
Mine sustaining capital, exploration & closure costs	(1.5)	-	-	-	-	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.2)
Capital costs & change in working capital	(4.4)	(0.1)	(0.6)	(1.2)	(1.4)	(0.9)	(0.4)	(0.1)	0.0	0.0	0.0	0.1
Income tax	(7.8)	-	-	-	-	-	-	-	(0.1)	(0.2)	(0.5)	(0.3)
Simfer SA Mine Net Cash Flow	20.2	(0.1)	(0.6)	(1.2)	(1.4)	(1.2)	0.1	1.0	0.9	1.0	1.1	0.3

1) 2022 capital is considered sunk

2) Demurrage costs and economic development contribution

3) Tertiary crushing, Management fees and carbon tax



It should be noted that the mine has the obligation to pay the infrastructure tariff through a 35-year concession period. However, the 26-year mine life based on the amount of Proven and Probable Mineral Reserves used in this business case is shorter than the concession period. For valuation purposes, the negative tariff cashflow incurred by the Simfer mine once it stops operating beyond 2052 are excluded. The Simfer mine is expected to continue operating well beyond 2052 to meet the concession period, if marketing and operating conditions allow.

19.6.2 Economic evaluation

Economic analysis and discounted cash flow modelling confirmed the economic viability of the Property's Mineral Reserves which deliver a post-tax NPV₈ of \$4.4 billion and IRR of 16% with a payback period of 9 years (Table 19-4).

Table 19-4: Cashflow and NPV (\$real, US billion)

Parameters	Total	Present Value
Gross revenue	109.2	35.6
Royalties	-3.8	-1.2
Selling cost and others ¹	-1.3	-0.4
Net revenue	104.1	33.9
Mine operating costs (mine gate)	-15.3	-5.2
Other operating costs ²	-5.1	-1.7
CTG charges	-49.7	-16.6
Mine sustaining capital, exploration & closure costs	-1.5	-0.4
Capital costs & change in working capital	-4.4	-3.7
Income tax	-7.8	-1.9
Simfer SA Mine Net Cash Flow	20.2	4.4

1) Demurrage costs and economic development contribution

2) Tertiary crushing, Management fees and carbon tax



19.7 Sensitivity analysis

Sensitivity analysis confirmed the Property's Mineral Reserves are robust against changes to primary value drivers including price, capital expenditure, operating expenditure, and discount rate.

Sensitivity analysis outlined in Table 19-5 demonstrates the changes to the valuation due to $\pm 5\%$ and $\pm 10\%$ changes in price, development capital, and operating expenditure.

Table 19-5: Price, cost sensitivity analysis (\$real, US billion)

Key sensitivities NPV ₈	(-10%)	(-5%)	Base	+5%	+10%
Iron ore price	1.1	2.7	4.4	6.1	7.8
Capital cost	4.7	4.5	4.4	4.3	4.1
Operating cost	4.8	4.6	4.4	4.2	4.0

Sensitivity analysis outlined in Table 19-6 demonstrates changes to the Property valuation due to $\pm 1\%$ changes to the modelled discount rate.

Table 19-6: Discount rate sensitivity analysis, (\$real, US billion)

Discount rate sensitivities	NPV ₈
6.0% Discount rate	6.6
7.0% Discount rate	5.4
8.0% Discount rate (base)	4.4
9.0% Discount rate	3.6
10.0% Discount rate	2.9



20 Adjacent properties

Simfer has signed agreements with the State and WCS MineCo, the owner of the Simandou Blocks 1 & 2 deposits (the WCS Mine), to enable co-development of the rail and port infrastructure servicing the WCS Concession and the Property. The Co-Development Agreement, which, along with mine bipartite amendments for each of the WCS MineCo and Simfer S.A., adapts the existing investment frameworks of WCS and Simfer S.A.. These conventions provide the legal framework for infrastructure co-development and establish the fiscal regime and the access arrangements (including tariff) that will apply for use of the infrastructure by WCS MineCo and Simfer S.A. as foundation customers. These conventions and co-development of the Simandou rail and port infrastructure remains subject to a number of additional conditions, including regulatory approvals from the Guinean and Chinese governments.



21 Other relevant data and information

The QPs believe that all material information has been stated in the above sections of the TRS.



22 Interpretations and conclusions

22.1 Mineral Resources interpretations and conclusions

Based on the information presented in this TRS, the QP's key conclusions are as follows:

- The data collected during exploration drilling and sampling programs is collected using appropriate industry standard practices relating to drilling, surveying, logging, sampling, analyses, and QA/QC.
- Base data is reviewed and validated by subject matter experts, working under supervision by the QPs, and has been deemed appropriate for use in developing geological models and estimating Mineral Resources for the Property.
- The geological models and resource estimates of deposits are created using established industry methods as set out in Section 11. Verification of each geological model and Mineral Resources estimate occurs as noted in Section 11.1.9. In addition, a peer review is completed of the modelling process. A QP also prepares separate documentation to aid and support the Mineral Resources classification.
- Mining, processing, and market modifying factors, study assumptions and parameters are used to establish the reasonable prospects of economic extraction necessary for reporting Mineral Resources. No significant risks exist that could impact the reliability and/or confidence of Mineral Resources estimates.

22.2 Mineral Reserves interpretations and conclusions

Based on the information presented in this TRS, the QP's conclude that the Mineral Reserves estimate is supported by appropriate technical data and assumptions, and no significant risks exist that could impact the reliability and/or confidence of the Mineral Reserves estimates or related projected economic outcomes.

- As shown in the economic sensitivity analysis in Section 19.6.2, the Mineral Reserves estimate for the Property is largely insensitive to variation in capital cost, operating cost, or discount rate. Property valuation is most sensitive to product price, however as demonstrated the Property remains highly economic in these scenarios.
- The assumptions, methods and parameters used for generating the Mineral Reserves estimate are aligned with industry practices and suitable for the mineralisation of the Simandou operation and selected mining methods.
- All of the Mineral Reserves estimate is located within existing permitted mining areas, and will be supported by purpose -built facilities, processing, road infrastructure, heavy mobile equipment maintenance workshops, ground water abstraction and discharge networks, and surface mine haul roads and waste dumps.
- Historical performance at similar iron ore mining operations within Rio Tinto underpin the confidence in technical modifying factors such as ore loss and dilution, geotechnical parameters, metallurgical, and hydrogeological assumptions.



23 Recommendations

Based on the results presented in this TRS and consistent with Rio Tinto's long standing operating practices, ongoing technical work will be performed on the Property as part of studies to improve confidence, decrease risk, and enable the conversion of Mineral Resources to Mineral Reserves. The following items are recommended to sustain Mineral Resources and Mineral Reserves:

- Update Mineral Resources estimates for Pic de Fon.
- Update Mineral Resources estimates for Ouéléba to incorporate all available data:
 - Review and audit of database migration.
 - Review all historical QA/QC incorporating campaigns where documentation has not been identified.
 - Review of density to compare Corelok™ to downhole Geophysics.
 - Update structural model with recent field mapping. Current model is simplistic in internal geology, with the project carrying some risks in terms of tonnes, grade, geotechnical and water to manage and mitigate in operations.
- Undertake pre-feasibility study for Pic de Fon for inclusion as combined operation with Ouéléba to extend the life of operation and total project value.

These recommendations reflect Rio Tinto's ongoing operating practices and as such costs are incorporated into the Property's operating and capital costs; therefore, the costs of these recommendations have not been separately disclosed in this TRS.



24 References

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25 Reliance on information provided by the Registrant

The QPs have relied on information provided by Rio Tinto in preparing their findings and conclusions regarding the following aspects of modifying factors:

- Macroeconomic trends, data, and assumptions, and interest rates (Sections 18 and 19).
- Marketing information and plans within the control of the registrant (Sections 16, 18 and 19).
- Legal matters outside the expertise of the QPs (Sections 3, 13, 15 and 17).
- Environmental matters outside the expertise of the QPs (Section 17).
- Accommodations the registrant commits or plans to provide to local individuals or groups in connection with its mine plans (Section 17).
- Governmental factors outside the expertise of the QPs (Section 17).

The QPs consider it reasonable to rely upon the Registrant for the above information based on the QPs' past and ongoing interactions with the subject-matter experts in these areas employed or engaged by the Registrant, as well as the Registrant's considerable experience in iron ore mining. Further, the QPs have taken all appropriate steps, in their professional opinion, to ensure that the above information provided by the Registrant is accurate in all material respects and have no reason to believe that any material facts have been withheld or misstated.