Resources Regulator
Department of Regional NSW

APO0001735

Approval to undertake assessable prospecting operations

Castaway PASS AC drilling

27 May 2024

Application summary

Detail	Application
Reference	APO0001735
Date of approval	27 May 2024
Title	AL 24 (1992)
Contact	[redacted]
Project name	Castaway PASS AC drilling
Project location	Euston (Castaway)
Activity type	Complying exploration activity

Important note

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Project

Project details

Assessable prospecting activity APO0001735 relates to the Castaway PASS AC drilling at Euston (Castaway).

The project has the following approved characteristics.

Detail	Proposal
Activity description	A total of 2 air core AC holes with an average depth of 80m (maximum 100m) are planned for this program. Drilling aims to collect geochemical data for Acid Sulphate Soil (ASS) assessments, as part of the Euston pre-feasibility study (PFS) Stage 2. This exploration program is part of a broader package of work across the Euston Project, which includes geotechnical, hydrogeological and geochemical assessments of the orebody. Each hole drilled is anticipated to be completed within a 24-hour period. No vegetation clearing is required as collar locations have been chosen on previously cleared areas; one hole is situated on the edge of a cropped paddocks, the other on a private farm track. A minor amount of surface disturbance will occur around each hole for sump digging and safe drill collar set up. A small sump to contain excess spoils will be dug next to each hole using a Skid Steer Loader. Excavated soil (approx. 2.25m3 per hole) from the sump will be stockpiled with the top 20cm piled separately as a seed bank. Drilling will be carried out by independent contractors operating under Iluka's environmental, health and safety policies. Drilling personnel will consist of a driller, offsiders, a geologist and up to three field technicians (Iluka Resources employees and contractors). AC drilling will be undertaken using a mantis rig with onboard rod bin, compressor and cyclone with a support truck and 4wd vehicles. During drilling 2kg samples will be collected for assay as a 25% split; 1 metre intervals from a rotary splitter for AC. Immediately after drilling, AC holes will be plugged with a plastic octoplug at least 1m below the surface and backfilled with spoils buried in the sump. Site and sump rehabilitation will occur as soon as the site is adequately dried of drill water.

Detail	Proposal
Earthworks or vegetation clearing	Total footprint for all drilling will be limited to approximately 40m2 (2 drill sites x 20m2 – estimated surface disturbance per site of 6m x 3m). Drill sites have been chosen specifically to be in already cleared areas, and accessed via existing tracks, so there is no need to clear any vegetation. Minor surface disturbance may occur around the drill collar location in order to create a safe working space. Excavation will be limited to the construction of one sump at each drill site (2.25m3) to contain any drill water and excess spoils. Sumps will be in-filled with the prior removed soil at the completion of drill activities.
Access to exploration activities	Access will be via existing tracks and farm access tracks
Ancillary activities	There are no ancillary activities associated with this program.
Anticipated start date	15 June 2024
Expected duration (weeks)	1 week
Expected rehabilitation completion date	31 December 2024
Proposed hours of operation	Continuous work hours (24 hours a day, 7 days a week).
On-site employee or contractor numbers	6

Exempted areas

The Castaway PASS AC drilling has not proposed prospecting in an exempted area.

State conservation areas

The Castaway PASS AC drilling has not proposed prospecting in a State Conservation Area.

Site description and existing environment

The project comprises the following existing land uses:

The planned drill locations are in south-western NSW, approximately 20km east of Mildura (Victoria) on the eastern side of the Murray River. The main vegetation type is Mallee scrub. The Mallee scrub grows in the sandy surface sediment and form ridges in places throughout the Euston area. The planned activity area lies on the Wilkurra land system, described as sandplains and dunefields with belah and rosewood. The land area comprises Freehold, Western Land Leases and Crown tenures. Land use in the area is either cropping or dry land grazing. The program has been designed to minimise disruptions to landholders and their operations. Rehabilitation of all drill areas are designed to restore the ground to pre-drilling conditions, with the surface material removed during sump excavation returned to its original location. The proposed drilling will not impact the current land use in any way.

The project is located near the following sensitive receptors:

Local noise disturbance will be produced by the drill rig and support vehicles; however, levels will have typically reduced to 60-65 decibels (conversation level) 80m from the rig and continue reducing beyond this. No noise sensitive receptors are located proximate to any of the planned drill holes. Nearest residence is around 5 km away. Nearest health care facility and places of worship are in Gol Gol/Baronga, approximately 12 km distant from the proposed drilling at the closest point. The closest public school is approximately 14 km away. All staff on the drill site will wear hearing protection when equipment is operating. Land holders will be informed prior to drilling. Given the large distances to the nearest sensitive receptors the drilling will in no way exceed acceptable

noise criteria of 5 dB at any sensitive receptor or cause any other disturbance. Noise is considered to have a negligible impact on the surrounding environment and local communities.

The project is located with the following soil types and properties:

All proposed drill holes are planned in areas that are identified to have moderate to extremely severe land and soil capability limitations. No occurrence of acid sulfate soils or the potential for soils to host acid sulfates is recorded. No areas are reserved for strategic agricultural land. The soils of the project area consist of Rudosols and Calcarosols and are represented by the Great Soil Groups of the Siliceous Sands to the south and Solonized Brown Soils. Land and Soil Capability Class: 4, 5 and 7 which is considered moderate to extremely severe limitations. Acid Sulphate Soils are not recognised in the area. Minor ground compaction from vehicle movement and drill site set-ups are unavoidable. However, ground compaction will be superficial and will not impose adverse effects on the overall ground quality, and sites have been chosen specifically to minimise disruption to the land. Erosion from drilling activities (including vehicle movement, site set-up and drilling of holes) will be negligible as the ground is predominantly flat to minor undulations. Potential for soil dispersion will be controlled through the use of sumps to capture drill water and material extracted from drilling. After drilling, AC holes will be infilled with excess material where possible and plugged. Any material unable to be infilled will be buried in the sump. Site and sump rehabilitation will occur as soon as the site is adequately dried of drill water. Topsoil and any removed vegetation will be returned as soon as practically possible.

The project has the following existing surface water sources in the area that are likely to be affected by the activity:

Surface water sources will not be impacted. The closest distance to the Murray River is approx. 12km. Sumps (1.5m W x 3m L x 0.5m D) will be used to contain all water returned from drilling and will be buried as soon as all water has evaporated. Any water required for drilling activities will be sourced from a nearby town and stored in appropriate containers on the drilling and support vehicles. An average maximum 100L of water will be used per AC drill hole.

The project has the following existing groundwater sources that occur in the area that are likely to be affected by the activity:

The anticipated average drill depth of each hole is approximately 80m with a maximum drill depth of 100m. Based on limited data, the target horizon at Castaway is above the water table. Groundwater generally flows south-to-north regionally towards the Murray River, with water table elevations ranging from 38 mAHD (southern end of Yalong) to 32 mAHD (northern end of Castaway; GHD, 2005). Available data suggest groundwater has a near-neutral pH, relatively low total metal concentration, and is saline regionally, with the latter potentially ranging between 35,000 and 100,000 mg/L (EMM, 2022). The LPS aquifer, which hosts the ore to the South of the Euston project area, is recharged via rainfall infiltration, irrigation accessions, and from the Murray River, particularly during high-flow periods. That said, given the groundwater salinity, it seems likely recharge rates are low, any recharge is mobilising salts contained within the unsaturated zone consistent with dryland or irrigation salinity impacts, or some combination thereof (Iluka, 2020). No ground water is to be extracted, and any unexpected ground water emerging from unconfined aquifers will be contained in sumps or containment tanks. Drilling polymers, muds and bentonite will be used only as required to increase hole integrity. These polymers and muds are non-toxic, biodegradable and will not have impact on local water sources.

The project is in an area with the following topography, vegetation cover type, density and condition:

The planned drilling area is a mix of native vegetation and cropping land. Vegetation comprises Plant Community Type (PCT) 170: Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones, PCT 171: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion and PCT 58 Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion. Vegetation condition is poor to moderate due to agricultural grazing. Topography is flat, with general surface slope has <1% gradient over 100m. No vegetation is to be disturbed for these two air core holes, as they will occur in cleared areas.

The project will impact the following matters of national environmental significance:

A PMST Search Report has been conducted with a buffer around the area of planned drilling. As works are temporary in nature, and undertaken within cleared areas, there are no anticipated impacts to any matters of national environmental significance.

The project is in an area with the following threatened species, ecological communities (or habitats):

A BioNet search of threatened and endangered fauna for the proposed drill area was performed and a record is attached to the application. Endangered species identified near the project area include the Malleefowl, Mallee-worm lizard, south-eastern Hooded Robin and the Bitter Quandong. Where Malleefowl or Malleefowl nests are identified, the location will be recorded and no drilling will occur within a 200m radius. As drill holes are planned on existing tracks and no vegetation or habitat is required to be cleared, disturbance is temporary in nature, and activities restricted to daylight hours, adverse effects on local flora and fauna are not expected. In addition, as rehabilitation will take place almost immediately after completion of activities, the short term nature of the activity is not expected to have any effect on flora or fauna.

The project is in an area with the following historic cultural or natural heritage items:

There are no impacts to heritage items on the World Heritage, Commonwealth Heritage Lists, National or State Heritage Registers or items listed on the Wentworth Local Environment Plan (See attached map from SEED portal).

The project is in an area with the following critical habitat/area of outstanding biodiversity value:

Drilling operations are planned to occur in an area that will not impact any critical habitat under the Fisheries Management Act 1994. Three threatened fish species are identified in an area west of the proposed drill holes that are associated with the Murray River water systems: the threatened Silver Perch, the threatened Murry Crayfish and the threatened Eel Tailed Catfish Nearest drill holes to these water systems are a minimum of 14 km away and will not impact on the water course or threatened fish species. No areas of outstanding biodiversity on site (BC Act) - refer attachments

The project is located in an area with the following location, type and distance to the nearest Aboriginal heritage sites:

The proposed AC program is not situated near any previously identified historic cultural or natural heritage items, with the closest known site being approximately 4km east of the program. An extensive search for Aboriginal Heritage Sites (objects and places) has been conducted for AL24 through the AHIMS database - refer attachments. Additional due diligence surveys have also been completed in consultation with Registered Aboriginal Parties (RAPs) to ensure no impacts to Aboriginal cultural heritage artefacts, sites or places. A number of sites have been identified as part of the survey, and are not impacted by this drilling program. Iluka exploration have an establishment Aboriginal Heritage Protocol in place in the event that artefacts, sites or places of significance are encountered during the exploration drilling program.

Exploration activities

The following exploration activities have been approved.

Drill holes

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Depth (m)	Block number	Unit letters
AC014 EDH0015347	Other	20		2.25		80	ADE1926	a
AC015b	Other	20		2		80	ADE1853	s

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Depth (m)	Block number	Unit letters
EDH0015348								

Other exploration activities

Id/ Regulator no.	Type	Surface disturbance (m^2)	Veg. Clearing (m^2)	Excavations (m^3)	Produced water (ml)	Block number	Unit letters

Impact management

The project includes the following measures to manage surface water impacts:

Surface water courses will not be impacted. The closest distance to the Murray River is approx. 12km. Sumps (1.5m W x 3m L x 0.5m D) will be used to contain all water returned from drilling and will be buried as soon as all water has evaporated. Any water required for drilling activities will be sourced from a nearby town and stored in appropriate containers on the drilling and support vehicles. An average maximum 100L of water will be used per AC drill hole.

The project includes the following measures to manage groundwater impacts:

The anticipated average drill depth of each hole is approximately 80m with a maximum drill depth of 100m. Based on limited data, the target horizon at Castaway is above the water table. These drill depths confine the planned activity to within the Loxton Parilla Sands formation and will not penetrate the underlying confined aquifer. If the drilling does intercept the Geera clay, drilling will cease immediately. No groundwater is to be extracted, and any unexpected groundwater emerging from unconfined aquifers will be contained in sumps or containment tanks. Drilling polymers, muds and bentonite will be used only as required to increase hole integrity. These polymers and muds are non-toxic, biodegradable and will not have impact on local water sources.

The project includes the following measures to manage waste and excess materials:

All rubbish generated at the drill sites (typically two bags per day) will be removed from site and disposed of at an appropriately licensed waste refuse facility whilst personnel are active in the area. This includes any hydrocarbon and chemical waste which will be managed and transported as per the NSW Environment Protection Agency and the Transport of Dangerous Goods Code. Where possible, drill holes will be infilled with excess drill spoils, with any larger or excess material buried in the sumps during site rehabilitation. Sump construction will be sufficient to contain all drill spoil and drill fluids. In the unlikely event that holes produce an excessive amount of water return from drilling, the sumps will be incrementally increased to contain drill fluids. Total excavation calculations have been designed to exceed expected spoil volumes so sumps will likely be smaller than proposed, with any required incremental increases accounted for in the total excavation volumes.

The project includes the following measures regarding the handling, use, storage and transportation of any chemicals and hydrocarbons:

All chemical and hazardous substances will be stored in sealed containers with appropriate signage in place. Safety Data Sheets will be available on site for all chemicals present and storage guidelines adhered to strictly. Regular inspection of chemical storage will be enacted prior to, during, and after active drilling operations. All vehicles are inspected daily for leaks. The operating contractors will manage storage, transport and handling of all chemicals on the drill site; however, this management will be supervised by Iluka staff and undergo regular inspections to ensure compliance to legislative requirements as well as internal Iluka standards. Drilling polymers, muds and bentonite will be used only as required and are non-toxic and biodegradable. There is no long-term storage of hydrocarbons on site. All chemical and hydrocarbon spillages, regardless of size, are reportable within Iluka's internal reporting system. Hydrocarbon spill kits are carried in each vehicle.

The project includes the following measures of how noise impacts will be managed to minimise impacts on nearby sensitive receptors:

Local noise disturbance will be produced by the drill rig and support vehicles; however, levels will have typically reduced to 60-65 decibels (conversation level) 80m from the rig. No noise sensitive receptors are located proximate to any of the planned drill holes. Given the large distances to the nearest sensitive receptors the drilling will in no way exceed acceptable noise criteria of 5 dB at any sensitive receptor. The duration of drilling activities at any one site for the AC hole will be cumulatively less than one day (average 3 hours). On site activities will only occur during daylight hours. All staff on the drill site will wear hearing protection when equipment is operating. Land holders will be informed prior to drilling. Noise is considered to have a negligible impact on the surrounding environment.

The project includes the following measures to manage air quality impacts:

Heavy vehicle traffic will be minimised to essential rig, support and water truck movement. Maximum speed limits will be prescribed to minimise dust production and track conditions will be monitored daily. Water injection will be used when required to manage dust generated through drilling. All vehicles are fitted with exhaust mufflers engineered to manufacturers specifications. The vehicles will be inspected prior to commencing activities. Should dust creation from either drilling operations or track usage become a concern, the situation will be assessed and managed by amending procedures in consultation with the landowner.

Sensitivity of the land to be disturbed

Question	Yes/no
Conservation areas	
Land reserved under the *National Parks and Wildlife Act 1974*?	No
Land acquired by the Minister under Part 11 of the *National Parks and Wildlife Act 1974*?	No
Land subject to a 'conservation agreement' under the *National Parks and Wildlife Act 1974* and/or *the Biodiversity Conservation Act 2016*?	No
Land declared as an aquatic reserve under the *Marine Estate Management Act 2014*?	No
Land declared as a marine park under the *Marine Estate Management Act 2014*?	No
Land within State Forests set aside under the *Forestry Act 2012* for conservation values, including Flora Reserves or Special Management (and other) Zones?	No
Land reserved or dedicated under the *Crown Lands Act 1989/Crown Lands Management Act 2016* (as applicable) for the preservation of flora, fauna, geological formations or other environmental protection purposes?	No
Land identified as wilderness or declared a wilderness area under the *Wilderness Act 1987*?	No
Land subject to a Biobanking agreement (established under the now repealed *Threatened Species Conservation Act 1995*) or a Biodiversity Stewardship agreement established under the *Biodiversity Conservation Act 2016*?	No
Land subject to a Wildlife Refuge agreement under the *Biodiversity Conservation Act 2016*?	No
Land subject to existing conservation agreements on private land under repealed legislation that continue to have effect (e.g. trust agreements under *Native Conservation Trust Act 2001*, Property vegetation plans under *Native Vegetation Act 2003*, Registered property agreements under *Native Vegetation Conservation Act 1997*)?	No
Drinking water catchment protection areas	
Land declared to be a 'controlled area' or a 'special area' under the *Water NSW Act 2014*?	No
Land declared to be a 'special area' under the *Water Management Act 2000* or *Hunter Water Act 1991*?	No
Sensitive areas	

Question	Yes/no
Land declared as area of outstanding biodiversity value under the *Biodiversity Conservation Act 2016* or critical habitat under Part 7A of the *Fisheries Management Act 1994*?	No
Wetlands of international significance listed under the Ramsar Wetlands Convention?	No
Land designated as a nationally important wetland in the Directory of Important Wetlands?	No
Coastal wetlands mapped under *State Environmental Planning Policy (Resilience and Hazards) 2021*?	No
Littoral rainforests mapped under *State Environmental Planning Policy (Resilience and Hazards) 2021*?	No
Coastal zone as defined in the *Coastal Management Act 2016*?	No
Land identified in an environmental planning instrument as being of biodiversity/conservation significance or zoned for environmental conservation, protection and/or management?	No
Waterfront land defined under the *Water Management Act 2000*?	No
Land with a slope greater than 18 degrees measured from the horizontal?	No
Land with potential for soil and water contamination	
Land mapped as Actual Acid Sulfate Soils (AASS) or Potential Acid Sulfate Soils (PASS) on the Acid Sulfate Soils Risk Maps for NSW?	No
Aboriginal protection areas	
Land identified in an environmental planning instrument (such as a State Environmental Planning Policy or Local Environment Plan) as being of Aboriginal cultural significance?	No
Land declared as an Aboriginal place under the *National Parks and Wildlife Act 1974*?	No
Historic or natural heritage protection areas	
Land listed on the World Heritage List, National Heritage List or Commonwealth Heritage List?	No
Land, places, buildings or structures listed on the NSW State Heritage Register?	No
Land identified in an environmental planning instrument (such as a State Environmental Planning Policy or Local Environment Plan) as being of heritage significance or a heritage conservation area?	No
Critical industry clusters	
Land identified as Critical Industry Cluster under *State Environmental Planning Policy (Resources and Energy) 2021*?	No
Community land	
Public land classified as community land under the *Local Government Act 1993*?	No
Other areas	
Land identified on the authority (e.g. exploration licence or assessment lease) as environmentally sensitive land?	No
Ecology	
Will the activity have a significant effect on threatened species or their habitats?	No
Will the activity have a significant effect on threatened ecological communities or their habitats?	No
Will vegetation be removed as part of access track upgrade works in waterfront land?	No
Aboriginal and European heritage	
Will the activity harm Aboriginal objects as defined under the *National Parks and Wildlife Act 1974*?	No
Will the activity damage any listed heritage items?	No

Attachment 1 – Statement of commitments

Item	Commitment
Activity type	Exploration activity comprising: • 0 diamond drill holes • 0 reverse circulation drill holes • 2 other drill holes • 0 cubic metres of bulk sampling • 0 square metres of new access tracks • 0 lines of seismic testing • 0 square metres of air core drilling • 0 square metres of other drilling
Activity location	Euston (Castaway), within AL 24 (1992).
Activity scope (including any ancillary activities)	A total of 2 air core AC holes with an average depth of 80m (maximum 100m) are planned for this program. Drilling aims to collect geochemical data for Acid Sulphate Soil (ASS) assessments, as part of the Euston pre-feasibility study (PFS) Stage 2. This exploration program is part of a broader package of work across the Euston Project, which includes geotechnical, hydrogeological and geochemical assessments of the orebody. Each hole drilled is anticipated to be completed within a 24-hour period. No vegetation clearing is required as collar locations have been chosen on previously cleared areas; one hole is situated on the edge of a cropped paddocks, the other on a private farm track. A minor amount of surface disturbance will occur around each hole for sump digging and safe drill collar set up. A small sump to contain excess spoils will be dug next to each hole using a Skid Steer Loader. Excavated soil (approx. 2.25m3 per hole) from the sump will be stockpiled with the top 20cm piled separately as a seed bank. Drilling will be carried out by independent contractors operating under Iluka's environmental, health and safety policies. Drilling personnel will consist of a driller, offsiders, a geologist and up to three field technicians (Iluka Resources employees and contractors). AC drilling will be undertaken using a mantis rig with onboard rod bin, compressor and cyclone with a support truck and 4wd vehicles. During drilling 2kg samples will be collected for assay as a 25% split; 1 metre intervals from a rotary splitter for AC. Immediately after drilling, AC holes will be plugged with a plastic octoplug at least 1m below the surface and backfilled with spoils buried in the sump. Site and sump rehabilitation will occur as soon as the site is adequately dried of drill water. There are no ancillary activities associated with this program.
Hours of operation	Continuous work hours (24 hours a day, 7 days a week).
Expected duration (weeks)	1 week
Anticipated start date	15 June 2024
Expected rehabilitation completion date	Estimated 31 December 2024
Maximum area of disturbance	40 square metres
Air quality	The title holder must implement all measures to prevent, so far as practicable, pollution caused by dust and other air pollutants.

Item	Commitment
Protection of water sources	The title holder must implement all measures to prevent, so far as practicable, causing adverse impacts on water quality and quantity, including groundwater levels and pressure. Prior to the construction and use of any borehole, the holder of a coal prospecting title must prepare a Groundwater Monitoring and Modelling Plan in consultation with the Water Division of the NSW Department of Planning and Environment.
Erosion, sediment and soil controls	The title holder must implement all measures to prevent, so far as is practicable, causing any land degradation or pollution of land or water. The title holder must implement all practicable measures to prevent harm to the environment when disturbing land in areas of potential acid sulfate soils and actual acid sulfate soils.
Noise and vibration	The titleholder must implement all practicable noise management measures to ensure that noise levels meet acceptable noise criteria for sensitive receivers. Unless otherwise agreed with relevant landholders, the title holder must notify any potentially affected landholders at least 24 hours prior to detonating explosives.
Use of chemicals, fuels and lubricants	The titleholder must implement all measures to prevent, so far as is practicable, causing contamination of the environment by the release of chemicals, fuels, lubricants and other potential pollutants. The title holder must ensure that all chemicals, fuels and lubricants, excluding those contained within plant and equipment, are: a. stored and handled in accordance with any relevant Safety Data Sheet and Australian Standards for the material, and b. stored in appropriate containers that are in good condition and labelled to clearly identify the stored product, and c. kept in a facility or area which is capable of containing at least 110% of the largest container capacity stored within that area. The title holder must: a. ensure that adequate spill prevention and absorbent materials required to manage spills and leaks for all potential pollutants which are on site are readily available at all times, and b. use appropriate equipment and materials to capture any drips and spills which occur during the transfer of potential pollutants, and when carrying out maintenance of hydrocarbon filled plant and equipment.
Waste	The titleholder must manage all waste in a manner which does not cause harm to the environment.
Vegetation clearing and surface disturbance	The title holder must minimise the extent of any vegetation clearing and surface disturbance to as low as practicable. The boundaries of any areas of vegetation clearing and surface disturbance must be demarcated. The title holder must implement all measures to prevent, so far as practicable, adverse impacts to fauna caused by vegetation clearing or surface disturbance. The title holder must inspect trees and canopy branches for fauna prior to felling or branch removal, and clearly demarcate any hollows or active bird nests. The title holder must not proceed with tree felling or branch removal until any resident fauna have been relocated by an ecologist or other competent party.
Roads and tracks	The title holder must consult with relevant landholders prior to establishing any new roads or tracks.

Item	Commitment
	The title holder must plan, design, construct, maintain and use roads and tracks in a manner which minimises the area and duration of disturbance to the environment and landholders to as low as practicable. The title holder must construct any crossings of rivers, permanent and intermittent water lands and wetlands to prevent, so far as practicable, impacts on fish habitats. The title holder must refrain from using any unsealed road or track during wet conditions to prevent damage to that road or track, unless the road or track has been designed and constructed for use in wet conditions, or the landholder expressly consented to the use of that road or track in wet conditions. Unless otherwise agreed with the relevant landholder, the title holder must repair all damage to existing roads and tracks resulting from exploration activities.
Aboriginal and other cultural heritage	The titleholder must implement all measures to prevent, so far as practicable, harm to Aboriginal cultural heritage and non-indigenous cultural heritage.
Weeds, pest animals and diseases	The titleholder must implement all practicable measures to prevent the introduction and spread of weeds, pest animals and animal and plant diseases.
Livestock protection	The title holder must implement all measures to prevent, so far as practicable, causing adverse impacts to livestock.
Fire prevention	The title holder must implement all measures to prevent, as far as practicable, the ignition and spread of fire.
Rehabilitation commitments	The activity will be undertaken in accordance with the rehabilitation objectives and targets provided for this project.
Risk assessments	The title holder must monitor the risks associated with activities and, if the risk associated with an activity changes, implement revised environmental management controls.
Incident management	The NSW Resources Regulator will be notified of all incidents in accordance with the requirements of AL 24 (1992).
Reporting	Reporting to the NSW Resources Regulator and Mining, Exploration and Geoscience – Department of Regional NSW will be in accordance with the legislation and conditions of AL 24 (1992).
Codes of Practice	Castaway PASS AC drilling will be operated in accordance with: • Exploration Code of Practice: Environmental Management Exploration Code of Practice: Rehabilitation
Other (as applicable)	1. No additional terms specified.

Attachment 2 – Definitions

To search for NSW legislation, visit www.legislation.nsw.gov.au. Commonwealth legislation can be found at www.legislation.gov.au.

Word	Definition
Aboriginal object	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Aboriginal place	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Acid Sulfate Soils	Sediments and soils containing iron sulfides which, when exposed to oxygen, generate sulfuric acid. Acid sulfate soils include actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS).
Activity	Any activity carried out in connection with exploration, including: • the use of land • means of accessing land • the carrying out of a work.
Activity approval	An approval to carry out assessable prospecting operations granted under the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Actual Acid Sulfate Soils (AASS)	Sediments and soils containing highly acidic soil horizons or layers resulting from the aeration of sediments and soils that are rich in iron sulfides, primarily sulphide.
Applicant	In relation to an exploration activity, the person proposing to carry out the exploration activity.
Aquatic reserve	Has the same meaning as it has in the *Marine Estate Management Act 2014.*
Areas of Outstanding Biodiversity Value (AOBVs)	Has the same meaning as it has in the *Biodiversity Conservation Act 2016*. Note: Areas of declared critical habitat under the now repealed *Threatened Species Conservation Act 1995* have become Areas of Outstanding Biodiversity Value (AOBVs) under the *Biodiversity Conservation Act 2016*.
Assessable prospecting operation	Any prospecting operation that is not exempt development within the meaning of *State Environmental Planning Policy (Resources and Energy) 2021.*
Clearing of vegetation	Any one or more of the following: • cutting down, felling, thinning, lopping, logging or removing vegetation, or • killing, destroying, poisoning, ringbarking, uprooting or burning vegetation.
Complying exploration activities (CEA)	Exploration activities that are considered unlikely to significantly affect the environment as set out in *Exploration guideline: Application and assessment process for exploration activities*.
Critical habitat	Has the same meaning as it has in the *Fisheries Management Act 1994*. Areas of declared critical habitat under the now repealed *Threatened Species Conservation Act 1995* have become Areas of Outstanding Biodiversity Value (AOBVs) under the *Biodiversity Conservation Act 2016.*
Drill hole	A hole made by drilling or boring, but excludes: • sampling and coring using handheld equipment • petroleum wells.
Drilling	The perforation of the earth's surface crust by mechanical means to form a hole, whether the hole caused by the perforation is vertical, inclined or horizontal, and

Word	Definition
	includes all operations for preventing collapse of the sides of such hole or for preventing it from being filled with extraneous materials including water
Environment	Has the same meaning as it has in the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Environmentally sensitive area of State significance	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Excavation	The removal of the surface layer to a depth greater than 500 mm from the natural surface level.
Exempt development	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Exploration	Has the same meaning as it has in *State Environmental Planning Policy (Resources and Energy) 2021*.
Fauna	Has the same meaning as it has in the *National Parks and Wildlife Act 1974*.
Groundwater	Water that occurs beneath the ground surface in the saturated zone.
Habitat	Has the same meaning as it has in *the Biodiversity Conservation Act 2016* or the *Fisheries Management Act 1994* (as relevant).
Harm	In relation to matters of national environmental significance, has the same meaning as 'significant impact' as provided by the 'Significant Impact Guidelines' used to determine whether assessment and approval is required under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*. In relation to the environment, has the same meaning as it has in the *Protection of the Environment Operations Act 1997*. In relation to threatened species or ecological communities, has the same meaning as: • 'harm an animal' in the *National Parks and Wildlife Act 1974* • 'pick a native plant' in the *National Parks and Wildlife Act 1974* • 'harm' in the Fisheries Management Act 1994. In relation to an aquifer or waterfront land, has the same meaning as it has in the *Water Management Act 2000*. In relation to Aboriginal places or Aboriginal objects has the same meaning as it has in the *National Parks and Wildlife Act 1974*. In relation to items of heritage significance, has the same meaning as it has in the *Heritage Act 1977*. In relation to protected marine vegetation, has the same meaning as it has in the *Fisheries Management Act 1994*.
Items of heritage significance	Means: • any heritage items listed in one or more of the following: — the Commonwealth Heritage List — the World Heritage List — the National Heritage List — the State Heritage Register — an Environmental Planning Instrument

Word	Definition
	• any relic (being any deposit, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is 50 or more years old), or • within State Conservation Areas: — items that are listed on the DECC Historic Heritage Information Management System, or — any deposit, object or material evidence relating to the settlement or occupation of New South Wales or a part of New South Wales (not being Aboriginal settlement or occupation) if the deposit, object or material evidence is more than 25 years old at the date of the interference or removal.
Land	Includes: • the sea or an arm of the sea • a bay, inlet, lagoon, lake or body of water, whether inland or not and whether tidal or non-tidal • a river, stream or watercourse, whether tidal or non-tidal, and • a building erected on the land
Marine vegetation	Has the same meaning as it has in the *Fisheries Management Act 1994*.
Matters of national environmental significance	'Matters of national environmental significance' protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.
Minister	The Minister administering the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Native vegetation	Has the same meaning as it has in the *Local Land Services Act 2013*.
Potential acid sulphate soils (PASS)	Sediments and soils that contain iron sulfides or sulfidic material which have not been exposed to air and oxidised
Produced water	Any form of groundwater that is actively extracted from a borehole or excavation, excluding incidental groundwater mixed with drilling fluids.
Rehabilitation	Has the same meaning as it has in the *Mining Act 1992 / Petroleum (Onshore) Act 1991* – as relevant.
Seismic survey	The use of shock waves (generated in the ground using either small explosive charges detonated below the surface, hand-held mechanical hammers or vehicle-mounted hammers) and an array of geophones, which are connected to measuring instruments, to differentiate the geophysical properties of the subsurface of the earth.
Sensitive receiver	Includes: • dwellings • libraries • educational and research institutions (including schools, colleges and universities) • childcare centres • kindergartens • hospitals, surgeries and other medical institutions • places of worship

Word	Definition
	• milking sheds and holding yards associated with dairies • animal boarding or training establishments • aquaculture • intensive livestock agriculture
Site	The land on which an activity is located.
State Conservation Area	Has the same meaning as it has in the *National Parks and Wildlife Act 1974.*
Surface disturbance	Means: • disturbance or exposure of the soil or surface rock layer, or • degradation or deterioration in any manner of the physical surface of land.
Terms	In relation to activity approvals, the terms imposed by the decision-maker on the grant of an activity approval.
Threatened species or ecological communities	Has the same meaning as it has in the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* (as relevant).
Title	An authority under the *Mining Act 1992 /* a title under the *Petroleum (Onshore) Act 1991* – as relevant.
Titleholder	A person or company to whom a title has been issued.
Track	All unsealed routes that will be traversed multiple times, but does not include single pass (ingress and egress) routes or seismic shot and receiver lines.
Waste	Has the same meaning as it has in the *Protection of the Environment Operations Act 1997.*
Water source	Has the same meaning as it has in the *Water Management Act 2000.*
Water land	Has the same meaning as it has in the *Fisheries Management Act 1994.*
Waterfront land	Has the same meaning as it has in the *Water Management Act 2000.*
Wetlands	Has the same meaning as it has in the *Fisheries Management Act 1994*.
Wilderness	Lands identified as wilderness under the *Wilderness Act 1987.*
Wilderness area	Lands (including subterranean lands) declared to be a wilderness area under the *Wilderness Act 1987* or the *National Parks and Wildlife Act 1974.*

Attachment 3 – List of supporting documents

- 1_AL24 Location Map 253097v0.pdf
  - 2_APO_Representative Photographs_Euston.pdf
  - 3_Protected Matters - MNES layers - March 19th 2024.pdf
  - 4_SEED_Environment.pdf
  - 6_SEED_Heritage.pdf
  - 7_AHIMS_Searches.pdf
  - AL24_2023_Instrument of Renewal_Minerals_2023.11.02.pdf
  - APO0001735_Submission Report_15 May 2024 12:28pm.pdf
  - APO0001735_Submission Report_16 May 2024 4:34pm.pdf
  - APO0001735_Submission Report_3 May 2024 12:41pm.pdf
  - Species Search.zip