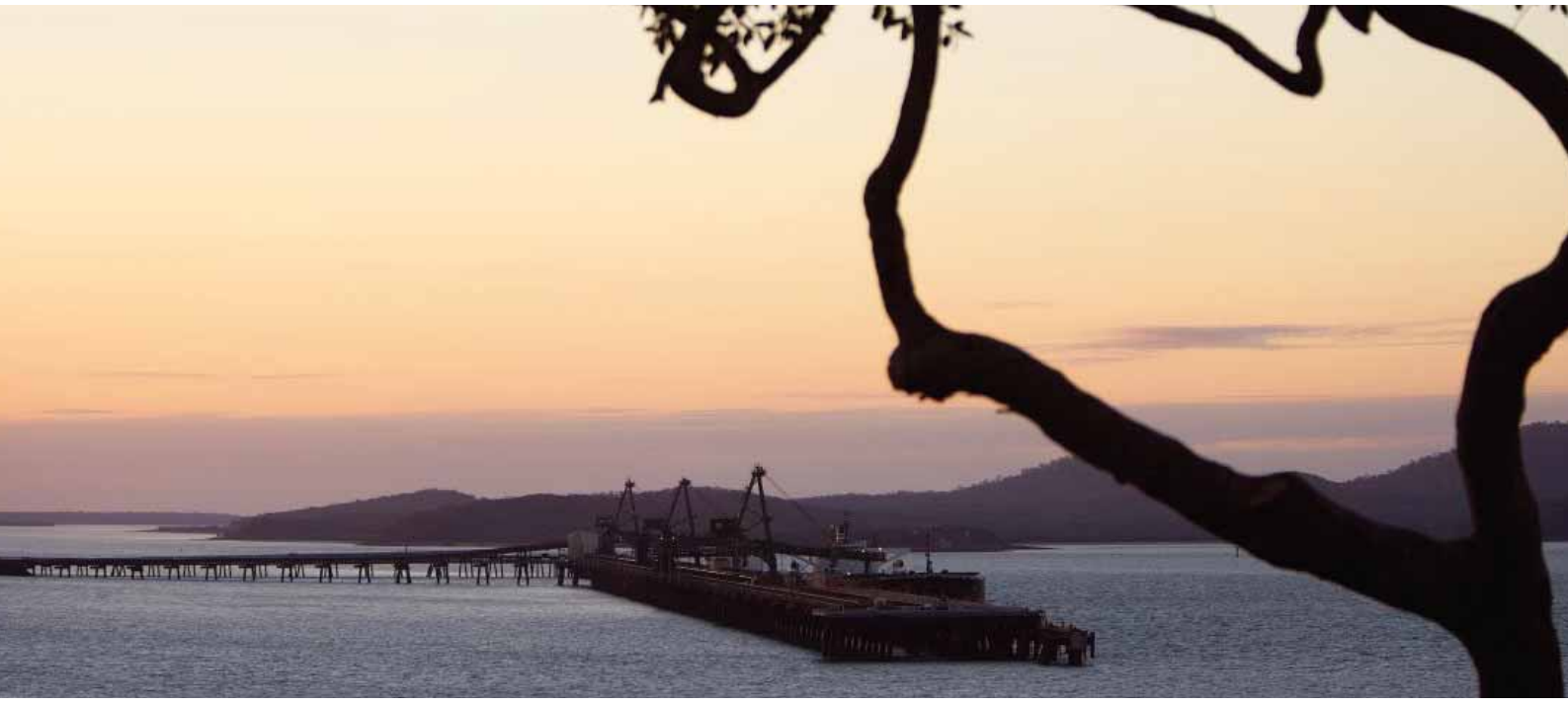
3 EIS Supplement Glossary and Abbreviations



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EIS Supplement Glossary and Abbreviations

Abbreviation	Description
2D	Two-dimensional
2P	Proven and probable
AADT	Annual Average Daily Traffic
AASS	Actual Acid Sulfate Soils
ABS	Australian Bureau of Statistics
Abstraction	The removal of water from a resource e.g. the pumping of groundwater from an aquifer. Interchangeable with extraction
ACEA	Australian Consulting Engineers Association
ACHA	Aboriginal Cultural Heritage Act
ADCP	Acoustic Doppler Current Profiler
ADWG	Australian Drinking Water Guidelines
AEC	Aboriginal Employment Contract
AEP	Aboriginal Engagement Policy
AEP	Annual Exceedence Period
Aerobic	Said of conditions that can exist only in the presence of free oxygen
AGRU	Acid gas removal unit
AHD	Australian Height Datum – this datum has been adopted by the National Mapping Council as the datum to which all vertical control for mapping is to be referred. Generally approximates mean sea level
AHPI	Australian Heritage Places Inventory
AIM	Audit and Inspection Manager
Alluvial	Sediments deposited by flowing water
Alluvium	A general term for unconsolidated deposits of inorganic materials (clay, silt, sand, gravel, boulders) deposited by flowing water
Alluvium aquifer	An aquifer formed of unconsolidated material deposited by water, typically occurring adjacent to river channels and in buried or palaeochannels
ALS	Australian Laboratory Services Pty Ltd
Anaerobic	A process taking place in the absence of oxygen
ANC	Acid Neutralising Capacity
ANRA	Australian Natural Resources Atlas
Antecedent	Preceding in time of order
ANZECC	Australian New Zealand Environment and Conservation Council
AOPC	Area of Potential Concern
APCI	Air Products and Chemicals International
API	American Petroleum Institute
APIA	Australian Pipeline Industry Association
APLNG	Australia Pacific LNG
APPEA	Australian Petroleum Production and Exploration Association
AQIS	Australian Quarantine and Inspection Service
Aquatic Ecosystems	The abiotic (physical and chemical) and biotic components, habitats and ecological processes contained within rivers and their riparian zones and reservoirs, lakes, wetlands and their fringing vegetation
Aquifer	An aquifer is defined as a saturated permeable geological unit that is permeable enough to yield economic quantities of water to boreholes

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
Aquifer testing	The process whereby an aquifer is subjected to pumping from a borehole under controlled test conditions. This is carried out to determine the hydraulic parameters of the aquifer and assess aquifer performance through its response to stress of abstraction
Aquitard	A saturated geological unit with a relatively low permeability that retards and restricts the movement of water, but does not prevent the movement of water; while it may not readily yield water to boreholes and springs, it may act as a storage unit
ARI	Annual Reoccurrence Interval
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AR&R	Australian Rainfall and Runoff
Artesian aquifer	An adjective referring to groundwater under hydrostatic pressure (confined aquifer)
Artesian borehole	An adjective commonly used to describe a flowing borehole, where the piezometeric level is at an elevation higher than ground level
Artesian storage	Storage within a confined aquifer is limited due to the aquifer and water not being compressible or expandable, thus little water is released from or taken into storage by a unit change in water level
AS	Australian Standard
ASC	Australian Soil Classification
ASGC	Australian Standard Geographical Classifications
ASS	Acid Sulphate Soil
ASSMP	Acid Sulphate Soil Management Plan
AST	Above Ground Storage Tank
ATP	Authority to Prospect
ATSB	Australian Transport Safety Bureau
AW	Associated Water
AWMS	Associated Water Management Strategy
AWQG	Australian Water Quality Guidelines
B	Boron
BAAM	Biodiversity Assessment and Management
BAL	Basic Left Turn Treatment
BAR	Basic Right Turn Treatment
Baseflow	The amount of groundwater flowing into a river
BATNEEC	Best Available Technology Not Entailing Excessive Cost
BCC	Brisbane City Council
BGL	Below Ground Level
BH	Boreholes
Biodiversity	The number and variety of organisms found within a specified geographic region or within a given ecosystem
Bioregion	A landscape pattern that reflect changes in geology and climate, as well as major changes in floral and faunal assemblages at a broad scale
BLEVE	Boiling Liquid Expanding Vapour Explosion
BLM	US Bureau of Land Management
BOD	Biological Oxygen Demand

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Abbreviation	Description
BOG	Boil Off Gas
BOM	Bureau of Meteorology
Bore	Includes a well, excavation, or any other artificially constructed or improved groundwater cavity which can be used for the purpose of intercepting, collecting or storing water from an aquifer; observing or collecting data and information on water in an aquifer; or recharging an aquifer. Interchangeable with borehole, wells, piezometers
Borehole	Includes a well, excavation, or any other artificially constructed or improved groundwater cavity which can be used for the purpose of intercepting, collecting or storing water from an aquifer; observing or collecting data and information on water in an aquifer; or recharging an aquifer. Interchangeable with bores, wells, piezometers
BOP	Blow Out Preventer
Bq	becquerels
Brackish	Water that contains between 1,000 and 10,000 mg/l of dissolved solids
Brigalow Belt	Is a Bioregion that spans inland and eastern Queensland from Townsville in the north to northern New South Wales, covering an area of about six million hectares
Brine	Water that contains more than 35,000 mg/l of dissolved solids
BTEX	Benzene, Toluene, Ethyl-benzene, m+p Xylenes, o-Xylene
BTRE	Bureau of Transport and Regional Economics
C3MR	Propane Pre-cooled Mixed Refrigerant LNG Process
C	Carbon (elemental)
Ca	Calcium
CAF	Construction Accommodation Facility (Curtis Island)
Carbon dioxide equivalents	GHG emissions unit used to provide a common unit of measure between the various greenhouse gases due to their differing GWP
Carbonaceous	The defining attribute of a substance rich in carbon
CASA	Civil Aviation Safety Authority
Catchment	The area of land that collects and transfers rainwater into a waterway
CBD	Central Business District
CBM	Coal Bed Methane
CCRC	Coastal Cooperative Research Centre
CCS	Carbon Capture and Storage
CD	Census Collection District
CEC	Cation Exchange Capacity
CEMP	Construction Environmental Management Plans
CEO	Cardno Eppell Olson
CFCs	Chlorofluorocarbons
CG	Coordinator General
CH_4	Methane
CHMP	Cultural Heritage Management Plan
CHRC	Central Highlands Regional Council
CICSDA	Callide Infrastructure Corridor State Development Area
CITES	Convention on International Trade in Endangered Species of Wild Fauna

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
	and Flora
Cl	Chlorine
CIIP	Curtis Island Industry Precinct
CLR	Contaminated Land Register
CM	Consultation Manager
CMS	Convention on the Conservation of Migratory Species of Wild Animals
CMSHA Act	Coal Mining Safety and Health Act 1999
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2-e	Carbon dioxide equivalents
Coastal Act	Queensland Coastal Protection and Management Act 1995
Coastal CRC	CRC for Coastal Zone, Estuary and Waterway Management
Colluvium	A general term applied to any loose, heterogeneous and incoherent mass of soil material and/or rock fragments deposited by rainwash, sheetwash, or slow continuous downhill creep (Bates & Jackson, 1987)
Cone of depression	The shape of the cone with convex upward, of the piezometeric groundwater surface which defines the area of influence of a borehole
Confined aquifer	An aquifer bounded above and below by impervious layers. In a confined aquifer the water is under sufficient pressure to cause it to rise above the top of the aquifer if given the opportunity, e.g. if penetrated by a bore
Confining layer	A layer of low permeability material underlying or overlying an aquifer, which restricts the vertical movement of water
Conservation Significant Species	See definition for 'Threatened Species' below
Contamination	The introduction of any substance into the environment by the action of man
CoP	ConocoPhillips
CoRTN	Calculation of Road Traffic Noise
CPI	Corrugated Plate Interceptor
CPIC	Common Pipeline Infrastructure Corridor
CPRS	Carbon Pollution Reduction Scheme
CQCHM	Central Queensland Cultural Heritage Management
CQGP	Central Queensland Gas Pipeline
CQRGMS	The Central Queensland Regional Growth Management Strategy
CQSS	The Central Queensland Strategy for Sustainability
CQSS2	The Central Queensland Strategy for Sustainability – 2004 and Beyond
CRC	Cooperative Research Centre
CRIMP	Centre for Research on Introduced Pests
CRS	Chromium Reducible Sulphur
CSD	Cutter Suction Dredge
CSG	Coal Seam Gas
CSG field	is a field in the RFD Area or the FD Area
CSG Field Study Area	Is defined as the combined area of both the RFD area and the FD area.
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cu	Copper

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
Curtis Coastal Plan	Curtis Coast Regional Coastal Management Plan
DAFF	Department of Agriculture Fisheries and Forestry
Darcy	A unit of intrinsic permeability. (Refer to Permeability (2)). It is not an SI unit, but is widely used in petroleum engineering and geology. A medium with a permeability of 1 Darcy permits a flow of 1 cm/sec of a fluid with a viscosity of 1 centipoise under a pressure gradient of 1 atmosphere/cm. To convert to equivalent values of hydraulic conductivity for water at normal atmospheric conditions, 1 millidarcy (mD) = 8.64 x 10-4 m/d
Darcy's Law	Named after the Frenchman Henry Darcy, Darcy's law states that the rate 'Q' (m^3/day) at which water flows through a cross-sectional area 'A' (m^2) of a porous medium, such as sand, along a distance 'L' (m) is directly proportional to the head loss (i.e. the change in water level) 'Δh' (m) over the distance 'L' and inversely proportional to the distance travelled 'L'. i.e. Q = KA(Δh/L) where the constant of proportionality K is known as the hydraulic conductivity (also called the coefficient of permeability)
dB	Decibel ratio
dBA	Decibels – A-weighted
DCS	Distributed Control System
DECC	Department of Environment and Climate Change
Deep groundwater	Groundwater resources associated with the CSG coal seam aquifers and resources at depths > 100 m
Deep Groundwater Aquifer	Groundwater > 100m
DEMs	Digital Elevation Models
DES	Department of Emergency Services
DETA	Department of Education, Training and the Arts
DEWHA	Commonwealth Department of the Environment, Water, Heritage and the Arts
DGA	Dense Graded Asphalt
dGPS	differential Global Positioning system
DGSM Act	Dangerous Goods Safety Management Act 2001
DIDO	Drive in, drive out
DIP	Department of Infrastructure and Planning
Dissolved solids	Minerals and organic matter dissolved in water
DIWA	Directory of Important Wetlands in Australia
DME	Department of Mines and Energy
DMP	Dredging Management Plan
DMPF	Dredge Material Placement Facility
DMR	Queensland Government Department of Main Roads
DNRM	Department of Natural Resources and Mines
DNRW	Department of Natural Resources and Water
DO	Dissolved Oxygen
DOS	Degree of Saturation
DPA	Dugong Protection Area
DPI	Department of Primary Industries

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
DPIF	Department of Primary Industries and Fisheries
Drawdown	The distance that the groundwater level in a bore is lowered from the standing water level when influenced by pumping
DSA	Design Storage Allowance
DTMR	Department of Transport and Main Roads
DWT	Dead Weight Tonnes
EA	Environmental Authority
EC	Exceptional Circumstances
EC	Electrical Conductivity
Ecological	Relating to the relationships between organisms and their environment
Ecology	Scientific study of abundance, distribution and interactions between organisms and their natural environment.
Ecosystem	An organic community of plants, animals and bacteria and the physical and chemical environment they inhabit
EEO	Energy Efficiency Opportunities
Effective storage	The volume of groundwater an aquifer takes in and releases is limited by the storage capacity. Aquifers may be regularly recharged but have insufficient storage to contain the recharge thus seasonal seeps are formed and the aquifer is incapable of storing groundwater volumes over extended dry periods
EHMS	Employee Health Management Systems
EHS	Environment, Health and Safety
EHSMS	Environment, Health and Safety Management System
EIL	Environmental Investigation Level
EIS	Environmental Impact Statement
EITE Assistance	Emissions Intensive Trade Exposed Assistance
Emission factor	Calculation factor expressing GHG emissions per unit of activity
Emissions intensity	Tonnes of GHG emissions per tonne of product, a measure of the efficiency of a process in terms of GHG emissions
EMP	Environmental Management Plans
EMR	Environmental Management Register
EOC	Emergency Operations Centre
EP (Waste) Regulation	Environmental Protection (Waste Management) Regulation 2000
EP Act	Environmental Protection Act 1994
EP Regulation	Environmental Protection Regulation 1998
EPA	Environmental Protection Agency
EPBC	Environment Protection and Biodiversity Conservation
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPC	Exploration Permits for Coal
EPCM	Engineering, Procurement and Construction Management
Ephemeral	Lasting for a short amount of time, e.g. ephemeral waterways are often dry
Ephemeral river	These rivers are generally storm-event driven and flow occurs less that 20% of the time; these rivers have limited baseflow component with no groundwater discharge
EPM	Exploration Permits for Minerals

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
EPP	Environmental Protection Policy
EPP (Air)	Environmental Protection (Air) Policy 2008
EPP (Noise)	Environmental Protection (Noise) Policy 2008
EPP (Waste)	Environmental Protection (Waste Management) Policy 2000
EPP (Water)	Environmental Protection (Water) Policy 1997
EQ	Eastern Queensland
EQG WMP	Eastern Queensland Gas Waste Management Plan
ERA	Environmental Relevant Activities
ERE	Endangered Regional Ecosystem
Erosion	The wearing away of rock or soil caused by physical or chemical processes
ERP	Emergency Response Plan
ERT	Emergency Response Team
ESA	Environmentally Sensitive Areas
ESA	Equivalent Standard Axle
ES Act	Electrical Safety Act 2002
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically Sustainable Development
ESP	Exchangeable Sodium Percentage
ESS	Emergency Shutdown System
ESSA	Emergency Systems Survivability Analysis
EVR	Endangered, Vulnerable and Rare
Facies	An areally delimited, mappable sedimentary body associated by either character or depositional provenance
Fault	A zone of displacement in rock formations resulting from forces of tension or compression in the earth's crust
FD Area	Is defined as the future development areas. This is the combined area of Denison Trough, Mahalo, Comet Ridge, Surat Basin East, Roma other and Scotia.
FEED	Front End Engineering Design
FHA	Fish Habitat Area
FHA	Fire Hazard Analysis
FHMOP	Fish Habitat Management Operational Policy
FIDIC	International Federation of Consulting Engineers
FIFO	Fly in, fly out
Fitness for use	Water quality is such that it meets the requirements for a particular use; domestic, agricultural, industrial, recreational, or environmental
Flow boundary	Any geologic, geomorphic or hydrologic feature which impedes the normal groundwater flow regime. An impermeable rock mass, such as bedrock, a feature which hinders flow across it, such as a fault, or drawdown resulting from other pumping bores constitute impermeable boundaries and result in an increase in the rate of drawdown. A surface body of water, such as a lake or stream, which intersects the aquifer constitutes a recharge boundary and results in a reduction in the rate of drawdown
FLW	Fishermans Landing Wharf

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Abbreviation	Description
FOC	Fibre Optic Cable
Formation	A general term used to describe a sequence of rock layers
Foraminifer	A microscopic, primarily marine organism (protozoan of the subclass Sarcoina, order Foraminifera) characterised by the presence of a test of one or more chambers composed of secreted calcite
Fossil fuel	A hydrocarbon deposit, such as petroleum, coal, or natural gas, derived from living matter of a previous geologic time and used for fuel
FPC	Foliage Projection Cover
Fracture	Any break in a rock including cracks, joints, and faults
Fractured aquifer	An aquifer that owes its water-bearing properties to fracturing caused by folding and faulting
Fresh water	Water that contains less than 1,000 mg/l salts
FRP	Free Reactive Phosphorus
FTE	Full Time Employee
Full fuel cycle	Includes both Scope 1 emissions and Scope 3 emissions due to transmission losses, extraction and transport
GAB	Great Artesian Basin
GAMS	Gladstone Airshed Modelling System
GAWB	Gladstone Area Water Board
GBR	Great Barrier Reef
GBRMP	Great Barrier Reef Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
GBRWHA	Great Barrier Reef World Heritage Area
GCC	Gas Control Centre
GDE	Groundwater dependent ecosystems
GDP	Gross Domestic Product
Geomorphology	'The science that treats the general configuration of the Earth's surface; specif. the study of the classification, description, nature, origin, and development of present landforms and their relationship to underlying structures, and of the history of geologic changes as recorded by these surface features' (Bates and Jackson, 1987; p.272)
GHG	Greenhouse gas
GIA	Gladstone Industrial Area
GIRTP	Gladstone Integrated Regional Transport Plan
GIS	Geographic Information Systems
GLNG	Gladstone Liquefied Natural Gas project
Global warming potential	Measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the gas in question to that of the same mass of CO_2 whose GWP is defined as 1.
GLPRRI	Gladstone Land Port Rail Road Infrastructure Study 2007
GP	General practitioner
GPA	Gladstone Ports Authority
GPC	Gladstone Port Corporation
GPN	Gladstone Pacific Nickel
GPNR	Gladstone Pacific Nickel Refinery

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Abbreviation	Description
GQAL	Good Quality Agriculture Land
GRC	Gladstone Regional Council
Greenhouse Gas	Any of the atmospheric gases that contribute to the greenhouse effect by absorbing infrared radiation produced by solar warming of the Earth's surface. They include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (NO_2), and water vapor
Greenhouse Gas Protocol	Corporate accounting and reporting standards for GHG emissions developed by the World Business Council
Groundwater	Water found in the subsurface in the saturated zone below the water table or piezometeric surface i.e. the water table marks the upper surface of groundwater systems
Groundwater flow	The movement of water through openings and pore spaces in rocks below the water table i.e. in the saturated zone
Groundwater resource	All groundwater available for beneficial use, including man, aquatic ecosystems and greater environment
GRT	Giant Rats Tail (grass)
GSDA	Gladstone State Development Area
GSP	Gross State Product
GSQ	Geological Survey of Queensland
GTA	Gas turbine alternator
GTP	Gas Transmission Pipeline
GWP	Global warming potential
H_2S	Hydrogen sulfide
Ha	Hectare
Habitat	The area or natural environment in which an organism or population normally lives. A habitat is made up of physical factors such as soil, moisture, range of temperature, and availability of light as well as biotic factors such as the availability of food resources and the presence of predators
HAS	Heritage and Archaeological Sites
HAT	Highest Astronomical Tide
HAZID	Hazard Identification Exercise
HAZOP	Hazard and Operability Studies
HCO_3	Bicarbonate
HDD	Horizontal Directional Drilling
HDPE	High Density Polyethylene
HEC RAS	Hydrologic Engineering Center River Analysis System
Herbarium	Institution where a collection of dried plants are mounted, labelled, and systematically arranged for use in scientific study as reference material for describing plant taxa.
HERBRECS	A database maintained by the Queensland Herbarium that provides a list of specimens and collections for a specified search area.
Heritage Precinct	Historic and Archaeological Sites
HFE	Human Factor Engineering
HI	Historical Indictor
HILs	Health based Investigation Levels

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
Holocene	Holocene is the name of a geological time epoch commencing ~10,000 years ago and extending to present. Pre-Holocene is the time preceding this epoch. The Immediate time epoch preceding is the Pleistocene time epoch, however, sediments immediately underlying those of Holocene-age may have been deposited much earlier than the Pleistocene, and are therefore referred generally as pre-Holocene in age
Hydraulic conductivity	Measure of the ease with which water will pass through earth material; defined as the rate of flow through a cross-section of one square metre under a unit hydraulic gradient at right angles to the direction of flow (m/day)
Hydraulic gradient	This is the change in the hydraulic head over a certain distance
Hydraulic head	Elevation to which water will rise in a borehole connected to a point in an aquifer
Hydrodynamic	Of, relating to, or operated by the force of liquid in motion
Hydrograph	A graph that shows groundwater or surface water properties as a function of time
Hydroisostatic	As sea level rises over broad continental shelves the additional weight of the water creates subsidence on the outer shelf which is compensated for by a rise of the inner shelf and coastal plain
Hz	Hertz
IAs	Impact Assessments
IAS	Initial Advice Statement
ICM	Integrated Catchment Management
IDAS	Queensland's Integrated Development Assessment System
ILUA	Indigenous Land Use Agreement
IMS	Incident Management System
INCA	Infrastructure Corridor Assessment
Incipient	beginning, coming into, or in an early (or initial) stage of existence
Infiltration	The downward movement of water from the atmosphere into the ground; not to confused with percolation
Intercalated	Said of layered material that exists or is introduced between other layers of a different character (Bates &Jackson, 1987)
Intersticed	An intervening space of time; an interval between actions
Interstitial Water	Subsurface water in the voids of a rock or pores of a sediment (i.e. or porewater)
Interfluve	Area between rivers; esp. the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction (Bates &Jackson, 1987)
Invertebrate	Animals that don't have a backbone, e.g. insects, crustaceans.
IP Act	Integrated Planning Act
IPCC	Intergovernmental Panel on Climate Change
ISQG	Interim Sediment Quality Guidelines
IUCN	International Union for the Conservation of Nature
JSA	Job Safety Analysis
JTA	JTA Australia
Kbbls/d	Thousand Barrels per Day

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Abbreviation	Description
kg	Kilogram
kHz	Kilohertz
KL	Kilo Litres
Km	Kilometre
KPs	Kilometre Points
KRA	Key resource area
kt	Kilotonnes
kVa	Kilovolt-ampere
L	Litre
Laterite	A highly weathered red subsoil or material rich in secondary oxides of iron, aluminium, or both (Bates &Jackson, 1987)
$L_{A\ 90}$	A-weighted sound pressure level that is equalled or exceeded for 90% of the time interval of monitoring. It is considered the background noise level
$L_{A\ eq}$	Average energy A-weighted sound pressure level for the time interval of monitoring
$L_{A\ max}$	The highest momentary sound pressure level of a noise event(s) or measurement period
$L_{A10(18hour)}$	Average of the hourly LA10 noise levels between the hours of 6 am and midnight
LAT	Lowest astronomical tide
LCZ	Landscape Character Zone
LDM	LeProvost, Dames and Moore
LGA	Local Government Area
Life Cycle Analysis	An analysis of the total environmental impact of a product or item including all aspects of its existence from raw material production to ultimate disposal
Lithology	The physical character of rocks
LNAPL	Light Non-aqueous Phase Liquid
LNG	Liquefied Natural Gas
LNGC	Liquefied Natural Gas Carrier
LOR	Limit of Reporting
LP Act	Queensland Lands Protection (Pest and Stock Route Management) Act 2002
$L_{PA,LF}$	Low frequency Sound Pressure
LPG	Liquefied Petroleum Gas
LTV	Long-term Trigger Values
LWD	Low Water Depth
m	Metre
m^3	Cubic Metre
m AHD	Measurements in metres relative to the Australian Height Datum
MAP	Mean annual precipitation
MAOP	Maximum Allowable Operating Pressure
Marpol	International Convention for the Prevention of Pollution from Ships
mbgl	Metres Below Ground Level

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Abbreviation	Description
MCA	Multi Criteria Assessment
MCS	Moomba Carbon Storage
MDLs	Mineral Department Licenses
MDQ	Maximum Daily Quantity
Mesotidal	Spring tide range of 2-4m
Mg	Magnesium
mg	Milligram
mg/l	Milligrams per litre
mg/Nm^3	Milligram per Normal cubic meter
MHF	Major Hazard Facility
MHWN	Mean High Water Neap
MHWS	Mean High Water Spring
MIC	Maximum Instantaneous Charge
Microtidal	Spring tide range <2m
ML	Mining Lease
MLV	Mainline Valve
MLWN	Mean Low Water Neap
MLWS	Mean Low Water Spring
mm	Millimetre
MMA	Manual metal arc
MMscf	Million Standard Cubic Feet
MNES database	Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) Matters of National Environmental Significance database
MOF	Materials Off-loading Facilities
Mol H+/t	A unit of measurement of acidity determined through laboratory testing: moles of hydrogen ions per tonne of soil
MP Act	Marine Parks Act 2004
MPGBRC	Marine Parks Great Barrier Reef Coast
MPI	Maximum Potential Intensity
MSDS	Material Safety Data Sheet
MSIC	Maritime Security Identification Card
msp	Mean Squared Sound Pressure
MSQ	Maritime Safety Queensland
Mt	Million tonnes
Mtpa	Million tonnes per annum
MUTCD	Manual of Uniform Traffic Control Devices
MW	Mega-Watt
N_2O	Nitrous Oxide
NATA	National Association of Testing Authorities
NC Act	Nature Conservation Act 1992
Near Surface Groundwater Aquifer	Groundwater < 100m
NEPC	National Environmental Protection Council
NEPM	National Environment Protection Measure (Movement of Controlled Waste

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Abbreviation	Description
	between States and Territories)
NFPA	National Fire Protection Association
NGA	National Greenhouse Accounts, GHG emissions workbook published by the Australian Department of Climate Change
NGER	National Greenhouse and Energy Reporting Act 2007
NGL	Natural Ground Level
NH_4	Ammonia
NLWRA	National Land and Water Resource Audit
NO_2	Nitrous oxide
NO_3	Nitrate
NODGDM	National Ocean Disposal Guidelines for Dredged Materials
NO_x	Oxides of nitrogen
NPI	National Pollution Inventory
NPV	Net Present Value
NRW	Natural Resources and Water (Department of)
NSED	National Strategy for Ecologically Sustainable Development
NSW	New South Wales
NTA	Native Title Act 1993
NTU	Nephelometric Turbidity Unit
NWQMS	National Water Quality Management Strategy
OC	Organochlorine pesticides
OCP	Optimised Cascade Process (OCP)
OESR	Office of Economic and Statistical Research
OLS	Obstacle Limitation Surface
OP	Organophosphate pesticides,
Oxidation	The addition of oxygen to a compound; entails the loss of an electron
P&G (PS) Act	Petroleum and Gas (Production and Safety) Act 2004
PAH	Polycyclic Aromatic Hydrocarbon
Palaeochannel	A buried stream channel
Palaeo	Denoting great age or remoteness in regard to time – ancient conditions
PAMs	Pre-assembled Modules
PASS	Potential Acid Sulfate Soils
PAWC	Plant Available Water Capacity
PCB	Polychlorinated Biphenyl
PCCC	Port Curtis Coral Coast Aboriginal Corporation
PCIMP	Port Curtis Integrated Monitoring Program
Permeability	The ease with which a fluid can pass through a porous medium and is defined as the volume of fluid discharged from a unit area of an aquifer under unit hydraulic gradient in unit time (m/day)
PFL	Petroleum Facility Licence
pH	Absolute value of the decimal logarithm of the hydrogen-ion concentration (activity). Used as an indicator of acidity (pH < 7) or alkalinity (pH > 7)
pH_F	Field pH

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
pH_{FOX}	Oxidised field pH
pHKCl	The pH (measure of acidity or alkalinity) of a suspension prepared in the laboratory involving 1:40 (weight/volume) soil in a solution of 1 M potassium chloride
PHA	Preliminary Hazard Analysis
Piezometric level	The elevation to which groundwater levels rise in boreholes that penetrate confined or semi-confined aquifers
Piedmont	Lying or formed at the base of a mountain or mountain range; e.g. a piedmont terrace or pediment. (Bates & Jackson, 1987)
PIFU	Planning Information and Forecasting Unit
Pigging operations	Pigging in the maintenance of pipelines refers to the practice of using pipeline inspection gauges or 'pigs' to perform various operations on a pipeline without stopping the flow of the product in the pipeline.
Pisolitic	The texture of rock made up of pisoliths or pea-like grains (Bates & Jackson, 1987)
PJ	Petajoules
PL	Petroleum Lease
PLF	Product Loading Facilities
Pleistocene	A time epoch of the Quaternary period. It began ~2-3 million years ago and extended to the commencement of the Holocene epoch ~10,000 years ago
PM_{10}	Inhalable particulate matter with aerodynamic diameter less than 10 µm
$PM_{2.5}$	Inhalable particulate matter with aerodynamic diameter less than 2.5 µm
PNLs	Planning Noise Levels
PoBC	Port of Brisbane Corporation
Pollution	The introduction into the environment of any substance by the action of man, which is or results in significant harmful effects to man or the environment
Pollution plume	Area of degraded water in a stream or aquifer resulting from migration of a pollutant
Porosity	The porosity of a water-bearing formation is determined by that part of its volume consisting of openings or pores
PPF	Principal Profile Form
PPL	Petroleum Pipeline Licence
PPU	Pilot Portable Units
PPV	Peak Particle Velocity
Preferential flow	The preferential movement of groundwater through more permeable zones in the subsurface
Proponent	Santos Limited
Prodelta	Extension of the delta influence beyond the delta front as a wedge of fine sediment gently sloping to the floor of the basin
Progradation	The building forward or outward toward the sea of a shoreline or coastline
Proto	First in time, earliest, original, primitive
PSA	Particle Size Analysis
PSD	Process Shutdown System
PSI	Preliminary Site Assessment
PSLA	Petroleum (Submerged Lands) Act 1982

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
PTS	Permanent Threshold Shift
PTW	Permit to Work
PUR1P	Place of Usual Residence One Year Ago
PUR5P	Place of Usual Residence Five Years Ago
PVS	Peak Vector Sum
QAL	Queensland Alumina Ltd
QAS	Queensland Ambulance Service
QER	Queensland Energy Resources
QFRS	Queensland Fire and Rescue Service
QG	Queensland Government
QGC	Queensland Gas Company
QGEOP	Queensland Government Environmental Offsets Policy
QGP	Queensland Gas Pipeline
QH	Queensland Health
Qld	Queensland
QLUMP	Queensland Land Use Mapping Program
QMDC	Queensland Murray Darling Committee
QPIF	Queensland Primary Industries and Fisheries
QPS	Queensland Police Service
QPWS	Queensland Parks and Wildlife Service
QR	Queensland Rail
QRA	Quantitative Risk Assessment
Quantitative	An assessment based on the amount or number of something
Quaternary	A time period beginning ~2-3 million years ago and extending to present. This time period encompasses the Pleistocene and Holocene time epochs
Quaternary Sample Plots	A standardised flora study to collect data to verify regional ecosystem and vegetation mapping. Data from these sites are generally collected throughout the field survey and entered on spreadsheets or databases. Quaternary sites may be collected at regular intervals along a traverse, and/or made where REs/vegetation communities change
QWESTNet	Queensland Water and Energy Sustainable Technologies Network
QWQG	Queensland Water Quality Guidelines
Radionuclides	A nuclide that exhibits radioactivity
RAIP	Regulatory Approvals Implementation Plan
RAM	Reliability, Availability and Maintainability
RBI	Risk Based Inspection
RBL	Rating Background Level
RCM	Reliability Centred Maintenance
RE	Regional Ecosystems
Recharge	Recharge is defined as the process by which water is added from outside to the zone of saturation of an aquifer, either directly into a formation, or indirectly by way of another formation
Recovery	A rise of the water level in a bore or an aquifer after the pumping rate has been reduced or the pump has been shut off or when mining has ceased. Also known as rebound

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
REDD	Regional Ecosystems Description Database
Regional Ecosystem (RE)	Describes the relationships between major floral species and the environment at the regional scale. They are mostly derived from linking vegetation mapping units based on dominant canopy species, recognised at a scale of 1:100,000 to land zones that represent major environmental variables, in particular geology, rainfall and landform. Under the VM Act REs are assigned a conservation status based on an assessment of the pre-clearing and remnant extent of a RE
Rehabilitation	To restore to former condition or status
Relative Humidity	Relative humidity describes the amount of water vapour in the air relative to the saturation point at a given temperature.
Remediation	To restore to health, requires that impact is reduced to some acceptable level
Remnant Vegetation	Vegetation is identified as 'remnant' under the VM Act where the predominant canopy of the vegetation: covers more than 50 % of the equivalent undisturbed canopy; averages more than 70 % of the vegetations undisturbed height and is composed of species characteristic of the vegetations undisturbed predominant canopy
Resource	The quality of all aspects of a water resource including (a) the quality, pattern, timing, water level and assurance of instream flow, (b) the water quality, including the physical, chemical and biological characteristics of water, (c) the characteristic and condition of the instream and riparian habitat; and (d) the characteristics, condition and distribution of aquatic biota
RFD	Reasonably Foreseeable Development
RFD Area	The reasonably foreseeable development area being the combined area of the Roma (part), Fairview, Arcadia Valley and Comet Ridge (part) CSG fields as listed in Table 3.4.1.
RFDA	Reasonably Foreseeable Development Areas
RFDS	Royal Flying Doctors Service
RFS	Rural Fire Service
RHM	Regional Harbour Master
RIFA	Red Imported Fire Ants
Riparian	Situated along or near the bank of a waterway.
RNE	Register of the National Estate
RO	Reverse Osmosis
ROC	Reverse Osmosis Concentrate
RO-RO	Roll-on / Roll-off
ROP	Resource Operations Plan
ROW	Right of way
RPD	Real Property Descriptions
RDPM	Road Planning and Development Manual
RRC	Roma Regional Council
RTUs	Remote Telemetry Units
Runoff	All surface and subsurface flow from a catchment, but in practice refers to the flow in a river i.e. excludes groundwater not discharged into a river
RUP	Resource Utilisation Plan
s	Second

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
S/T	State/Territory
SALF	Salt and Leaching Fraction
Saline water	Water that is generally considered unsuitable for human consumption or for irrigation because of its high content of dissolved solids
Sanitation	The treatment and disposal of waste from the human body and grey water generated through household activity
Santos	Santos TOGA Pty Ltd
SAP	Sampling and Analysis Plan
SAR	Sodium Adsorption Ratio
SCADA	Supervisory Control and Data Acquisition
Scarp	A steep slope, ridge or escarpment of rock.
Scats	Animal pellets or faecal matter
SCATES	Santos Contractor Aboriginal Training and Employment Scheme
Scope 1	Direct GHG emissions, such as from turbines, vehicles or other equipment owned and operated by the company conducting a GHG inventory
Scope 2	GHG emissions resulting from the use of electricity or other utilities provided by a third party
Scope 3	Indirect GHG emissions produced as a result of a company's activities but from sources not owned or operated by that company, e.g. emissions from transport, end use, raw material supply
SCR	State Controlled Roads
SD	Statistical Division
SDA	State Development Area
SDAIB	State Development Areas Implementation Branch
SDPWO Act	State Development and Public Works Organisation Act
Secondary aquifer	An aquifer in which water moves through secondary openings and interstices, which developed after the rocks were formed i.e. weathering, fracturing, faulting
Secondary sample plots	Secondary sample plots are standardised transects used for classification and detailed descriptions of REs and vegetation communities. Data collected include all location, environmental and overall floristic and structural information as well as a list of all species present and basal area, percentage cover and stem density measures of abundance
Sediment	Particles derived from rocks or biological material that have been transported by air or water
Seep	A diffuse wetland area where interflow and groundwater emerges, usually at a slow rate or small volume, to become surface flow
Semi confined aquifer	An aquifer that is partly confined by layers of lower permeability material through which recharge and discharge may occur, also referred to as a leaky aquifer
SES	State Emergency Services
SF	State Forest
Shallow groundwater	In the context of the study, shallow groundwater has been recognised as groundwater resources not deeper than 100 m
SIA	Social Impact Assessment
SIL	Safety Integrity Level
SIMP	Santos Incident Management Plan

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
SIP	Sustainability Implementation Plan
SIS	Safety Instrumented System
SLA	Statistical Local Area
SMU	Soil Mapping Units
SNL	Short-term Intrusive Noise Criteria
SO_2	Sulphur dioxide
SO_4	Sulphate
SOI	Statement of Intent
Specific yield	It is the volume of water that will drain under gravity from a unit volume of aquifer, commonly referred to as the storage coefficient of an unconfined aquifer
SPL	Sound Pressure Level
SPOCAS	Suspended Peroxide Oxidation-Combined Acidity and Sulphate
SPP	State Planning Policy
Spring	A point where groundwater emerges, usually as a result of topographical, lithological or structural controls
SPT	Standard Penetration Testing
SQAD	Santos Quality Asset Development
sq km	Square kilometre
SSD	Statistical Subdivision
State Coastal Plan	State Coastal Management Plan – Queensland's Coastal Policy
Static water level	The groundwater level in a borehole not influenced by abstraction; no groundwater levels are ever truly static as they continually respond to recharge, discharge and abstraction
Stillstand	A term that describes the stabilisation of sea level at around its present level (c.a.6,500 years ago, Thom and Roy, 1985) following a rapid rise in the early Holocene epoch
Storage	The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head
Storage coefficient	The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head. It is the elastic storage of the aquifer and is released to the compressibility of the aquifer matrix and to that of the water itself
Storativity	Storage can be defined as the volume of water that a saturated confined aquifer releases from storage per unit surface area of the aquifer per unit decline in the water table. Quantifies the aquifers ability to release water
STP	Sewage Treatment Plant
STV	Short-term Trigger Values
Subaerial	Conditions and processes that exist or operate in the open air (Bates & Jackson, 1987)
Substrate	The underlying base to something, e.g. the streambed.
Supratidal	Just above high tide level
SWL	Sound Power Level
SWMP	Storm Water Management Plan
Swale	A long, narrow, generally shallow, trough-like depression between two beach ridges

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
TAF	Temporary Accommodation Facility
TAPM	The Air Pollution Model (TAPM), a three-dimensional prognostic meteorological model developed by CSIRO
TBT	Tributyltin
TDS	Total dissolved solids, concentration of dissolved salts
TEG	Triethylene Glycol
Thalweg	The line connecting the lowest or deepest points along a stream bed or valley; the line of maximum depth
THI	The Horney Institute
Threatened species	Generic term for a plant or animal species listed as critically endangered, endangered, vulnerable or rare under either state or commonwealth threatened species legislation. The terms 'threatened' and 'conservation significant' are interchangeable in this context
Through flow	The movement of water horizontally beneath the land surface. It occurs once water has infiltrated the soil; the water moves downwards under gravity and because the soil becomes more compact and less permeable with increasing depth, water will begin to move sideways at speeds of between 0.005 to 0.3 m/hr. It usually happens when the soil is completely saturated with water
TI Act	Transport Infrastructure Act 1994
TJ	Terajoule (10^{12} joules)
TKN	Total Kjeldahl Nitrogen
TMBC	Twice Mean Background Concentration
TN	Total Nitrogen
TOC	Total Organic Carbon
ToR	Terms of Reference
TP	Total Phosphorus
TPA	Total Potential Acidity
TPD Media	The Production Department Media
TPH	Total Petroleum Hydrocarbons
Transgression	The progressive marine incursion of the land surface as sea level rises
Transmissivity	The rate at which water is transferred through a unit width of an aquifer under a unit hydraulic gradient. It is expressed as the product of the hydraulic conductivity and the thickness of the saturated portion of an aquifer. Transmissivity is the rate at which water moves through the aquifer
TSHD	Trailing Suction Hopper Dredge
TSS	Total Suspended Solids
TTS	Temporary Threshold Shift
t/yr	tonnes per year
UCL	Upper Confidence Level
UKC	Underkeel Clearance
ULP	Unleaded Fuel
Unconfined aquifer	An aquifer with no confining layer between the water table and the ground surface where the water table is free to fluctuate
UNFCCC	United Nations Framework Convention on Climate Change

EIS Supplement Glossary and Abbreviations

Abbreviation	Description
Unsaturated zone	The part of the geological stratum above the water table where interstices and voids contain a combination of air and water; synonymous with zone of aeration or vadose zone
URS	URS Australia Pty Ltd
μS/cm	micro-siemens per centimetre
USACE	US Army Corps of Engineers
USAMMP Act	US Marine Mammal Protection Act 1972
USLE	Universal Soil Less Equation
VACT	Victorian Civil and Administration Tribunal
Vadose	Upper soil water zone which is aerated by water table fluctuations
VCE	Vapour Cloud Explosion
VM	Vegetation Management
VMA	Queensland *Vegetation Management Act 1999*
VM Act	Queensland *Vegetation Management Act 1999*
VOC	Volatile Organic Compound
Vulnerability	The tendency or likelihood for contamination to reach a specified position in the groundwater system after introduction at some location above the uppermost aquifer
Vugh	A relatively large and usually irregular void [often infilled by different material or sediment] in a soil, but not normally connected to other voids of comparable size (Bates & Jackson, 1987)
WASP	Waste-Aquifer Separation Principle
WBM	BMT WBM Engineering and Environmental Consultants
WHRU	Waste heat recovery unit
WTP	Water Treatment Plant
WCR Act	Workers Compensation and Rehabilitation Act 2003
Weeds	Plant species that invade native ecosystems and can adversely affect the survival of indigenous flora and fauna, often competing with indigenous plants for resources such as nutrients, moisture and light. They can prevent natural regeneration, reduce wildlife habitat, alter water flows, increase soil erosion, introduce poisons into the soil or poison animals, change fire behaviour and may introduce foreign genes into local plant populations. Weed species are not necessarily exotic non-indigenous species, but can also be non-endemic natives that are naturalised to areas outside of their natural distribution
WHS	Worker Health and Safety
Winnowing	Selective sorting or removal of fine particles by wind or water
WMP	Waste Management Plan
WONS	Weeds of National Significance
WQO	Water Quality Objective
WRP	Water Resource Plan
WS (S&R) Act	Water Supply (Safety and Reliability) Act 2008
WSUD	Water Sensitive Urban Design
WWTP	Waste Water Treatment Plant
Yield	The quantity of water removed from a water resource e.g. yield of a borehole