

**McArthur River Mine
Overburden Management Project**

Glossary

Draft Environmental Impact Statement

G. Glossary

Table G-1 Units

Unit	Definition
%	percent
µg/L	microgram per litre
µg/m ³	microgram per cubic metre
µm	micrometre
µS/cm	microsiemens per centimetre
°C	degree Celsius
CO ₂ e	carbon dioxide equivalent
CO ₂ -e/y	carbon dioxide equivalents per year
dB	decibel
dB(A)	A-weighted decibel
dmt	dry metric tonne
dmt/y	dry metric tonne per year
g/m ² /month	gram per metre squared per month
g/t	gram per tonne
GJ	gigajoule
GJ/y	gigajoule per year
GL	gigalitre
GWh	gigawatt hour
ha	hectare
kg	kilogram
kgH ₂ SO ₄ /t	kilogram of sulphuric acid per tonne

Unit	Definition
kg/ha	kilogram per hectare
kL	kilolitre
kL/day	kilolitre per day
km	kilometre
km/h	kilometre per hour
ktpa	kilotonne per annum
km ²	square kilometre
kV	kilovolt
L	litre
L/y	litre per year
m	metre
m/d	metre per day
m/s	metre per second
m ²	square metre
m ² /day	square metre per day
m ³	cubic metre
m ³ /h	cubic metre per hour
m ³ /s	cubic metre per second
m ³ /y	cubic metre per year
MCM	million cubic metres
mg	milligram
mg/L	milligram per litre
ML	megalitre (million litres)

Unit	Definition
mm	millimetre
mm/day	millimetre per day
Mt	megatonne (million tonnes)
Mtpa	megatonne (million tonnes) per annum
MW	megawatt
MWh	megawatt hour
ppm	parts per million
psi	pound per square inch
rpm	revolutions per minute
t	tonne
t/y	tonne per year
tpa	tonne per annum
tph	tonne per hour
y, yr	year

Table G-2 Acronyms, Abbreviations and Chemical Formulae

Acronym, Abbreviation or Chemical Formulae	Definition
(Zn,Fe)S	sphalerite
HCO ₃ ⁻	bicarbonate
~	approximately
<	less than
>	greater than
AAPA	Aboriginal Areas Protection Authority

Acronym, Abbreviation or Chemical Formulae	Definition
ABA	acid-base accounting
ABCC	acid buffering characteristic curve
ABS	Australian Bureau of Statistics
AC	acid consuming
ACC	Application for Certificate of Closure
AD	acid drainage
AEP	annual exceedance probability
AFANT	Amateur Fishermen's Association of the Northern Territory
Ag	silver
AGO	Australian Greenhouse Office
AHD	Australian Height Datum
Al	aluminium
ALARP	as low as reasonably practicable
ALRA	<i>Aboriginal Land Rights (Northern Territory) Act</i>
AM	Adaptive Management
AMD	acid and metalliferous drainage
AMIRA	Australian Mineral Industries Research Association Limited
AMSA	Australian Maritime Safety Authority
ANC	acid-neutralising capacity
ANFO	ammonium nitrate fuel oil
ANZECC	Australian and New Zealand Environment and Conservation Council
APP	anti-pollution pond
AQIS	Australian Quarantine Inspection Service

Acronym, Abbreviation or Chemical Formulae	Definition
ARD	acid rock drainage
ARI	average recurrence interval
ARR	Australian rainfall and runoff
AS	Australian Standard
As	arsenic
AS/NZS	Australian/New Zealand Standard
AST	Archimedes Screw Tractor
ATO	Areas of Temporary Occupation
AUSRIVAS	Australian River Assessment System
av	average
BbH	Black Bituminous Shale
BCEC	Borroloola Community Education Centre
BGM	bituminous geomembrane
Bi	bismuth
BoM	Bureau of Meteorology
BP	Borrow Pit
C	carbon
Ca	calcium
$\text{Ca(Fe,Mg,Mn)(CO}_3)_2$	ankerite
CaCO_3	calcite
CAMBA	China-Australia Migratory Bird Agreement
$\text{CaMg(CO}_3)_2$	dolomite
CAPEX	capital expenditure

Acronym, Abbreviation or Chemical Formulae	Definition
CASA	Civil Aviation Safety Authority
CBT	Community Benefits Trust
CCL	compacted clay layer
Cd	Cooley Dolomite
Cd	cadmium
CE	Critically Endangered
CEF	Clean Energy Future
CH ₄	methane
CHAZOP	Control Hazard and Operability Study
Cl	chlorine
CLT	column leach tests
CMT	Continuous Multi-channel Tubing
Co	cobalt
CO ₂	carbon dioxide
CO ₃ ²⁻	carbonate
COAG	Council of Australian Governments
CoC	constituent of concern
Cr	chromium
CRG	Community Reference Group
CRP	concentrator runoff pond
CRR	cyclic resistance ratio
CRS	chromium reducible sulphur
CSI	Community Social Involvement

Acronym, Abbreviation or Chemical Formulae	Definition
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSM	conceptual site model
CSR	cyclic stress ratio
Cu	copper
CU	Consolidated Undrained
CW	Central West
CWCST	Central West C sediment trap
DAWR	Department of Agriculture and Water Resources
dd	data deficient
DEE	Commonwealth Department of the Environment and Energy
DENR	Northern Territory Department of Environment and Natural Resources
DIDO	drive-in/drive-out
DITR	(former) Department of Industry Tourism and Resources
DMSO	dimethyl sulfoxide
DO	dissolved oxygen
DPIR	Department of Primary Industry and Resources
DSEP	Dam Safety Emergency Plan
EA Act	Northern Territory <i>Environmental Assessment Act</i>
EC	electrical conductivity
EDL	Energy Developments Limited
EEO	Energy Efficiency Opportunities
EET	Emissions Estimation Technique

Acronym, Abbreviation or Chemical Formulae	Definition
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EM	electromagnetic
EMP	Environmental Management Plan
EMS	Environmental Management System
ENSO	El Niño-Southern Oscillation
EPBC Act	Commonwealth <i>Environmental Protection and Biodiversity Conservation Act</i>
EPROD	East Perimeter Runoff Dam
ESD	Ecologically Sustainable Development
ESIA	Economic and Social Impact Assessment
ESIMP	Economic and Social Impact Management Plan
EST	eastern sediment trap
ET	Evapotranspiration
EWFS	Early Warning Flood System
Fe	iron
FeS ₂	pyrite
FIFO	fly-in/fly-out
FMEA	Failure Modes and Effects Analysis
FoS	Factors of Safety
FSL	Full Supply Level
FTE	full time equivalent employment position
GAI	Geochemical Abundance Index

Acronym, Abbreviation or Chemical Formulae	Definition
GARD Guide	Global Acid Rock Drainage Guide
GCM	Global Climate Model
GCOM	Glencore Communication
GCP	Glencore Corporate Practice
GDE	Groundwater Dependent Ecosystem
GDP	Gross Domestic Product
GHD	GHD company
GHG	greenhouse gas
GM	growth medium
GOLDD	Geometrically Optimised Large Area Drift Detector
GP	General Practitioner
GRP	Gross Regional Product
GSP	Gross State Product
GWC	Gravimetric Water Content
H&S	Health and Safety
H ₂ O	water
H ₂ O ₂	hydrogen peroxide
H ₂ SO ₄	sulphuric acid
HAZOP	Hazard and Operability Study
HDPE	high-density polyethylene
Hg	mercury
HIRARC	Hazard identification, Risk Assessment and Risk Control Methodology
HMP	Heavy Media Plant

Acronym, Abbreviation or Chemical Formulae	Definition
HMR	Heavy Media Rejects
HPRI	High Potential Risk Incidents
HSEC	Health Safety Environment and Community
HSEC MS	Health, Safety, Environment and Community Management System
HYC	<i>"Here's Your Chance"</i> the main ore body at MRM
IAP2	International Association for Public Participation
ICAM	Incident Cause Analysis Method
ICE	Independent Consulting Engineer
ICMM	International Council on Mining and Metals
ICP-AES	Inductively Coupled Plasma – Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma – Mass Spectrometry
IGS	Insitu Geotechnical Services
IM	Independent Monitor
IMETF	Indigenous Mining and Enterprise Task Force
INAP	International Network for Acid Prevention
IPCC	Intergovernmental Panel on Climate Change
IPD	in-pit dump or in-pit dumping
IPT	in-pit tailing
IRSA	inter-ramp slope angle
ISO	International Organisation for Standardisation
ISP	Imperial Smelting Process
ITRB	Independent Tailings Review Board

Acronym, Abbreviation or Chemical Formulae	Definition
IUCN	International Union for the Conservation of Nature
JSA	Job Safety Analysis
K	potassium
KCB	Klohn Crippen Berger Pty. Ltd.
KLC	kinetic leach column
KNAG	kinetic net acid generation
KPIs	Key Performance Indicators
Ksat	saturated hydraulic conductivity
LC	Least Concern
LdH	Lower Dolomitic Shale
LED	light emitting diode
LGA	Local Government Area
LGO	low grade ore
LOCCs	large oxygen consumption cells
LOM	Life of Mine
LOR	Limit of Reporting
LpH	Lower Pyritic Shale
LR	Low Risk
LS-NAF(HC)	low salinity non-acid forming (high capacity)
LVAS	Low Volume Air Samplers
MCA	Minerals Council of Australia
MCA	Multi-criteria analysis
MCE	Maximum Credible Earthquake

Acronym, Abbreviation or Chemical Formulae	Definition
MCP	Mine Closure Plan
MDE	Maximum Design Earthquake
MEB	Medical Entomology Branch
MEND	Mine Environment Neutral Drainage
Mg	magnesium
MIA	Mine Infrastructure Area
MIM	Mt Isa Mines
MIMEX	Mount Isa Mines Exploration
ML	Mineral Lease
MLW	Mine Levee Wall
MMP	Mining Management Plan
MMU	Mobile Manufacturing Unit
Mn	manganese
MNES	Matters of National Environmental Significance
Mo	molybdenum
MOE	Ministry of Environment (Ontario)
MOL	Maximum Operating Level
MOU	Memorandum of Understanding
MPA	Maximum potential acid
MPC	Maximum Permitted Concentrations
MRM	McArthur River Mine
MSDSs	Material Safety Data Sheets (now SDS, see below)
MSL	Maximum Safe Level

Acronym, Abbreviation or Chemical Formulae	Definition
MS-NAF(HC)	metalliferous saline non-acid forming (high capacity)
MS-NAF(LC)	metalliferous saline non-acid forming (low capacity)
N ₂ O	nitrous oxide
Na	sodium
NaCl	sodium chloride
NAF	non-acid forming
NAG	net acid generation
NAGpH	net acid generation pH
NAIDOC	National Aboriginal and Islander Day Observance Committee
NAPP	net acid producing potential
NATA	National Association of Testing Authorities
NE BP	Northeast borrow pit
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measures
NES	National Environmental Significance
NGA	National Greenhouse Accounts
NGER	Commonwealth <i>National Greenhouse and Energy Reporting Act</i>
NGS	National Greenhouse Strategy
Ni	nickel
NLC	Northern Land Council
NMD	neutral metalliferous drainage
NMRI	Near Miss Risk Incidents
NO	nitric oxide

Acronym, Abbreviation or Chemical Formulae	Definition
No.	number
NO ₂	nitrogen dioxide
NOEF	North Overburden Emplacement Facility
NOHSC	National Occupational Health and Safety Commission
NOI	Notice of Intent
NO _x	oxides of nitrogen
NP	Net Percolation
NPAH	National Partnership Agreement on Homelessness
NPI	National Pollutant Inventory
NRM	Natural Resource Management
NSW EPA	New South Wales Environmental Protection Authority
NT	Northern Territory
nt	near threatened
NT EPA	Northern Territory Environment Protection Authority
NTGS	Northern Territory Geological Survey
NZS	New Zealand Standard
O ₂	oxygen, or dioxygen, the most stable form of the element oxygen
O ₃	Ozone
OBE	Operating Basis Earthquake
OC LA	Open Cut Lake Archer
OC P2	Open Cut Pond2
OC PP	Open Cut Pete's Pond
OC VDD	Open Cut Van-Duncan's Dam

Acronym, Abbreviation or Chemical Formulae	Definition
OCR	oxygen consumption rate
OEF	Overburden Emplacement Facility
OHS	Occupational Health and Safety
OKC	O'Kane Consultants Pty. Ltd.
OLS	Obstacle Limitation Surface
OMC	Optimum Moisture Content
OMP	Overburden Management Project
OOL	Optimum Operating Level
Opex	Operational expenditure
PAF	potentially acid forming
PAF(HC)	potentially acid forming (high capacity)
PAF(RE)	potentially acid forming (reactive)
PAR	Population at Risk
Pb	lead
PBIR	Metalloid and Lead Isotope Ratio
PbS	galena
PbSO ₄	anglesite
PDCA	Plan-Do-Check-Act
PER	Public Environmental Report
PM	Particulate matter (fine dust)
PM ₁₀	Particulate matter less than 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
PMC	Potential Maximum Consequence

Acronym, Abbreviation or Chemical Formulae	Definition
PMF	Probable Maximum Flood
PMP	Probable Maximum Precipitation
Pmp	Teena Dolomite
PPE	Personal Protective Equipment
PPI	Piston Pneumatic Injection
PROD	Perimeter Runoff Dam
PSD	particle size distribution
PWCNT	Parks and Wildlife Commission of the Northern Territory
PWD	Process Water Dam
pXRF	portable X-ray fluorescence
Qa	Quaternary Alluvium
QA/QC	quality assurance/quality control
QCCCE	Queensland Climate Change Centre of Excellence
QEM	Quantitative Evaluation of Mineralogy
RCP	Representative Concentration Pathway
RGRC	Roper Gulf Regional Council
RL	Australian Height Datum (AHD) + 10,000 m
RM	Reactive Management
RNA	Register of the National Estate
RO	Reverse Osmosis
ROM	Run of Mine
S	sulphur
S.L.A.M	Stop Look Assess Manage

Acronym, Abbreviation or Chemical Formulae	Definition
SA	Statistical Area
SAG	Semi Autogenous Grinding
Sb	antimony
SBT	Soil Behaviour Type
SD	saline drainage
SDSs	Safety Data Sheets
Se	selenium
SEL	southeast levee
SEM	Scanning electron microscopy
SEPROD	Southeast Perimeter Runoff Dam
SFE	Shake Flask Extraction
SI	Site Investigation
SIA	Social Impact Assessment
SILO	Scientific Information for Land Owners
SLA	Statistical Local Area
SMART	Specific, Measureable, Assignable, Realistic and Time-related
SMDD	Standard Maximum Dry Density
SMS	Safety Management System
SO ₂	sulphur dioxide
SO ₄ ²⁻	sulphate
SOEF	South Overburden Emplacement Facility
SOPs	Standard Operating Procedures
SP	Stock Pile

Acronym, Abbreviation or Chemical Formulae	Definition
SPROD	South Perimeter Runoff Dam
SPSD	South perimeter sediment dam
Sr	strontium
SS	State Suburb
SSD	Sub-Statistical Division
SSTV	Site specific trigger value
SW	surface water
SWI	Safe Work Instruction
SWP	Safe Work Procedure
TAFE	Technical and Further Education
TARP	Trigger Action Response Plan
TDS	total dissolved solids
Te	tellurium
Ti	titanium
TIM	total insoluble matter
Tl	thallium
TO	Traditional Owner (Custodian)
TOC	total organic carbon
TOL	Target Operating Level
TOR	Terms of Reference
TPH	total petroleum hydrocarbons
TPWC Act	Northern Territory <i>Territory Parks and Wildlife Conservation Act</i>
TSF	Tailings Storage Facility

Acronym, Abbreviation or Chemical Formulae	Definition
TSP	total suspended particles
TSS	total suspended solids
U	uranium
UC	unclassified
UdH	Upper Dolomitic Shale
UF	Ultrafiltration
UNC	University of Newcastle
UNFCCC COP21	United Nations Framework for Climate Change Conference of Parties
UpH	Upper Pyritic Shale
UpX	Upper Breccia
UQ	University of Queensland
URS	URS Corporation
USEPA	United States Environmental Protection Agency
V	vanadium
V	“Vertical” when referring to slope angle or “Volts” when referring to power
VMU	Vegetation Mapping Units
VOC	Volatile Organic Compound
Vu	Vulnerable
VWP	Vibrating Wire Piezometers
WAN	Wide Area Network
WDL	Waste Discharge License
WEPP	Water Erosion Prediction Program

Acronym, Abbreviation or Chemical Formulae	Definition
WFS	W-Fold Shale
WHO	World Health Organisation
WMD	Water Management Dam
WMS	Water Management System
WOEF	West Overburden Emplacement Facility
WPROD	West Perimeter Runoff Dam
WRM	WRM Water and Environment Pty. Ltd.
WSOs	Workplace Safety Observations
WTP	Water Treatment Plant
XRD	X-ray diffraction
XRF	X-ray fluorescence
Zn	zinc

Table G-3 List of Definitions

Term/Phrase	Definition
Acid and Metalliferous Drainage	The term AMD used in this EIS refers to Acid and Metalliferous Drainage, i.e., all possible impacts including saline drainage (SD), neutral metalliferous drainage (NMD) and acid drainage (AD). These three sub-categories reflect differing risks, potential environmental impacts and potential environmental remediation strategies. This definition is consistent with the official term adopted in Australia, as published in 2007 by the Commonwealth Department of Industry, Tourism and Resources in the guidelines on Acid and Metalliferous Drainage (DITR, 2007). Other common terms used in industry include “Acid Rock Drainage” and “Acid Mine Drainage”.

Term/Phrase	Definition
Acid Buffering Characteristic Curve	The ABCC is determined by slowly acidifying a sample with dilute acid to approximately pH 3 over a 16 to 24-hour period. It typically only accounts for more readily-available carbonates such as calcite and dolomite. When present in sufficient quantity, these minerals will typically buffer a waste rock at near-neutral pH, which is essential for maintaining low metal solubility.
Acid-Base Accounting	The balance between the acid-production and acid-consumption properties of a mine waste material. Minerals in waste material (mostly sulphides and pyrites) react with water and oxygen to produce sulphuric acid. ABA consists of measuring the acid generating and acid neutralizing potentials of a rock sample.
Actions	Proposed measures to limit adverse impacts and maximise opportunities, including environmental protection outcomes.
Advection Barrier	Cover layer to limit movement of gas via advection (Advection being defined as the transfer of heat or matter by the flow of a fluid).
Albion process	Process for concentrating lead and zinc ore developed by MIM.
Alluvial	Deposits of sediments such as silt, clay, sand, gravel, cobbles or other matter deposited by flowing water within a river bed, floodplain, delta or alluvial fan.
Ambient Noise	The sum of (background) noise at a particular location.
ANCOLD Guidelines	"Australian National Committee on Large Dams" guidelines.
Angle of Repose	The maximum angle that a material (e.g. soil, sediment or rock) can be stockpiled without slumping. The angle of repose varies for different types of materials and different moisture conditions.
Annual Exceedance Probability	The probability (or likelihood) that a given rainfall total accumulated over a given duration will be exceeded in any one year.
Anthropogenic	Produced by humans or human-related activity.
ANZECC & AMRCANZ 2000 Guidelines	These guidelines provide guidance on fresh and marine water quality management issues in Australia and New Zealand, including advice on designing and implementing water quality monitoring and assessment programs. In Australia, the ANZECC 2000 Guidelines document forms a part of Australia's National Water Quality Management Strategy (NWQMS), which provides a national approach for achieving sustainable use of Australia's water resources by protecting and enhancing water quality while maintaining economic and social development.

Term/Phrase	Definition
Aquifer	A subsurface feature containing permeable water-bearing material which will yield a usable volume of groundwater. If yields are unsustainable or the water quality is not suitable for its desired use then it would be referred to as a water bearing zone.
Aquifer (confined)	An aquifer that is overlaid by impermeable rock or sediment layers. These units in steady state will be characterised by older and slower moving water. Confined aquifers are also more likely to be under pressure compared to unconfined systems.
Aquifer (unconfined)	An aquifer that is in direct contact with the atmosphere. Unconfined aquifers are usually recharged by rainfall or drainage systems.
A-Weighted Decibels	The measurement of sound pressure level in which the amplitude of the sound signal is negatively weighted in frequencies below 1,000 Hz in accordance with a weighing scale known as the 'A' weighing scale. This scale was established to closely simulate human perception of the relative level of pure tone sounds.
Background scatter	Term used generally by archaeologists to refer to artefacts which cannot be related to a place or focus of past activity (except for the net accumulation of single artefact losses).
Bedrock	The native consolidated rock underlying the Earth's surface, usually overlain by an area of weathered, unconsolidated rock in the basal subsoil.
Berm	Horizontal strip or shelf of rock or soil constructed on an embankment or cut to break the continuity of the slope.
Bioregion	A specific geographic zone with a repeating or similar pattern of biotic (flora and fauna) and abiotic (soils, terrain, geography, climate and rainfall) factors.
Black Bituminous Shale	A lithological unit at MRM characterised by pyritic shales containing elevated levels of organic carbon, as well as selected thick bedded and graded arenites and thin (clay) tuff beds.
Borrow pit	An area that is excavated to provide benign earth / material for use in construction or rehabilitation.
Breccias	Rocks composed of sharp-angled fragments embedded in a fine-grained matrix.
Bund	An embankment that is constructed around an area and/or structure that is designed to prevent inflow or outflow of various liquid types. Can also be referred to as "a bund wall" or "bundling".

Term/Phrase	Definition
Calibrate	To check, adjust, or standardise a measuring instrument, usually by comparing it with an accepted model.
Capillary break	A space or layer between two surfaces which is purposely constructed wide enough to prevent the movement of moisture through the space by capillary action.
Capping	To cover waste rock/overburden with a sealant (low permeable) material such as clay in order to prohibit (or reduce) the ingress of water and/or air.
Capping material	Refer to “Capping” above.
Carbon dioxide equivalent	A single unit for measuring the impact of greenhouse gas emissions by comparing them to the equivalent carbon dioxide emissions.
Catchment	A structure or topographic land feature which collects water.
Closure objectives	A set of MRM specific goals used to determine successful closure of the site.
Colloidal material	Fine textured solids which will not settle out within a water column/body, but which may be removed by coagulation.
Colluvium	A loose deposit of rock debris accumulated through the action of gravity at the base of a cliff or slope.
Concrete Batching	The production of concrete or concrete products by mixing cement with sand, rock, aggregate or other similar materials.
Cooley Dolomite	Occurs along the eastern margin of the MRM ore deposit. It is generally considered to be a fault bounded block of Teena and Mara Dolomite Members which underwent several episodes of brecciation. The Cooley Dolomite commonly hosts coarse grained sphalerite and galena as veins, disseminations and breccia matrix.
Corrective Actions	Management strategies that are to be implemented in the event that targets and objectives are not being achieved.
Datum	A reference location or elevation which is used as a starting point for subsequent measurements. Sea level is a datum for elevation measurements.
Decommissioning	The process of shutting a mine after cessation of mining activities. This involves the removal of buildings, equipment and other redundant infrastructure. Upon completion of decommissioning activities the site will then be rehabilitated (refer separate definition).

Term/Phrase	Definition
Dolomite	A sedimentary rock resembling limestone but consisting principally of the mineral dolomite.
Drawdown	A lowering of the water level of a confined or unconfined aquifer resulting from the pumping of groundwater.
Embankment	A ridge constructed of earth, fill, rocks or gravel and used most commonly to retain water. The length of an embankment exceeds both its width and its height.
Endemic	Native to, or confined to, a certain region.
Environmental objectives	Helps determine what level of environmental management should be applied for relevant environmental factors and the general intent of the EMP. There have been ten closure related objectives developed for the Project (refer to Chapter 4 – Decommissioning, Rehabilitation and Closure).
Ephemeral	Watercourse flows that are short-lived and often reliant upon direct precipitation input.
Equivalent Persons	Unit of measurement used to determine the demand for sewerage reticulation services.
Evaporite	Any sedimentary rock such as rock salt, gypsum or anhydrite that has been formed by evaporation of former seas or salt-water lakes.
Evapotranspiration	The movement of water to the air from sources such as soil, plants and water bodies.
Exploration	The task of identifying areas that may contain viable mineral resources. This can include such activities as surface mapping, remote sensing, exploratory drilling, geophysical testing, geochemical testing and other activities.
Flood	An overflow of water onto lands that are normally above local water levels. Can be caused by stream, creek or river discharges exceeding the capacity of the channel; dam failure; lake level increase or local drainage capacity exceedance.
Flotation	The process of separating different materials (especially minerals) by agitating a pulverized mixture of the source material with water, oil and/or chemicals. Differential wetting of the suspended particles causes unsaturated particles to be carried by air bubbles to the surface for collection.
Footwall	The western wall of the open cut from which operations advance to the east.

Term/Phrase	Definition
Freeboard	The vertical distance between the surface level of the water in a storage facility and the upper surface of the storage facility. In the case of this Project, such facilities include dams or other related facilities such as the tailings storage facility.
Gauging Station	A facility on a stream, lake, canal, reservoir or other water body where instruments are installed to automatically monitor selected water parameters. These can include measurements of height, flow rate discharge, water temperature and pH. Such measurements can be automatically recorded and transmitted to selected personnel (eg. MRM hydrologists) via satellite, radio or telephone.
Geochemistry	The science which uses the tools and principles of chemistry to explain the mechanisms behind major geological systems.
Geology	The structure of a specific region of the earth's crust.
Geomorphology	The study of the physical features of the surface of the earth and their relation to its geological structures.
Geopolymer lining	Low permeability polymer based liner.
Grey water	Non potable (non-drinkable) water that can potentially be reused for irrigation, flushing toilets and other selected purposes.
Heavy vehicle hardstands	Dedicated parking areas for heavy vehicles.
Humbugging	An expectation within the family structures of Indigenous people that money or other commodities will be given by those who possess them in the Aboriginal community to their family members.
Hydraulic	Movement of liquids.
Hydraulic conductivity	Symbolically represented as K; a property of soil or rock that describes the rate (or ability) which water can move through pore spaces or fractures. Such rate depends on the intrinsic permeability of the material and on the degree of saturation. Saturated hydraulic conductivity (Ksat) describes water movement through saturated media.
Hydrocyclones	Conical liquid separator which separates the slurry of ground ore and water according to how finely the rock has been ground.
Impermeable Layer	An impermeable layer of rock, sediment, soil or manmade material that does not allow water to pass through it. Also referred to as an aquiclude.
Infiltration	The process by which surface water laterally enters soil or rock.
Interburden	Non-ore bearing material interspersed within layers of ore.

Term/Phrase	Definition
Irruption	A sudden increase in an animal population.
Lacustrine	Of or relating to lakes.
Lithology	The physical characteristics of a rock.
Lithostratigraphic units	Bodies of rock that are defined and characterised on the basis of their lithologic properties and their stratigraphic relations. These form the basic units of geological mapping.
Lower Dolomitic Shale	The Lower Dolomitic Shale is the immediate footwall interval and consists of interbedded weak pyritic shale, sedimentary turbidite breccia and frequent tuff beds. The shale is often nodular and contains large dolomitic concretions. The interval hosts sub-economic, low level mineralisation including the low grade nodular 1 orebody.
Lower Pyritic Shale	This interval extends from the base of the Black Bituminous Shales to the top of number 8 orebody. It is highly heterogeneous, comprising a succession of pyritic shales interbedded with coarse graded breccia and minor tuff bands. The upper part of the sequence is dominated by shales, while breccia dominates the lower part of the sequence, thickening towards the north.
Macroinvertebrate	An invertebrate large enough to be seen without magnification.
Macropod	Meaning “large-foot”; a member of the family Macropodidae, i.e. wallabies and kangaroos.
MAWA	Local Aboriginal Corporation.
McArthur River Mine	The existing operation.
McArthur River Mine Overburden Management Project	The proposed Project the subject of this EIS, which encompasses all Project aspects that significantly vary from the Phase 3 Development approval.
McArthur River Mine Phase 3 Development Project	Life of Mine Plan proposed and approved in 2012/2013.
Monitoring Programs	Programs implemented to allow early detection of adverse environmental impacts (includes analysing, assessing, examining, inspecting, measuring, modelling and/or reporting).
MS-NAF(HC)	Material considered at low risk of generating Acid and Metalliferous Drainage but a higher risk of generating neutral metalliferous drainage and saline drainage. Generally characterised by a high acid consumption capacity.

Term/Phrase	Definition
MS-NAF(LC)	Material considered at low risk of generating Acid and Metalliferous Drainage but higher risk of generating neutral metalliferous drainage and saline drainage. While non-acid forming, this material is likely to provide limited to no acid consumption capacity.
MV Aburri	Bulk carrier designed to transport concentrate to sea-going vessels.
Net acid generation	Measures the acidity after oxidation and is expressed as kilograms of sulphuric acid per tonne of rock.
Net acid producing potential	Indicates if a material has the potential to generate acid rock drainage. It represents the balance between the capacity of a sample to generate acid (TAPP) and its capacity to neutralise acid (ANC). The NAPP is also expressed in units of kg of H_2SO_4 per tonne of ore and is calculated as follows: $NAPP = TAPP - ANC$.
Neutral Metalliferous Drainage	Refers to drainage characterised by circumneutral pH waters with elevated metal concentrations and potentially elevated salinity.
Non-acid forming	A description for material not expected to produce acid.
Open cut dewatering	The act of removing groundwater from around the edges of an area to be developed as an open cut. This process precludes groundwater from entering the open cut to facilitate the safe and efficient mining of ore and overburden materials.
Overburden	Non-ore bearing material overlying and surrounding the ore.
Oxidation	A chemical reaction in which substances combine with oxygen.
PAF(HC)	Material considered at higher risk of generating AMD.
PAF(RE)	Material considered at higher risk of generating AMD, and has the highest capacity to do so.
Palaeochannel	Remnant of an inactive river or stream channel that has been filled or buried by sediment.
Peak Flow	The maximum instantaneous discharge of a stream or other form of water course at a specific location.
Peak Particle Velocity	A measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres / second.
Performance Indicators	Measures by which all anticipated and potential impacts can be measured.

Term/Phrase	Definition
Permeability	A measure of how well a material can transmit water. Materials such as gravel, that transmit water quickly, have high permeability values. Permeability is primarily determined by the size of the pore spaces and their degree of interconnection.
pH	A measure of the acidity (pH<7) or alkalinity (pH>7) of water based upon a scale that ranges between 0 and 14, with 7 representing neutral conditions.
Potentially acid forming	A description of material that may produce acid.
Proponent	McArthur River Mining Pty. Ltd.
Rail	A bird of the family Rallidae.
Rehabilitation	The process of returning the site/land to some degree of its former state (as defined by specified Project closure objectives).
Relevant Legislation, Guidelines and Standards	Applicable NT and/or Commonwealth Acts, Regulations or supporting guidelines which prescribe performance standards for planning approvals and permits; and mine construction, operations and closure phases. Industry standards that either prescribe (via legislation) required performance standards or provide guidance on desired performance.
Reporting Procedures	Formal and/or informal processes to document and transmit the results of MRM's implementation of the EMP, including the various management, monitoring, auditing and incident response programs.
Responsibility	The position/person at MRM responsible for implementation of all, or some identified aspect of, the EMP.
Responsible Agency	Name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.
Saline Drainage	Refers to drainage characterised by elevated salinity, but circumneutral pH and metal concentrations similar to background levels.
Screening	Method of separating crushed rock into different size fractions by shaking the rock material over/across different screens which have varying sized apertures (holes or gaps). The crushed rock that passes through the screens is referred to as "undersize".
Seepage	Loss of water from a man-made structure such as a dam or an overburden emplacement facility via movement of water through the base or toe (lower extremities).
Shale	A fissile rock composed of layers of claylike, fine-grained sediments.

Term/Phrase	Definition
Site Safe	MRM's electronic incident reporting process.
Spillway	A weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the reservoir when pondage levels rise above freeboard storage levels. These can include secondary, auxiliary, or emergency spillways or fuse plugs.
Spontaneous Combustion	A natural process which occurs when certain rock types can undergo chemical reactions when exposed to air or water. The result of the reaction can release smoke and sulphur dioxide.
Stochastic	Pertaining to a process involving a randomly-determined sequence of observations.
Stratigraphy	The study of rock strata, especially the distribution, deposition, and age of sedimentary rocks.
Strip ratio	The ratio of the tonnes of waste rock mined to the tonnes of ore mined.
Tailings	The solid, fine grained residual waste material produced after the processing of ore.
Target	Specific indicators to assist in determining if the objectives of the EMP are being met. They define the goal to which actions can be set.
Teena Dolomite	Underlies the W-fold Shale, the contact with which is gradational. The unit is a light grey dolomite with occasional clay tuff beds. It generally contains no sulphide minerals.
Topography	The land forms or surface configuration of a region.
Transmissivity	The measure of how much water will transmit horizontally through a hydrogeological unit. Represented by the symbol "T", and typically measured in square metres per day (m ² /day).
Upper Breccia	The Upper Breccia occurs at the top of the MRM geological sequence and consists of poorly sorted sedimentary breccia with occasional volcanic and sandstone clasts. It is essentially un-mineralised and contains no to very little sulphides. It only occurs south of the Woyzbun Fault, so is restricted to the southeast of the open cut.
Upper Dolomitic Shale	This MRM lithological unit occurs beneath the Upper Breccia in the southeast corner of the deposit, and is the uppermost lithology in the remainder of the open cut area. It is characterised by generally very weakly pyritic dolomitic shale with minor tuff and graded turbidites.
Upper Pyritic Shale	The Upper Pyritic Shale comprises pyritic shale with numerous thinly graded beds and occasional tuff bands.

Term/Phrase	Definition
Vagrant	A bird that has strayed or been blown from its usual range or migratory route.
Wetted up	When a stockpile of waste rock or overburden material is fully saturated due to infiltration and storage of water within the material pore space.
W-fold Shale	Underlies the Lower Dolomitic Shale. This interval consists of green and red shales, with frequent clay tuff beds. It generally contains no sulphide minerals.