Government of South Australia
Department for Energy and Mining

24 July 2024

Dr Chris Giles
Technical Director
Havilah Resources Limited
31 Flemington Street
GLENSIDE SA 5065

chris.giles@havilah-resources.com.au

Dear Dr Giles,

Approval Notification - Exploration Program for Environment Protection and Rehabilitation (EPEPR2024-014) EL 6359 & EL 6660

The program for EL 6359 & EL 6660, final version submitted by Koba Resources Ltd on 18 July 2024 to conduct Rotary Mud and Aircore drilling for the Yarramba Uranium Project, has been approved in accordance with Section 70B(5) of the *Mining Act, 1971 (the Act)*.

In accordance with section 70B(7a)(b) of the Act, the approved program is subject to the conditions listed in the attached notice.

In accordance with section 62(1) of the *Mining Act, 1971*, a rehabilitation bond/bank guarantee to the value of **$50,000** is required to be lodged with the Mining Registrar. Appropriate documentation will be forwarded to you shortly. The bond must be lodged within 28 days of receiving these documents.

You are reminded that:

1. You must at all times implement and comply with the approved EPEPR.
2. The approved EPEPR will be made publicly available on the Mining Register.
3. Exploration operations on “native title land” (as defined in the *Native Title (South Australia) Act, 1994)* must be conducted in accordance with Part 9B of the Act.
4. In accordance with Section 70C of the Act, the licensee must review the EPEPR on request of the Minister’s Delegate within a time specified in the request and submit the revised EPEPR for approval.
5. As the operator for the approved EPEPR you must take all reasonable and practical measures to avoid undue damage to the environment and meet all the approved outcomes (when measured against the approved criteria) listed within the EPEPR.
6. In accordance with regulation 78 of the *Mining Regulations 2020* and Terms of Reference 012 (TOR 012), the licensee must submit an Exploration Compliance Report to the Mineral Exploration Branch each year, within 60 days after the anniversary of the date the licence was granted, and 60 days after the expiry or surrender of the EL, or in accordance with joint reporting requirements agreed to with the Minister.

7. In accordance with regulation 16(4) of the *Mining Regulations 2020*, drillhole and geological samples must be kept in accordance with guidelines issued by the Department for the term of the relevant tenement and for 7 years after the expiry, surrender, cancellation or forfeiture of the tenement to which the sample relates. Furthermore, samples must be retained by the tenement holder, or provided to the Director, in accordance with those guidelines (unless the Minister has authorised, on application by the tenement holder in a manner and form set out in the guidelines, the destruction or disposal of the samples).
8. The EPEPR is approved for a period of twelve months from the date of this letter.

This approval does not constitute endorsement of the systems that you have in place to manage your exploration operations in compliance with the Act and licence conditions. In granting the approval, the EPEPR and your capacity to undertake the proposed activities have been considered. However, responsibility for compliance with the Act and the licence conditions, remains at all times with the licensee.

This approval relates only to the requirements of the Act. Other legislation relevant to this application includes the *South Australian Work Health and Safety Act, 2012* and Regulations. For example, Chapter 10 of the *Work Health and Safety Regulations, 2012 (SA)* introduced new requirements for mine operators in South Australia. The new requirements include a notification for mining operations and the establishment of a Safety Management System. For further information on your responsibilities, including a guide to Chapter 10 and the Mine Operator Notification Form, contact SafeWork SA on 08 8303 0255 or via its website at www.safework.sa.gov.au.

The proposed program may be subject to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Mineral exploration industry-specific information is contained in an appendix in the EPBC Matters of National Environmental Significance – Significant impact guidelines 1.1. This document is available on the Australian Government's Department for Agriculture, Water and the Environment website at http://www.environment.gov.au/resource/significant-impact-guidelines-11-matters-national-environmental-significance. For further information, contact the Department for Agriculture, Water and the Environment, or visit its website at www.environment.gov.au/.

Proposed changes to exploration operations stated in the approved EPEPR may require a *PEPR review* to be submitted for assessment. Where a *PEPR review* is required, implementation of the operational changes can only occur after the revised EPEPR is approved. Further information on when an exploration PEPR review is required can be found in Departmental guideline *MG22 Conducting mineral exploration.*

If you require any further information, please contact Jack White on 8429 2490 or Simon Constable on 8429 2516 or email DEM.exploration@sa.gov.au.

Yours sincerely

Simon Constable
GENERAL MANAGER MINERAL EXPLORATION
REGULATION & COMPLIANCE
In accordance with delegated
Ministerial powers and functions

CC: Mark Couzens Exploration Manager, Koba Resources Limited mcouzens@kobaresources.com
CC: Ben Vallerine Managing Director, Koba Resources Limited bvallerine@kobaresources.com
CC: DEW Drilling Inspector miningwatersciencereferrals@sa.gov.au
CC: DEW Hydrogeologist miningwatersciencereferrals@sa.gov.au

The Department's Regulatory Guidelines, Ministerial Determinations and Information Sheets are available at: http://energymining.sa.gov.au/minerals/knowledge_centre

Notice of Approval Conditions – EPEPR 2024-014

In accordance with section 70B(7a)(b) of the Act, the approved program is subject to the following conditions:

1. All drill holes are to be plugged from the end of hole with cement grout back to a minimum of 15m into the confining bed.

APPLICATION Mining Act 1971 and Mining Regulations 2020

EXPLORATION PROGRAM FOR ENVIRONMENT PROTECTION AND REHABILITATION (PEPR)

Government of South Australia
Department for Energy and Mining

USE THIS TEMPLATE TO: Apply to conduct mineral exploration operations not covered by the Generic PEPR (Adopted Program) for a 12 month period of time on one or more exploration licences (ELs), retention leases (RLs) or mineral claims (MCs) in South Australia.

Refer to the Exploration PEPR Terms of Reference and Minerals Regulatory Guidelines MG22 when completing this application. Further information on exploration requirements in South Australia is available on the Department for Energy and Mining (DEM) Minerals website www.energymining.sa.gov.au .

SECTION A – GENERAL DETAILS

Operational approval period	**12-month approval period, with an additional 3 months to complete all rehabilitation**			
Tenement details	EL6359 & EL6660			
Tenement holder(s) (for each tenement)	Havilah Resources Limited 31 Flemington Street GLENSIDE SA 5065			
Operating company	Koba Resources Limited 22 Railway Road,SUBIACO WA 6008 Authorised Person: Mark Couzens (Koba Resources Exploration Manager)			
Agency agreement (if applicable)	An agency agreement has been submitted (27/05/2024) for Koba to operate under the Havilah tenements.			
PEPR prepared by	Mark Couzens Exploration Manager – Koba Resources Limited mcouzens@kobaresources.com 0487 487 929			
Project supervisor/contact person(s)	Mark Couzens Exploration Manager – Koba Resources Limited mcouzens@kobaresources.com 0487 487 929 Mark has around 15 years experience in exploration with most of this experience being in SA and WA			
Project/prospect name	Yarramba Uranium Project Prospects: Oban, Oban South, Mt John and Mt John East			
Location details	Approximately 60 – 110km north of the Barrier Highway near Cockburn The Tenement package goes up to the NSW border			
Project description, commodity type and mineralisation model	Exploration Drilling for palaeochannel style uranium mineralisation Oban has a uranium resource of 4.6Mlb of U3O8 at a grade of 260ppm			
Proposed project schedule	Start date	29th July 2024	End date	28th July 2025

DECLARATION

I, the tenement holder, declare under regulation 84 of the Mining Regulations 2020, that I have taken reasonable steps to review the information in this PEPR/revised PEPR to ensure its accuracy.

Name	Chris Giles	Signature (digital allowed)	
Position	Technical Director (Havilah Resources)	Date	18/07/2024

Copy and paste the above table if there is more than 1 tenement holder.

Note: An authorised representative from each tenement holder must sign the declaration (eg in accordance with the Corporations Act 2001).

SECTION B – PROGRAM PREPARATION AND ACCESS TO LAND

Work undertaken in preparing the proposal

Summarise the research and fieldwork undertaken in preparing the proposal including:

- desktop reviews of existing information
- field visits for reconnaissance
- contractor consultation (i.e. equipment scale, type)
- other information used when planning the proposed program.

In January 2024 Havilah Resources Limited and Koba Resources Limited completed a deal where Koba Resources was given access to an extensive tenement package around the Yarramba Palaeochannel to earn up to 80% of the project. Under this deal Koba needs to spend $6 Million over 4 years as operators of this project.

Koba has spent the first few months since completing the deal reviewing all the data package provided by Havilah. This data package included nearly 2000 holes drilled by Havilah or subsiduaries as well as access to hundreds of historical holes dating back as far as 1970.

Koba has spent considerable time on SARIG looking at all available data including geophysical images (magnetics, gravity and EM data), geology interpretations and historical report reviews

Koba completed a reconnaissance field trip from 6th - 8th February 2024. The aim of this field trip was to meet the local station owners, have a look at the main uranium prospects and identify access routes in and out of the project areas. Observations were made with regard to: topographical and drainage features; vegetation type and density; and pastoral lease infrastructure (e.g. existing tracks, fencelines, stock watering points, etc).

Discussions have been held with the Pastoral Lease holders who will be directly involved with the drill program (I.e. Yarramba and Mulyungarie). Initial phone conversations have been followed up with face-to face meetings during the aforementioned field trips except for Mulyungarie Station where they were in the process of hiring a new station manager. Feedback on the proposed program has been positive and discussions will continue to be held to see how the Pastoral Lease holders may be able to assist with supplying some logistical support to the program, including possible accommodation for Native Title Heritage surveys as well as drilling programs.

The Company has engaged drilling, downhole logging and earthmoving equipment companies with the necessary equipment for drill site preparation, rehabilitation and drilling operations. At this stage contracts have been signed with GMP Drilling based out of Mildura and Borehole Wireline based out of Adelaide and a backhoe will be onsite during the drilling program.

Drill targets have been selected in consultation with the relevant Exploration Licence holders (Havilah Resources Limited), based on: detailed analysis of past exploration activities in the area; available geological and geophysical datasets; and key program objectives.

A Native Title heritage survey has been completed with the Malyangapa for the Oban area and with the Wilyakali for the Mt John East prospect. A 4-day heritage survey with the NAWNTAC group has been scheduled to commence on or about the 22nd July 2024 at Mt John.

Consultation (r. 64)

Using the table below, provide a summary of the individual or group of similarly affected persons and summarise the results of consultation that has been undertaken on the proposed operation. Types of interested or affected parties include residents, council, government agencies etc (exclude native title groups and defence owned or controlled lands – refer to relevant sections below).

Tenement	Stakeholder	Land tenure	Land use	Date and type of NOE served	Type of exempt land	Date waiver obtained	Date consultation/access agreement and/or permits signed/authorised	Stakeholder concerns raised and how addressed
EL6359 EL6660	Mulyungarie Station Anthony Honan (Overseer) James Morgan (Mutooroo Pastoral Company)	Grazing	Pastoral Lease	Form 21B 27/07/2022 (Havilah)			*Phone Contact* *6th February 2024* *Phone Contact* *April 2024* *Email Contact* *13th May 2024* *Email Contact* *17th May*	*Phone contact made on 6th February 2024. Dean stated that he was no longer station manager and a new manager would be appointed in the near future* *Phone contact was made with Anthony Honan confirming that he was in charge of Mulyungarie Station as the overseer. Notified Anthony of the upcoming Malyangapa Native Title Heritage Survey on his station.* *Notified Anthony Honan and James Morgan of upcoming planned drilling and setting up of exploration camp* *Notified Anthony Honan and James Morgan of upcoming planned Wilyakali Native Title Heritage Survey in June.*
EL6660	Yarramba Station Greg Treloar	Grazing	Pastoral Lease	Form 21B 27/07/2022 (Havilah)			*Station Visit* *7th February 2024* *Phone and email contact* *May 2024*	*Koba personnel met Greg at Yarramba Station on the 7th February 2024. Greg didn't want any drilling on Yarramba Station in June and July due to lambing season. Discussions about possible shearers quarters accommodation during drilling.* *Spoke with Greg about whether we could complete a Native Title Heritage Survey with the NAWNTAC native title group in June 2024. Greg stated that he would prefer we didn't do any exploration activities until July 2024.*
EL6660	Ngadjuri Adnyamathanha Wilyakali Native Title AC	Native Title Claim SCD2018/002		Form 21B 02/09/2022 (Havilah)	N/A	N/A		*WACA in place and a heritage survey is being organised to clear drill sites*
EL6359 EL6660	Malyangapa Combined Proceedings NT Claim Group	Native Title Claim NC2022/002		Form 21B 24/04/2023 (Havilah)	N/A	N/A		*WACA in place and a heritage survey has been completed in this claim area.*
EL6359 EL6660	SANTS			Form 21B 14/07/2022 (Havilah)	N/A	N/A	Involved in Heritage Surveys.	
EL6359 EL6660	Mining Registrar			Form 21B 23/05/2024	N/A	N/A		

Exploration PEPR application – 12-month period

Tenement	Stakeholder	Land tenure	Land use	Date and type of NOE served	Type of exempt land	Date waiver obtained	Date consultation/access agreement and/or permits signed/authorised	Stakeholder concerns raised and how addressed
EL6660	Wilyakali	Native Title Claim SC2012/001		Form 21B (Havilah)	N/A	N/A		*Email correspondence in regards to Native Title Suvrey completed in June 2024*
EL6660	NAWNTAC	Native Title Claim SCD2021/002		Form 21B (Havilah)	N/A	N/A		*Email correspondence in regards to Native Title Survrey completed in July 2024*

If any individual or group of similar affected persons were not able to be consulted, what steps were taken to consult with them?

N/A

Provide any additional relevant information.

Land access agreements have been given to the relevant station owners on behalf of Havilah since they remain the legal tenement holders for the Koba tenements. A letter notifying the station owners of the role of Koba being the operating company of Havilah has been sent to Mulyungarie Station and Yarramba Station. Koba have made phone contact and have sent emails to all station owners in regards to any upcoming work planned for on or near their stations.

SECTION C – DESCRIPTION OF THE ENVIRONMENT

Include a description of the features of the environment that are expected to be affected by the proposed operations. Each of the elements of the existing environment listed below must be described only to the extent that they may need to be considered in assessing the impacts that the proposed exploration operations are reasonably expected to have on the environment. If the element is not likely to be impacted by the operation, a statement to that effect must be included.

Where the terms and conditions of an RL include environmental outcomes, include any new baseline environmental data relevant to the control strategies or measurement criteria, and where changes to the environment are identified, provide an updated description of the environment to describe the changes.

Proximity to infrastructure and housing

Provide the following information:

- Settlements – indicate the name and distance of the nearest town, and residences within, or near the proposed exploration operations.
- Roads and tracks – indicate existing fence lines, roads and tracks, including those which are to be used in the exploration program.
- Other human infrastructure such as schools, hospitals, commercial or industrial sites, roads, sheds, bores, dams, ruins, pumps, scenic lookouts.
- Railway lines, transmission lines, gas and water pipelines, communication lines – e.g. fibre optic cables etc., if these may be impacted by the exploration operations.

Provide this information on a locality plan/map.

Settlements:

The closest township to EL6359 and EL6660 is Cockburn which is between 60 and 110km south of the proposed exploration activites, refer **Maps 1 & 2** (**Section J**).

Privately-Owned Residences

The ELs cover several privately-owned rural properties (**Map 2**). No exploration activites have been planned within 10km of station residences.

Roads and tracks:

Wherever possible, access to proposed drill sites will utilise the network of existing roads and tracks. Tracks will be maintained as required (in consultation with the landowners) and exploration work will be conducted in ways to ensure minimal disruption to any station infrastructure (See Photo 1 and 2)

Transmission lines, water pipes, gas lines, railways, etc:

There are no known transmission lines, water pipes, gas lines, etc that in close vicinity to planned exploration activities. There are airports close by, a railway and a diesel generator but not within many kilometres of the proposed exploration area. (**Map 10**)

Other infrastructure:

No exploration activites are planned within 200m to station bores and dams. Approvals to access bores for drilling water will be sought from station managers prior to the commencement of exploration activities.

Land use and tenure

Using the table below, select the land tenure and land use that the proposed exploration activities will occur in. Include additional information where prompted.

Land tenure/type	Applicable
Freehold	☐
Pastoral lease	☒
Perpetual lease	☐
Crown land	☐
Mining reserve	☐
Aboriginal freehold/leasehold land (e.g. Anangu Pitjantjatjara Yankunytjatjara and Maralinga Tjarutja lands)	☐
Forestry reserve	☐
Marine parks	☐
National parks, conservation parks, conservation reserves, regional reserves*	☐
Adelaide Dolphin Sanctuary	☐
Murray Darling Basin	☐
Other*	☐

Land use	Applicable
Grazing	☒
Cultivated land	☐
Residential	☐
Township	☐
Industrial	☐
Tourism	☐
Conservation	☐
Defence activity	☐
Road reserve	☐
Sites of scientific significance (geological monuments, fossil reserves etc.)	☐
Orchard/vineyard	☐
*Native vegetation heritage agreements	☐
NA	
*European heritage sites	☐
NA	
*Other (e.g. historic mining)	
NA	

* Indicates more information required in field immediately below.

Describe any council policies (or out of council) or development plans that may impact the program area.

A search of PlanSA and the SAPPA map shows no development plans anywhere near the Yarramba Project area.

Provide a description of any known plans for future land use changes by other parties.

N/A

Provide any additional relevant information.

N/A

Woomera Prohibited Area (WPA)

Will activities be conducted within the WPA	Yes ☐	No ☒	Do you have a resource exploration permit in place?	Yes ☐	No ☐
In which zone will activities be conducted?					
Does the Exploration Permit allow the operator to conduct exploration operations in the WPA?				Yes ☐	No ☐
What is the expiry date of the resource exploration permit?					
Identify closure periods that may impact on the exploration program.					

Other land owned or controlled by the Commonwealth Department of Defence

Lands in South Australia that are owned or controlled by the Commonwealth Department of Defence, which they manage either as a training or test area, include the Port Wakefield Proof and Experimental Establishment, Murray Bridge Training Area, and Cultana Training Area.

These lands remain to be mineral land under the Mining Act 1971 (SA) and can be accessed for mineral exploration and mining subject to certain restrictions and conditions under the Defence Act 1903 (Cth) and the Defence Regulation 2016 (Cth).

Will operations be conducted within the Port Wakefield Proof and Experimental Establishment, Murray Bridge Training Area, or Cultana Training Area?	Yes ☐	No ☒
Do you have a Deed of Access with Defence?	Yes ☐	No ☐
What is the expiry date of the Deed of Access?		
Provide the date the Range Control Officer granted access permission to conduct the proposed exploration operations. Describe the results of consultation and how any concerns raised were addressed.		

Native title

Using the table below, describe how you have complied with the requirements of Part 9B of the Mining Act for each tenement (for further information refer to Minerals Regulatory Guidelines MG22).

Native title			
Is the proposed area of exploration located on native title land?		Yes ☒ No ☐ (If no, no further information in this section required.)	
Are there registered native title party/parties in the area of proposed exploration?	Yes ☒ No ☐	NAWNTAC – SCD2021/002 Malyangapa – NC2021/001 Wilykali – SC2012/001	If no, an Environment, Resources and Development (ERD) Court determination is required.
Have you negotiated a native title mining agreement?	Yes ☒ No ☐	Is the agreement registered?* Yes ☒ No ☐	There are numerous Koba managed tenements covered by the three native title groups but the main three where initial exploration will be focused is EL6356/ EL6359 & EL6660 The agreements are registered with Havilah Resources Limited who remain the tenement holders.
Have you accepted an Indigenous land use agreement (ILUA)?	Yes ☐ No ☒	Is the ILUA registered?* Yes ☐ No ☐	N/A
Have you obtained ERD Court determination?†	Yes ☐ No ☒	Is the determination registered?* Yes ☐ No ☐	N/A

* The registration date refers to the date the agreement, determination or ILUA was registered with DEM.

† An ERD Court determination cannot be conjunctive (i.e. cannot apply to subsequent licences).

Provide any additional relevant information.

There are three different Native Title Heritage Groups registered over the tenement package operated by Koba Resources. Koba has completed a 4-Day Native Title Heritage Survey with the Malyangapa group at Oban and has completed a 1-Day heritage survey with the Wilyakali at Mt John East on the 7th June 2024. A 4-day heritage survey with the NAWNTAC group has been scheduled to commence on the 22nd July 2024 at Mt John.

Landform and topography

Describe the topography of the general area affected by the exploration program. Include the susceptibility to erosion and visual attributes (steep or undulating slopes, plains, rocky outcrops, dunes, saltpans, claypans etc.).

The project is located in an arid, sandy environment, which has been subjected to pastoral activity since European settlement. The area is generally flat with relief of only a few metres between the crests of sand dunes and inter-dune swales as well as scattered claypans. Vegetation is dominated by low woodlands with Black Oak, River Box, White Cypress Pine and Mulga in the upper storey and low shrubs with saltbush, ephemeral herbs and grasses in the under storey.

Soil and surface cover

Describe soil types and soil surface cover - e.g. gibber, rocky - in the general area affected by the exploration program. Include details on the susceptibility to compaction, erosion, dust, runoff and any other soil characteristics – e.g. acid sulphate – that may require control strategies to reduce environmental impacts during operations or rehabilitation.

There is a thin (approximately 3m thick) clayey sand quaternary aged unit located directly above Miocene aged Namba Formation Clay units.

Surface water

Will the proposed program interfere with surface water bodies and natural drainage (e.g. drainage lines, creeks, floodplains, wetlands)? If yes, describe the potential interference and surface water bodies and natural drainage on maps. If no, indicate why.	Yes ☐	No ☒
There are a few creeks within the general proposed exploration area. Most of the creeks in the region run into the station dams. Exploration locations will be sighted by senior field personnel to ensure drainage and surface water sites are not disturbed.		
Is the program area located within water protection areas defined under the *River Murray Act 2003*? If yes, provide the name(s).	Yes ☐	No ☒
N/A		
Is the program area located within any prescribed watercourses or prescribed surface water areas under the *Landscape South Australia Act 2019*? If yes, provide the name(s).	Yes ☐	No ☒
N/A		

Groundwater

Is groundwater likely to be intersected when conducting the exploration program? If yes, use the table below to describe the expected groundwater (hydrogeological) conditions, and identify groundwater aquifers in the exploration area(s) that may be affected. Indicate the approximate depth of drillholes in each area. Copy and paste a new table for each area where different groundwater conditions are expected. If no, provide evidence or any supporting information demonstrating this.	Yes ☒	No ☐

The stratigraphic succession within the Project Area includes up to 3 m of 'Recent' age sediments associated with aeolian dunes and outwash deposits of the Frome plains, underlain by Namba and Eyre Formations of the Tertiary age Lake Eyre Basin sequence overlying either the Cretaceous sediments in the form of the Bulldog shale (around Oban) or directly overlying the Proterozoic basement rocks around Mt John in the south of the Project area.

Previous drilling has shown the Namba sediments to be predominantly lacustrine clays and minor silt up to 70m thick. The Namba Formation has not been shown to host any significant aquifers which is consistent with the understanding at the Honeymoon, Jason and Goulds Dam areas.

The Eyre Formation occurs locally beneath the Namba Formation (if present at all) and consists of sand rich zones in close vicinity to palaeochannels. This unit varies in thickness up to about 30m, although it is commonly absent away from palaeochannels, particularly at locations where the Proterozoic basement rocks occur at shallower depths (basement highs). It is thought to have been formed by the transport and deposition of locally derived materials from the nearby basement highs. Studies completed by previous operators at Oban indicate that it is the Eyre Formation is host to a single or interconnected aquifer. This is also consistent with the understanding at the Honeymoon, Jason and Goulds Dam areas.

The Cretceous aged Bulldog Shale is where Koba will terminate its drilling in the Oban Deposit area.

In the Mt John Area (Koba's southern most drilling areas) the Bulldog Shale is not present and holes will be terminated as soon as Proterozoic basement is reached.

Havilah (Curnamona Energy) have completed a significant amount of drilling in the greater region and they believe that the ground water in the project area occurs as one continuous water-bearing zone from around the centre of the Namba Formation, through the Eyre Formation, throught the Bulldog Shale (when present) and down to the fractured basement rocks and including the overlying saprolite and is therefore not a confined aquifer. Koba is yet to form an informed opinion on this as it has not undertaken any drilling and relies on the work of previous and nearby operators. Koba acknowledges that other operators and the DEM/DEW are of the opinion that the Eyre Formation is a confined aquifer.

Water bore analysis close to the main exploration area (Oban) is tabulated below, the data shows that the water is of low quality due to the high TDS levels and is not potable water for human consumption but would be potentially tolerable for stock water in some circumstances, although it is noted that most bores go salty after a period according to local station personnel.

Bore Name	Easting (mE)	Northing (mN)	Zone GDA66	Depth (m)	Year Drilled	EC (uS/cm)	TDS (mg/L)	pH	Yield (L/s)
BERBER BORE	484910	6544014	54	152.4	1926	19514	11495		1.52
BERBER BORE NO2	482126	6539076	54	83.52	1961	16125	9396		
BILLEROO TANK	467953	6549669	54	95.1	1927	49453	32187		
BUCKLAND BORE	490727	6552722	54	91.44	1961	6080	3412		1.77
FURLOUGH BORE 2	492084	6542477	54	112.78	N.R.				
FURLOUGH BORE 3*	492310	6542350	54	118.87	N.R.	6506	3659		1.52
GLENAPP BORE*	488894	6551744	54	N.R.	N.R.	8655	4907		
LAKE CHARLES NO1*	473034	6555460	54	101.19	N.R.	9063	5145	7	1.77
LC57*	485690	6553623	54	110	1980	13100	7600	6.9	
OBAN BORE	484547	6549204	54	88.39	1963	18651	10967		0.76
TRIAL BORE	480691	6538337	54	582.09	N.R.				
WATSONS BORE*	490385	6547316	54	111.25	N.R.	6506	3659		1.52
YALU BORE	480775	6537219	54	121.92	N.R.	1130	622		0.06
Un-named	477524	6548118	54	90.53	1962	24963	14994		
Un-named	488100	6551200	54	108	1996	8780	4980	7.4	11.25

Description of the locality/area where different groundwater conditions may be encountered					
Lake Eyre Basin, Curnamona Province					
Formation age and/or stratigraphic unit	**Stratigraphic intervals (depth range) (m)**	**Aquifer formation name**	**Aquifer interval/thickness (from–to) (m)**	**Type of aquifer(s) intersected (e.g. unconfined, confined, artesian)**	**Provide aquifer salinity, depth to water level and any other relevant comments**
Aeolian Dune Sediments – Recent	0-3m	NA	NA	NA	
Namba Formation – Early-Mid Miocene	3-70m	NA	N/A	N/A	The water level in the Oban area is ~30m below ground level which is near the centre of the Namba Fm. Saline groundwater
Eyre Formation – Eocene	70-100m	NA	70 – 100m	Single confined aquifer	Saline groundwater that is marginal for stock consumption. TDS is typically 4,000 to 24,000 mg/L in the Oban area.
Bulldog Shale - Cretaceous	100m + locally	N/A	N/A	N/A	Thick package of shale with no aquifers. EOH unit when present
Precambrian Basement ~900 Ma	100m + locally	NA	N/A	N/A	Not typically considered an aquifer, and holes will be terminated once it is intersected.

Provide the environmental value of each aquifer present determined according to the current Environment Protection (Water Quality) Policy.

The water quality policy states that underground waters with a background TDS level of 3 000 mg/L or more, but less than 13 000 mg/L are suitable for primary industries – livestock drinking water only. The Eyre Formation Aquifer is typically at the upper end of this limit and regularly exceeds it.

Provide a description of the existence, location and value of all Groundwater Dependent Ecosystems (GDEs) within and immediately surrounding the project area.

After doing a search on SARIG there are known Groundwater Dependant Ecosystems anywhere near the project area. Map 9 shows the location of GDE's on tenements EL6359 and EL6660

Is the proposed program located within a prescribed wells area or prescribed water resource area? If yes, provide the name of the area.	Yes ☐	No ☒
The Yarramba Project is not in a prescribed wells or prescribed water resource area as shown on Map 11.		

Provide any additional information, if required.

N/A

Native vegetation

Will you be working within areas of native vegetation? If yes, provide the following information: • description of the formation and structure of vegetation in the area (e.g. woodland, shrubland, grassland) • list of the dominant species. If no, indicate why you will not be working within areas of native vegetation?	Yes ☒	No ☐

In June 2007 Curnamona Energy Ltd (former Tenement Holder) contracted Badman Environmental to complete a vegetation survey over part of the Yarramba Project area. The vegetation survey identified numerous vegetation types including woodland, low woodland, low open woodland, open shrubland, tall open shrubland, open herbland, etc. Photo 1 shows the general landscape in the Oban region. Photo 2 shows the general landscape in the Mt John Prospect.

There were three main groups of vegetation identified in the project area:

Group 1

Sites in this group are dominated by *Casuarina pauper* in the overstorey, with *Eucalyptus largiflorens* and *Callitris glaucophylla* (White Cypress-pine) both present at a single site. *Alectryon oleifolius* (Bullock Bush) and *Dodonaea viscosa* ssp. *angustissima* (Narrow-leaved Hopbush) are also present as a mid-storey layer. The understorey contains the low shrub *Maireana astrotricha*, the forbs *Atriplex limbata* (Spreading Saltbush), *Dissocarpus paradoxus* (Ball Bindyi), *Eriochiton sclerolaenoides* (Woolly-fruit Bluebush), *Sclerolaena obliquicuspis* (Oblique-spined Bindyi) and *Sclerolaena uniflora* (Small-spine Bindyi), and the ephemeral herbs *Erodium* spp. (Storksbills), Salsola kali (Buckbush), *Senecio gregorii* (Fleshy Groundsel) and *Tetragonia eremaea* (New Zealand Spinach).

Group 2

This is the most common vegetation group in the survey area. It has low woodland dominated by Casuarina pauper, which is slightly more common than in the preceding group. Some sites also have Acacia aneura (Mulga) and Callitris glaucophylla in the upper storey. The tall shrub Hakea leucoptera (Needlebush) occurs here, as do Alectryon oleifolius and Dodonaea viscosa ssp. angustissima which are slightly more common than in Group 1. Eucalyptus largiflorens is present at two sites in this group. The low shrubs Enchylaena tomentosa (Ruby Saltbush), Einadia nutans (Climbing Saltbush), Maireana erioclada (Rosy Bluebush) and Rhagodia spinescens (Spiny Saltbush) are common in this group. Maireana astrotricha is much less common here than in Group 1. The understorey also contains the grasses Austrostipa sp(p). (Spear-grasses) and Eragrostis eriopoda (Woollybutt), the forbs Atriplex limbata, Dissocarpus paradoxus, Sclerolaena cuneata (Tangled Bindyi), S. decurrens (Green Bindyi), S. lanicuspis (Spinach Bindyi), S. obliquicuspis, S. uniflora, and the ephemeral herbs Blennodia sp. (Native or Wild Stock), Erodium spp., Senecio gregorii, Tetragonia eremaea and Zygophyllum iodocarpum (Violet Twinleaf). The introduced Brassica tournefortii (Wild Turnip) is most common in this group than in the other two groups, possibly an indication of the more sandy nature of the soil at these sites.

Group 3

This group contains only two sites, both in low-lying areas that do not contain *Eucalyptus largiflorens* woodland. One is dominated by *Chenopodium nitrariaceum* and the other by the low shrubs *Maireana aphylla* (Cottonbush), *M. astrotricha* and *Rhagodia spinescens*. *Casuarina pauper* is present at the second site, but not at the first. Common forbs in the understorey of this group include *Atriplex limbata*, *Dissocarpus paradoxus*, *Einadia nutans*, *Sclerolaena cuneata*, *S. decurrens*, *S. divaricata* (Tangled Bindyi), *S. lanicuspis* and *S. obliquicuspis*. The grass *Eragrostis setifolia* (Bristly Love-grass) occurs here. The main ephemeral herb in this group is *Tetragonia eremaea*, which was more common here than in any other group because of the swampy nature of the sites included here. *Atriplex limbata* was also more common here than in other groups, also because of the greater availability of run-on water.

The outcome of the vegetation survey by Badman Environmental identified no species listed under either the Commonwealth EPBC Act 1999, or the South Australian National Parks and Wildlife Act 1972, were recorded during the present survey, either at the monitoring quadrats or opportunistically, or are known to occur in the survey area. The *Acacia carneorum* (Purple-wood Wattle or Needle Wattle) however is listed as vulnerable. There are no known sightings of *Acacia carneorum* (Purple-wood Wattle or Needle Wattle) within the vicinity of any of the proposed drilling prospects.

Significant habitats and flora

If you are working within areas of native vegetation, use the table below to list any significant habitats and any rare or endangered flora species located or reported to have been in the area that may be impacted by the proposed program. Include known sightings of listed species on a locality plan/map.

Species/habitat	Common name	NPW Act rating*	EPBC Act rating†
Acacia carneorum	Purple-wood Wattle (Needle Wattle)	Vulnerable	Vulnerable
Swainsona procumbens	Broughton Pea	Vulnerable	Not Rated

* *National Parks and Wildlife Act 1972* (NPW Act) conservation status includes extinct, endangered, vulnerable, threatened and rare.

† *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) listings include extinct, extinct in the wild, critically endangered, endangered, vulnerable and conservation dependent.

Weeds and pathogens

Provide information of the extent the area is affected or potentially affected by weeds and pathogens (e.g. phytophthora; buffel grass *Cenchrus ciliaris*).

The proposed drill areas are in the Buffel Grass Management Zone 2 (Contain Spread) however there are no known occurrences of Buffel Grass within the project area. Should an area of Buffel Grass infestation be encountered during the drilling program, cleaning procedures will be implemented when leaving the area of infestation and the area avoided.

The vegetation surveys surrounding drilling within the north found a low incidence of alien species which appears to be due to the lack of gullies and creeks flowing through the area. The most common introduced species recorded during the surveys were *Carrichtera annua* (Ward's weed) and *Schismus barbatus* (Arabian Grass). Other declared plants and high priority weeds recorded within the region are: *Marrubium vulgare* (Horehound), *Xanthium spinosum* (Bathurst burr) and *Xanthium strumarium sp. agg* (Noogoora burr), all declared plants under the NRM Act and *Carthamus lanatus* (Saffron thistle), *Cucumis myriocarpus* (Prickly paddy melon) and *Sisymbrium erysimoides* (Smooth mustard), all high priority weeds. Koba field personnel will be supplied with Fact Sheets to assist with the recognition of introduced weeds.

In the south Badman (2008) recognised twenty introduced species of which two *Echium plantagineum* (Salvation Jane) and *Lycium ferocissimum* (African Boxthorn) are Proclaimed Species, as listed by APCC (2004). The introduced species recorded during the October 2007 survey represent 16% of the total species list for this survey.

Fauna

Describe the native and feral fauna that may be present in the application area, including feral species.

In July 2008 Curnamona Energy Ltd (former Tenement Holder) contracted Kellogg Brown and Root Pty Ltd to complete a fauna assessment over part of the Yarramba Project area.

The main fauna identified across the project area were animals such as cattle, sheep, emus,red and western grey kangaroos, euro, echidna, dingos, stripe-faced and fat-tailed dunnarts, sandplain ctenotus, central netted dragon, snakes and numerous species of birds.

The fauna survey identified 6 species of reptile and 2 species of amphibians with none having legislative significance.

There are over 125 bird species identified within the Northern Olary Plains but the fauna survey states that most of these won't be found in the project area. A search of the EPBC database as part of the fauna survey has identified the following listed bird species: Thick-billed grasswren, Painted snipe, Latham's snipe, Rainbow bee-eater and White- throated needletail. The recommendations from the fauna survey is that it is unlikely that suitable habitats for these species would be likely to be found in the project area.

Species with a conservation rating in South Australia under Schedules of the NPW Act which have been recorded in the wider region, on Mulyungarie, or are predicted to occur there in the past, include:

- Bush thick-knee (Stone curlew)
- Plains wanderer
- Pink cockatoo
- Blue-winged parrot
- Hooded robin
- Chestnut-crowned babbler
- Australian bustard
- Banded whiteface
- Pied and black honeyeaters
- Grey falcon.

Of these, potential habitat is available for Blue-winged parrot (possibly as a regular seasonal visitor to the region and especially in 'good' years), Pied honeyeater, Black honeyeater, Australian bustard, and Grey falcon. These species have been recorded on Mulyungarie or immediately adjacent sections of the region but specific locations have not been recorded to show on a map.

Other species of interest which have been recorded on Mulyungarie include Brown and White-browed treecreeper, Crested bellbird, Red-capped robin and Inland dotterel.

Feral species identified in the project area include rabbits, foxes, goats, house mouse, house sparrows, common starling, cats and domestic dogs.

Significant fauna

Where possible, using the table below, list any rare or endangered fauna species located or reported to have been in the area that may be impacted by the proposed program. Include known sightings of listed species on a locality plan/map.

Species	Common name	NPW Act rating	EPBC Act rating
Neophema chrysostoma	Blue-winged parrot	Vulnerable	*Marine*
Sugomel niger	Black honeyeater	-	-
Ardeotis australis	Australian bustard	Vulnerable	-
Falco hypoleucos	Grey falcon	Rare	-

Note: NPW Act conservation status includes extinct, endangered, vulnerable, threatened and rare.
EPBC Act listings include extinct, extinct in the wild, critically endangered, endangered, vulnerable and conservation dependent.

Environmentally sensitive locations

Are there any environmentally sensitive locations within or close to the proposed exploration area (e.g. areas having particular ecological, cultural, scientific, aesthetic or conservation value)? If yes, provide a description of identified environmentally sensitive location(s). Mark these areas on a locality plan to identify any areas of conflict so that access roads or other activities can be planned and located effectively.	Yes ☐	No ☒
Are you likely to impact on the environmentally sensitive area? If yes, detail the likely effects the proposed program may have.	Yes ☐	No ☒
Include a statement concerning whether or not an Aboriginal heritage survey has been conducted by the proponent and if so, the results of the survey.		
There are three different Native Title Heritage Groups registered over the tenement package operated by Koba Resources. Koba has completed a 4-Day Native Title Heritage Survey with the Malyangapa group where over 400 planned drillhole locations was heritage cleared at Oban. A 1-Day heritage survey has been completed with the Wilyakali at Mt John East on the 7th June 2024. A 4-day Native title survey with the NAWNTAC group is scheduled to commence on the 22nd July.		

SECTION D – DESCRIPTION OF PROPOSED EXPLORATION OPERATIONS

Each of the elements listed below must be described only to the extent that they apply to the proposed exploration program.

Equipment and personnel requirements

Using the table below, describe the equipment, size and composition of field crews, and proposed working hours/days required to conduct the proposed program.

Type of personnel	Number	Name of contractor company (if applicable)
Geologists	2	Koba Resources Limited
Land access/environmental	1	Koba Resources Limited / Contracator
Field assistants/technicians	1	Koba Resources Limited
Drilling crew	3 - 6	GMP Drilling + possible Aircore rig later in program
Site preparation and rehabilitation	1	Contractor
Downhole Surveyor	1	Borehole Wireline
Other (provide details)	1	Director – Koba Resources Limited

Shifts worked per day	Hours worked per day	Days worked per week
1	12	7

Equipment type	Owner/operator	Description/capacity	Activity/purpose
4x4 vehicles x 1 - 2 (Landcruiser /trayback or equivalent)	Hire vehicles for Koba Resources	2 - 4 persons 4x4 and utility support vehicles	Personnel and equipment transport
Truck mounted rotary mud drill rig	GMP Drilling	Truck mounted mud rotary drill rig capable of drilling to ~100 m.	Primary drilling technique

Drill rig support truck (4x4-6x6)	GMP Drilling	Larger flatbed vehicle with drilling support equipment.	Support truck for drilling equipment and rods
Water truck	GMP Drilling	Likely to be a 10,000L water truck	Support truck
4x4 Ute (Hilux or similar) x 1	GMP Drilling	2-4 persons 4x4 and utility support vehicles.	Personnel and equipment transport
Cementing Trailer	GMP Drilling	Trailer mounted cement unit	Cementing aquifers when required
4x4 Landcruiser/small downhole geophysical logging truck	Borehole Wireline	Downhole survey vehicle.	Contractor for downhole surveys.
Excavator / Backhoe	Contractor	Small to medium sized	Dig sumps and rehab
Aircore drill rig	Drilling contractor – not confirmed	Truck mounted aircore drill rig capable of drilling to ~100 m.	Primary drilling technique

Provide any additional information, if required.

Depending on drill results a second drill rig could be used for exploration drilling at some point (keen to try an aircore drill rig)

Low impact exploration activities

Will low impact exploration operations be conducted that are not covered by the Generic program for environment protection and rehabilitation – low impact mineral exploration in South Australia, (generic PEPR)? If yes, describe each type of low impact operations proposed.	Yes ☐	No ☒
N/A		

Drilling activities

Will exploration drilling activities be conducted? If yes, fill out the below table	Yes ☒	No ☐

Tenement	Drilling type	Maximum number of drillholes	Maximum drillhole depth (m)	Maximum number of sumps required at each site	Maximum size of sumps (length x depth x width) (m^3)	Average size of each drill pad* (m^2) (no excavation required)	Number of sites requiring pad excavation	Average volume (m^3) of material to be excavated (excluding sumps)
EL6359	Rotary Mud and/or Aircore	300	120m max Average 96m	1	4m x 1.5m x 2m ($12m^3$)	15m x 10m $150m^2$	0	0 m^3
EL6660	Rotary Mud and/or Aircore	200	120m max Average 96m	1	4m x 1.5m x 2m ($12m^3$)	15m x 10m $150m^2$	0	0 m^3
TOTAL		**500**	**120m max Average 96m**	**500**	**500 x $12m^3$ $6000m^3$**	**500 x $150m^2$ $75000m^2$**	**0**	**0 m^3**
		Total number of drillholes (add each row to calculate the total).	Total metres proposed (maximum number of holes x average depth for each row, then add each row to calculate the total).	Total number of sumps (maximum number of sumps x drillsites for each row, then add each row to calculate the total).	Total volume of sumps (maximum size of sumps x number of sumps for each row, then add each row to calculate the total).	Total area of disturbance (number of holes x average size for each row, then add each row to calculate the total).	Total number of pads requiring excavation (add each row to calculate the total).	Total volume of material to be excavated (number of sites requiring excavation x average volume for each row, then add each row to calculate the total).

* The footprint includes all areas of disturbance associated with the drillsite.

Drillsite preparation

If exploration drilling activities are proposed, describe the methods used to prepare sites, including vegetation clearance requirements, site levelling and digging of sumps.

Vegetation clearance requirements and site levelling:

- The landscape is flat open plains so no track clearing will be required. Access to drill locations will use existing tracks where possible. From the access tracks a single track will be driven to the drill location. Drill sites will be positioned away from clumps of vegetation so no drill pads will need to be cleared. Photo 2 in Section I shows the typical type of landscape seen across the tenements.

Procedures for the construction and closure of sumps:

- The topsoil to a depth of 30cm is then removed from the working area and stockpiled in a location where it will not be contaminated by other materials or damaged by vehicle movements.
- Each sump will be approximately 4m x 1.5 m x 2m and will be designed with a ramp at one end for fauna egress.
- In areas where there is livestock in close proximity to drilling activities, safety fencing will be put around the sump to prevent animals from falling into the sumps. Koba will speak to landowners about possibly moving livestock to other paddocks if there are concerns about animal safety.
- Each sump will be large enough to contain the drill cutting anticipated from the hole and have sufficient depth that material returned from the drill hole will be buried at least 1 m below the surface.
- On completion of drilling, sumps are left to dry until the material in the bottom is both thick and viscous or dried/cracked and not in a condition where it will splash or move significantly during backfill.
- A photographic record of representative sumps will be taken before backfill commences and a subsequent rehabilitation photo taken afterwards.
- The material excavated from the sumps is returned as far as is practicable in the reverse sequence to its excavation leaving a sufficient slight rise over the top to allow fill to naturally settle and compacts over time and prevent localised ponding.
- The stockpiled topsoil is then spread out across the site by machine, and lightly scarified to encourage vegetation regrowth.

Drillhole construction and decommissioning

Have the personnel responsible for implementing the proposed program read and understood the Earth Resources Information Sheet M21, Mineral exploration drillholes – general specifications for construction and backfilling?	Yes ☒	No ☐

Describe how drillholes will be constructed, including the casing material to be used, depth of casing, if the casing will be cemented, cementing intervals and the class of driller that will install the casing.

Drillholes are open holes that do not require casing. Mud rotary or aircore holes will be drilled using ~5" blade bits. Occasionally there might be the need for 1 – 3 m of temporary surface casing to keep the collar open whilst drilling. Drilling will be overseen by a Class 1 driller.

Drill sumps will be dug prior to drilling and will be used to mix drill muds and contain water as required.

When describing drillhole decommissioning requirements, include the materials to be used, stratigraphic intervals where cement plugs will be placed, if the casing will be removed and when decommissioning will occur after drilling is completed.

Under this PEPR Koba commits to treat the Eyre Formation as a single confined aquifer.

Therefore if Eyre Formation or any other confined aquifer is encountered drillholes will be grouted by the following method:

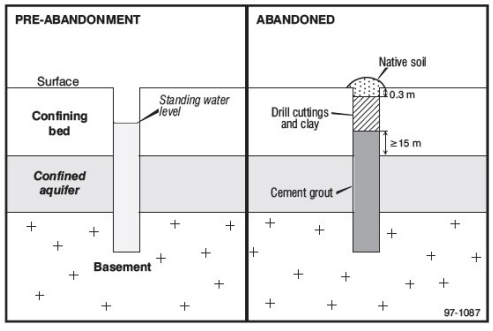
- Fresh cement grout will be mixed on site with a purpose built unit and pumped into the hole.
- Drillholes will be grouted from EOH to a minimum of 15m into the Namba Fm clays (upper confining layer) at a minimum (as per M21 for confined aquifers)
- The remainder of the hole will either be filled with cement grout or drill cuttings, where possible.
- Any remaining cuttings and excess grout will be placed at the bottom of the sump. Note: excess grout would be first used downhole until it reached the surface.
- If temporary casing has been used, every attempt will be made to remove the entire casing, if this is proving difficult it will be cut ~30cm below the ground and capped.
- A plastic hole plug will be inserted ~30cm deep and the remainder of the hole filled with soil and a small mound will be put over the collar as illustrated in M21.
- Koba will endeavour to cement all holes within 3-5 days but it may take up to 7 days.
- Once the sump has dried out, it will be backfilled and topsoil retained for the purpose will be spread back over the site where required to aid in regeneration. The site may then be raked or scarified with the teeth of the backhoe bucket as required. Partial rehabilitation will be ongoing as drilling progresses and final rehabilitation will be completed as soon as practical after completion of the program.
- A scarifier towed behind a light vehicle or the teeth on the backhoe bucket may used to rehabilitate drill sites and access tracks if required.
- All rubbish (including cigarette butts, ear plugs, and A & B foam), hydrocarbons and chemicals will be removed and disposed of appropriately.

If No Eyre Formation or other confined aquifer is encountered (ie Shallow hole that has Namba Fm overlying basement or Bulldog shale)

That drillhole will be rehabilitated as a hole interesecting a single unconfined aquifer in accordance with the M21 guidelines.

- Drillholes will be backfilled with drill cutting, clean fill containing clay or cement within 7 days of completion where possible.
- Any remaining cuttings and excess grout will be placed at the bottom of the sump
- If temporary casing has been used, every attempt will be made to remove the entire casing, if this is proving difficult it will be cut ~30cm below the ground.
- A plastic hole plug will be inserted ~30cm deep and the remainder of the hole filled with soil and a small mound will be put over the collar as illustrated in M21.
- Once the sump has dried out, it will be backfilled and topsoil retained for the purpose will be spread back over the site where required to aid in regeneration. The site may then be raked or scarified with the teeth of the backhoe bucket as required. Partial rehabilitation will be ongoing as drilling progresses and final rehabilitation will be completed as soon as practical after completion of the program.
- A scarifier towed behind a light vehicle or the teeth on the backhoe bucket will used to rehabilitate drill sites and access tracks if required.
- All rubbish (including cigarette butts, ear plugs, and A & B foam), hydrocarbons and chemicals will be removed and disposed of appropriately.
-

Where confined or artesian conditions are expected, include a schematic diagram demonstrating how drillholes will be constructed and decommissioned



Single Confined Aquifer Backfilling

Costeans and bulk sample disposal pits

Will costeans/bulk sample disposal pits be required for the proposed program? If yes, fill out the table below.	Yes ☐	No ☒

Tenement	Number of costeans/pits	Size of costean (length x width) (m^2)	Average depth (m)	Volume excavated (m^3)	Total volume excavated (m^3) (number of costeans/pits x volume)	Total area of disturbance* (length x width) (m^2)
TOTAL						
	Total number of costeans/pits (add each row to calculate the total).				Total volume of material to be excavated (add each row to calculate the total)	Total area of disturbance (number of costeans/pits x area of disturbance for each row, then add each row to calculate the total).

*Includes storage of excavated material at the site (e.g. topsoil and subsoil segregation).

Costeans and bulk sample disposal pit preparation

If costeans/bulk sample disposal pits are required, describe site preparation methods, vegetation clearance, and safety and maintenance requirements.

No bulk sample disposal pits will be needed. Drill cuttings will be put into the existing drill sumps and buried to at least 1m.

Sample management

Describe the size of samples collected (including drilling samples and bulk sampling), collection methods, materials used when collecting the sample, sample disposal methods (including removal of sample bags), safety management and any other sample management requirements at the exploration site (e.g. tarps or matting used to contain cuttings). Include requirements for on-site geological sample management (splitting of archive samples, bag farms, core processing and storage).

Samples:

- The sample laydown area is located outside the driller/rod handler working zone at the rear of the rig.
- Rotary mud cuttings (the sample) are collected and laid out on builders plastic, with each pile representing a 2m interval.
- A representative subset of each 2m sample is placed in a chip tray for geological logging and a geological record.
- Downhole geophysical logging is completed for each drillhole and will identify any mineralised zones. The logging confirms which samples have any significant uranium mineralisation.
- On completion of drilling and after logging the remaining material is returned to the drillhole where possible and the remainder of the samples are put in the sump to be buried under adequate cover over at least 1m and the topsoil placed on top of the sump.
- Sample chiptrays will be stored in a temporary shed at the Koba Resources Exploration Camp which will be set up on site at Oban. The shed will have a roof vent to stop radon buildup. The total mass of radioactive samples within the chiptrays will be less than 100kg so the storage shed will not need to be registered as a storage container for radioactive samples.
- There will not be the requirement to dispose of samples. All samples will be kept and sent to the core library for storage at the end of the program if the company no longer wants to pursue working on this project.

There is no requirement for splitting of archive samples, bag farms, core processing or storage unless core drilling has been completed. No core drilling has been planned for this PEPR application.

Access routes to work areas

Will existing tracks require upgrading and/or maintenance? If yes, detail the work required to upgrade/maintain existing tracks.	Yes ☒	No ☐
Some existing station tracks have extensive damage from heavy rain events. These tracks will be repaired if needed using a grader or a loader to allow for easier access during any exploration activities. This will benefit the local station workers with better access tracks.		
Will access be required across adjoining tenements? If yes, detail the method(s) for gaining access, and if an agreement is in place with all stakeholders. Include the total area of disturbance required (i.e. length (km) and width (m) of tracks) and provide on a locality map.	Yes ☒	No ☐
Limited access will be required across adjoining tenements. When access is required these are still part of the Havilah / Koba tenement package and it is often the same station owners so no further contact is required besides the initial notice of entries paperwork and phone calls / field meetings.		
Will access off existing tracks be required? If yes, detail the method(s) for gaining access and if vegetation clearance is required. Include the total area of disturbance (includes drill traverses and seismic lines) required off existing tracks (i.e. length (km) and width (m) of new tracks).	Yes ☒	No ☐
Overland or cross country driving off established station tracks and roads by high clearance vehicles to access drill sites. These routes are plotted to reduce or eliminate the need for vegetation disturbance or surface grading and will be plotted to minimise travel distance and avoid areas of low relief where natural runoff flows or collects (such as clay pans and creeks) and areas of high vegetation (such as shrubs and trees). These routes may be altered to avoid cultural heritage sites identified during Area Clearance Surveys conducted with Native Title parties. The total length of track disturbance is approximately 20km long and confined to the wheel tracks.		

Indicate planned access routes on a locality plan and distinguish between existing and proposed new access tracks and drill lines (including fence lines).

Campsites, storage and equipment laydown areas

Using the tables below, provide a description of campsites and/or laydown areas required. Indicate the campsite and laydown area on a locality plan.

Campsite details		
Indicate where staff and contractors will be accommodated during the exploration program.		
1 truck mounted donger, 2 caravans at drilling sites or shearers quarters at local stations		
What is the maximum number of personnel requiring accommodation?	9 (1 rig) 12 (2 rigs)	
Is a campsite required to be established? If no, no further information is required.	Yes ☒	No ☐
Provide a description and justification of the camp location (e.g. previously cleared areas etc.), and any other relevant information.		
Campsite will be placed on areas previously drilled so no further clearance is needed		
What will be the total area (ha) of the campsite(s)?	1 ha	
What will be the total area (ha) of vegetation clearance for the campsite?	0 ha	
If vegetation clearance is required, describe the methods used to prepare the site.		
No vegetation clearance will be required		
Will any excavations be required? If yes, describe the purpose of the excavation and the maximum volume (m^3) of material to be excavated.	Yes ☒	No ☐
Small trench will be dug for greywater from washing machines and showers. Approximately $1m^3$		
Are the proposed ablution facilities endorsed/approved for use by the Department of Health or local council, where applicable? If no, indicate why.	Yes ☒	No ☐
SA Health have stated that the installation of a longdrop at the Koba Exploration Camp will be satisfactory for this PEPR application		

Proposed infrastructure (includes caravans, tents, offices, hydrocarbon and water storage requirements etc)	**Quantity**	**Description/capacity**
Truck mounted donger	1 - 2	*bedrooms, kitchen, shower and laundry*
Caravan	2	*Combined 4 beds, 1 kitchen, 1 office, 2 showers, 2 laundries*
Potable water tanks	2	*5000L potable water tank*
Generator	1	*Large generator (around 30kVA) to power all infrastructure*

Laydown area details		
Will laydown areas be required? If no, no further information is required.	Yes ☒	No ☐
Will the laydown area(s) be located at the same location as the campsite? If no, has the location(s) been discussed with the landowner?	Yes ☒	No ☐
Laydown area will be at the Koba Resources campsite at Oban		
What will be the maximum area (ha) required for the laydown area(s)?	1 ha	
What will be the total area (ha) of vegetation clearance for the site?	0 ha	
If vegetation clearance is required, describe the methods used to prepare the site.		
No vegetation clearance will be required		
Will any excavations be required? If yes, describe the purpose of the excavation and volume (m^3) of material to be excavated.	Yes ☐	No ☒

Proposed infrastructure (includes hydrocarbon and water storage requirements)	Quantity	Description/capacity
Diesel Tank	1	*Truck mounted tank*
Drilling water tank	1	*Possible 10000L - 20000L water tank connected to an approved station bore*
Provide a description and justification of the location (e.g. previously cleared areas), and any other relevant information if required.		
Laydown will be placed on areas previously drilled so no further clearance is needed		

Other exploration methods and/or ancillary operations

Are any other proposed exploration methods (e.g. seismic) and/or ancillary exploration operations required? If yes, describe the activity(s), site preparation, vegetation clearance, and safety and maintenance requirements.	Yes ☐	No ☒
N/A		

Water supply and management

Will camp and/or drilling water be required? If yes, describe how and where water will be sourced for drilling, track maintenance and camping purposes (e.g. groundwater, surface water, mains). Provide details on the volume of water required and how wastewater or runoff water will be managed.	Yes ☒	No ☐
Camp and potable water will most likely be trucked in, since the water bores in the area appear to be too salty. Drilling water will be sourced from existing water bores and tanks close to the drilling areas with station owner approval. It is likely that a 10,000L to 20,000L water tank will be placed on water bores used for faster filling of the water truck. (Photo 3 shows Zac Bore which has been flagged by station owners as a possible water bore that can be used for drilling water). Oban Tank is the likely water bore to be used for drilling at Oban.		
Will surface water and/or mineral drillholes be used as a water source/supply? If yes, indicate if a licence for water extraction/usage is required (refer to relevant Natural Resources Management water allocation plan available on the Department for Environment and Water (DEW) website. If a licence is required and has been obtained please attach a copy. Where a licence has not been obtained, include a statement confirming that a licence will be obtained before the extraction and/or usage of water.	Yes ☐	No ☒

Groundwater and drilling investigation activities

Will any water bores be required and/or water investigation activities (e.g. pump testing, water monitoring sites, water storage, turkey nests/dams) be conducted? If yes, describe the water drilling and investigation activities, including site preparation, vegetation clearance, and safety and maintenance requirements.	Yes ☐	No ☒
N/A		
Indicate if well permits have been obtained and whether or not a water extraction licence is required in accordance with the Landscape South Australia Act 2019. If yes, attach a copy of the permit(s)/licences. If no, provide a statement confirming that permits/licences will be obtained prior to commencement of water investigation activities.	Yes ☐	No ☒
Koba will obtain water bore permits and licences if the installation of a drillhole converted to a water bore is required		

Water affecting activities

Will any water affecting activities, other than drilling a water well, be undertaken (refer to s. 127 of the Landscape South Australia Act 2019)? If yes, attach a copy of the permit. If a permit has not been obtained, provide a statement confirming that a water affecting activity permit(s) will be obtained and provide a description of the site preparation, vegetation clearance, and safety and maintenance requirements.	Yes ☐	No ☒
N/A		

Management of hazardous materials

Will activities be conducted in areas of known uranium and thorium mineralisation? If yes, attach a Radiation Management Plan and confirmation of endorsement of the plan by the Environment Protection Authority South Australia (EPA).	Yes ☒	No ☐
Radiation Management Plan was submitted to the EPA on the 25th of March 2024. Approval from the EPA was given on the 17th May 2024.		
Will any other hazardous material be encountered when exploring in the area? If yes, list the types of hazardous materials and provide a management plan on how these materials will be managed.	Yes ☐	No ☒
N/A		

Rehabilitation

Detail all the activities and strategies relating to the remediation of impacts associated with the proposed exploration operations.

Completion of rehabilitation must be achieved within 3 months after the expiry of this PEPR.

Koba are intending to rehabilitate drillholes and sumps during the drilling programs once sumps have adequately dried out

Existing Tracks:

- Proposed drilling and primary access to drill sites will be largely carried out on existing tracks. If rehabilitation is required, tracks will be restored to at least their prior condition on completion of the proposed work (Photo 1 and 2 show existing tracks in the Yarramba Project area).

Overland/cross country driving:

- Overland or cross country driving will be kept to a minimum.
- Access will be sited to minimise vegetation impacts, and disturbance by machinery to both vegetation and soils will be only sufficient to obtain access/egress. Cross country driving is over established grasses and small shrubs to retain the topsoil and vegetation.
- No earth works will be undertaken to obtain access to proposed drill sites.
- Approximately 3-6 months after completion of drilling and initial rehabilitation the site is re-visited, re-photographed and further remediation scheduled as required.

Drill sites – General Information:

- To facilitate minimum disturbance and best rehabilitation, drill collars will be moved to accommodate site conditions (e.g. trees, drainage lines etc.)
- Drill sumps will have all drilled material returned to the sump below 1m in depth. All rubbish and waste will be removed from the sumps. The sump will be filled in using a backhoe or excavator. Once the sump has been filled in the topsoil will be placed on top of the sump and lightly scarified to assist in the germination of vegetation.
- Prior to the commencement of work a photo point is established ~20m away and a series of photographs taken to record surface and vegetation conditions. This will be done for around 20-30 holes as representative examples.
- On completion of drilling and initial rehabilitation a wooden peg marked with the drill hole number is placed at the drill collar and a second series of photos taken as a record.
- Subsequent rehabilitation auditing will use the photo marker as a reference point.
- Approximately 3 months after completion of drilling and initial rehabilitation the site is re-visited, re-photographed and further remediation scheduled as required.
- On completion of drilling and subsequent downhole logging all machinery and equipment will be removed and excess samples disposed of.
- Post drilling site clearance is undertaken with a focus on reducing all visible aspect of ground disturbing activities.

Laydown areas:

- No clearance for a laydown area is needed so rehabilitation should be minimal.
- Any hydrocarbon contaminated material will be removed from site and disposed of at appropriately licensed facilities.

Damaged Tracks:

- After drilling has been completed a scarifier towed behind a light vehicle or the teeth on the backhoe may be used to lightly scarify any damaged tracks as required to encourage regrowth of vegetation.

Detail all the activities and strategies relating to the remediation of impacts associated with the proposed exploration operations. Completion of rehabilitation must be achieved within 3 months after the expiry of this PEPR.
State the estimated budget required to rehabilitate impacted sites.
Koba plans to have a backhoe onsite and rehabilitation of drill sites will be completed on an ongoing basis to avoid a back log of rehabilitation requirements on completion of the program. It is anticipated that rehabilitation costs will be approximately $100,000 in total including cost of cementing drillholes, backhoe hire and operator.

Vegetation Clearance

Will any area of cleared native vegetation be unrehabilitated after the authorised period?	Yes ☐	No ☒
If yes, provide a description of the vegetation present in the application area, the extent of the proposed vegetation clearance and the likelihood of the presence of threatened flora. Provide this information on a map.		
N/A		
State the estimated quantum of significant environmental benefit (SEB) to be gained in exchange for the proposed native vegetation clearance and describe how the SEB will be provided.		
N/A		

SECTION E – LEASE CONDITIONS

Retention leases

Where the retention lease includes specific conditions that are not environmental outcomes, demonstrate where these have been addressed in the PEPR (if relevant) or demonstrate how otherwise they have or will be complied with.

N/A

SECTION F – MANAGEMENT OF ENVIRONMENTAL IMPACTS

Use the table below (instructions provided) to identify all of the potential environmental, social and economic impact events that are likely to occur as a result of the proposed exploration operations, how each of the identified impacts will be managed, and the residual risk, i.e. the level of risk remaining after implementing control and management strategies. Identified potential impact events should be developed based on the aspects of the environment that may be impacted on and the proposed operational details. Potnetial impact events must have corresponding outcomes and measurement criteria.

Where the terms and conditions of an RL include environmental outcomes, list them (where different) in the table below and complete all sections (ie receptor, potential impacts, control strategies, risk assessment and measurement criteria).

Environmental management – potential impacts/events, outcomes, measurable criteria and monitoring plan

			Likelihood of consequence (LH)				
			1	2	3	4	5
			Rare	Unlikely	Possible	Likely	Almost certain
Severity of consequence (CQ)	A	Insignificant	Low	Low	Low	Low	Low
	B	Minor	Low	Low	Moderate	Moderate	Moderate
	C	Moderate	Moderate	Moderate	High	High	High
	D	Major	High	High	Extreme	Extreme	Extreme
	E	Catastrophic	High	Extreme	Extreme	Extreme	Extreme

How to fill out the table

1. Based on the description of the environment and exploration operations, indicate which potential impacts are applicable to the proposed program. Note that some potential impacts are applicable to all programs.
2. For each applicable potential impact (and corresponding receptor), describe control strategies that will reduce the risk of the potential impact to an acceptable level, and achieve the corresponding environmental outcomes.
3. Conduct an impact assessment to determine if the control strategies address the potential impact (i.e. reduce the risk to an acceptable level). Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level.
4. For each applicable potential impact, the corresponding outcome and outcome measurement criteria are required.

5 Based on the description of the environment and proposed exploration activities, determine if any other potential impacts are applicable. For each new potential impact, describe proposed control and rehabilitation strategies, conduct an impact assessment, and develop corresponding outcomes and outcome measurement criteria.

Use the above matrix to conduct an impact assessment for each potential impact.

Impact assessment							Outcomes	Outcome measurement criteria (inc. monitoring plan)
Receptor Lists are not exhaustive.	**Potential impacts** Lists are not exhaustive.	**Is the potential impact applicable (Yes/No)** Some potential impacts are applicable to all programs.	**Control strategies** Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level. – refer to Minerals Regulatory Guidelines MG22 for more information.	**Risk assessment** LH = likelihood of consequence CQ = severity of consequence **LH**	**CQ**	**Risk**		
Stakeholders: • freehold land owners • perpetual lease holders • pastoral lease holders • Aboriginal land (Anangu Pitjantjatjara Yankunytjatjara and Maralinga Tjarutja lands) • Department of Defence • state government departments. • local government (councils) • federal government • native title parties.	Interference to: • existing or permissible land use (includes loss of income, noise, dust, light and other emissions). • buildings, structures, existing tracks or other infrastructure. • aesthetic values of an area. Noncompliance with legislative requirements.	Yes (Applicable to all programs.)	• Provide land access agreements with all landholders • Obtain waivers if and when required • Communicate to all landholders when drilling and other activities will be undertaken with adequate notice given. Provide notice of entry. • Conduct site reconnaissance to locate planned drill holes with each respective landowner to confirm access and logistics • Drilling will not be completed within a 1km radius of infrastructure such as homesteads, sheds and farm infrastructure. • Approval will be sought as to where drilling water can be obtained from the relevant station owners.	2	B	Low	**Stakeholders are fully informed and satisfied with the proposed methods used to conduct exploration activities on their land, and all prescribed forms are served and agreements obtained in accordance with the Mining Act.**	Provide the information requested within the 'Complaints' section of the annual exploration compliance report demonstrating that all reasonable complaints from stakeholders are resolved to the satisfaction of both parties prior to and ongoing during the course of exploration program, without the involvement of DEM. Provide the information requested within the 'Landowner details and liaison' section of the annual exploration compliance report demonstrating that prescribed forms were served and agreements obtained in accordance with the Mining Act prior to the commencement of exploration activities.
Stakeholder: DEW	Interference to: • existing or permissible land use. • buildings, structures, existing tracks or other infrastructure. • aesthetic values of an area. Noncompliance with legislative requirements.	Yes (Applicable to programs located adjacent to or within parks and reserves.)	N/A	*1*	*A*	*Low*	**For activities located within or adjacent to regional reserves, national, conservation and marine parks only:** • **no unauthorised interference with park management activities.**	Provide confirmation that: • Park access notification forms were submitted to DEW and DEM at least 10 days prior to entry into regional reserves, national, conservation and marine parks, or • Program notifications for PEPRs approved for an ongoing period of time, were submitted to DEW and the DEM at least 21 days prior to entry into regional reserves, national, conservation and marine parks.

Impact assessment							Outcomes	Outcome measurement criteria (inc. monitoring plan)
Receptor Lists are not exhaustive.	**Potential impacts** Lists are not exhaustive.	**Is the potential impact applicable (Yes/No)** Some potential impacts are applicable to all programs.	**Control strategies** Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level. – refer to Minerals Regulatory Guidelines MG22 for more information.	**Risk assessment** LH = likelihood of consequence CQ = severity of consequence **LH**	**CQ**	**Risk**		
Flora and fauna and their habitats; includes Commonwealth and state scheduled species.	Loss/modification of native vegetation and associated habitats through the clearance of vegetation.	Yes (Applicable to exploration programs located within or impacting on native vegetation.)	• Cross country access will be driven with no physical clearance needed • Drilling activities will be in open plain areas away from denser zones of native vegetation • Drill sites and access tracks will be rehabilitated to promote growth of native vegetation • Vehicles will be restricted to a single access track to minimize disturbance of native vegetation. • As stated, clearance of native vegetation will be avoided and no endangered species will be affected.	*2*	*A*	*Low*	**No permanent loss/modification of native flora and fauna populations and their habitats through:** • **clearance** • **fire** • **other** **unless prior approval under the relevant legislation is obtained.**	Maintain before, during and after photographic evidence of all exploration sites (e.g. drillsites, new track exit/entry points off existing tracks, costeans, campsites) demonstrating that: • The area and method of disturbance is consistent with that described in the PEPR. • No uncontrolled fires* occurred as a result of exploration activities. Representative photos to be included within the annual exploration compliance report.
All flora and fauna, especially listed species.	Loss/modification of the environment (biological, social and economic) through the introduction of weeds and pathogens.	Yes (Applicable to all programs.)	• No tracks will be cleared • Drilling activities will be in open plain areas away from native vegetation regions • No rare or endangered flora or fauna is known to exist in the area according to the flora and fauna surveys completed • When all vehicles arrive to site it will be a company expectation that vehicles are clean of mud to avoid possible weed contamination. • Vehicles we be inspected with a alpha scintollometer as part of the radiation management plan when they arrive to site and leave site which requires vehicles to be free of mud. Vehicles will need to be cleaned before coming to site and prior to leaving site. • Photos of drill sites will be taken before drilling and after rehab to ensure that no weeds have been introduced to drill sites as well as ensuring that rehab of vegetation has been successful • No fires will be permitted on drill sites to prevent the possible loss of vegetation due to fires spreading out of control. • Monitoring of CFS warnings will be completed on a daily basis. In extreme fire conditions we will make a decision as to whether to stop drilling during extreme fire conditions.	*2*	*A*	*Low*	**No introduction of new species of weeds and plant pathogens, nor increase in abundance of existing weeds species.**	Provide a statement within the 'Compliance with approved programs' section of the annual exploration compliance report, confirming that: • Vehicle logs were kept during the exploration program, demonstrating that all vehicles are clean and free of plant and mud material prior to entering properties† within the tenement areas, unless otherwise agreed to with the relevant landowners. • Photographic evidence before and during exploration operations and after rehabilitation of disturbed sites was captured, demonstrating that no new weeds and plant pathogens were introduced, nor an increase in abundance of existing weeds recorded.
All fauna	Entrapment of fauna through open drillholes and excavations.	Yes (Applicable to exploration programs that involve drilling and/or require excavations.)	• No tracks will be cleared • Drilling activities will be moved away from areas with substantial native vegetation to areas of less density to minimize impacts on fauna • Sumps will be constructed with a ramp on one side to allow any animals that may fall into the sump can walk out of the sump. It has been agreed with the pastoral owners that where possible livestock will be removed from the area being drilled to another location to remove all risk of livestock injury or death. When needed Koba will erect temporary fencing around the sump in fauna rich areas like dam regions.	*2*	*A*	*Low*	**No fauna traps created as a result of exploration activities.**	Maintain before, during and after photographic evidence of all drillholes and/or excavations demonstrating that: • All drillholes were permanently or temporarily capped/plugged immediately upon completion. • No fauna and livestock became trapped in drillholes and/or excavations throughout the duration of the program. • All rehabilitation was completed within 3 months of expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. Representative photos are to be included within the annual exploration compliance report. Provide the information requested within the 'Rehabilitation' section of the annual exploration compliance report.
Aboriginal heritage sites	Disturbance to Aboriginal heritage.	Yes (Applicable to all programs.)	• Koba has completed a heritage survey at Oban and will be conducting further heritage surveys in the near future on other prospects prior to any drilling. • Any artifcacts identified in the survey will be recorded and an avoidance zone around these locations will be established by Koba. The heritage groups have asked that we don't fence off artifacts but simply avoid them. This will include the covering over of any tracks in the vicinity of artifcats identified and moving planned drillholes away from any sites.	*1*	*A*	*Low*	**No disturbance to Aboriginal artefacts or sites of significance unless prior approval under the relevant legislation is obtained.**	Maintain a database and provide a statement within the 'Compliance with approved programs' section of the annual exploration compliance report demonstrating that: • Heritage sites were not impacted during the conduct of the exploration program, unless prior approval was obtained under the appropriate legislation. • Work ceased on discovery of a significant site and recommenced only after authorisation. • Aboriginal heritage sites identified during the exploration program were appropriately recorded and reported to authorities, if not previously known.

Impact assessment							Outcomes	Outcome measurement criteria (inc. monitoring plan)
Receptor Lists are not exhaustive.	**Potential impacts** Lists are not exhaustive.	**Is the potential impact applicable (Yes/No)** Some potential impacts are applicable to all programs.	**Control strategies** Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level. – refer to Minerals Regulatory Guidelines MG22 for more information.	**Risk assessment** LH = likelihood of consequence CQ = severity of consequence				
				LH	**CQ**	**Risk**		
European heritage sites and sites of scientific and environmental significance	Disturbance to European heritage sites and sites of scientific and environmental significance (e.g. geological monuments, fossil reserves).	Yes (Applicable to exploration programs located close to or within European heritage sites and sites of scientific and environmental significance.)	• There are no known heritage sites or sites of scientific and environmental significance in any of the proposed drilling regions	*1*	*A*	*Low*	**No disturbance to European heritage sites and to sites of scientific and environmental significance unless prior approval under the relevant legislation is obtained.**	Demonstrate no impact to heritage sites and sites of scientific and environmental significance by: • Maintaining evidence, including detailed maps showing sites compared to the location of exploration activities, and photographic evidence of sites before and after the conduct of the exploration program. • Providing a statement within the annual exploration compliance report confirming sites were not impacted during the conduct of the exploration program.
Soil/vegetation/fauna	Soil/vegetation contamination (e.g. hydrocarbons, rubbish, drill samples/cuttings, ablutions, other sources).	Yes (Applicable to all programs.)	• All rubbish will be removed from drill sites and the exploration camp and disposed at a suitable landfill site including at Mulyungarie Station or Portia Goldmine with their approval. • Any hydrocarbon spills will be cleaned according to legislation. Oil spill kits will be on site to be used if required • Photographic evidence of representative sites before and after drilling will be provided to show that all contamination has been removed. No rubbish will be permitted in drill sumps. • Builders plastic will be laid down at each drill site to put drill cuttings on to avoid contamination with topsoil and vegetation. When the samples are dried out they will be tipped into the drill sump and the plastic will be reused on another drillhole.	*2*	*B*	*Low*	**No contamination of soil and vegetation as a result of exploration activities.**	Demonstrate that all domestic or industrial waste (includes general rubbish and hydrocarbons) is disposed of in accordance with the *Environment Protection Act 1993* within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), and that all fuel and chemicals are stored in accordance with EPA requirements, by providing: • The name, location and contact details of the authorised waste disposal facility. • A statement within the 'Compliance with approved programs' section of the annual exploration compliance report confirming domestic and industrial waste was removed from all exploration sites and disposed of at an authorised waste disposal facility. • Photographic evidence within the annual exploration compliance report demonstrating that all fuel and chemical storage facilities were managed in accordance with EPA requirements. Maintain photographs of all exploration sites and provide representative photos within the annual exploration compliance report demonstrating that drill cuttings are: • removed from site and disposed of at a licensed facility • buried under a minimum of 30 cm of soil, or in accordance with EPA guideline, *Radiation protection guidelines on mining in South Australia: mineral exploration*, available on the EPA website, or • backfilled down the drillhole, within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. Provide the information requested within the 'Rehabilitation' section of the annual exploration compliance report.
Soil	Disturbance to the soil profile and topography, and accelerated soil erosion caused by exploration activities (e.g. construction of sumps, new tracks and drill pads; ground compaction at laydown areas and camps).	Yes (Applicable to all programs.)	• Topsoil will be stockpiled separately when sumps are dug and put back on the surface when rehabilitated and lightly scarified • No track or drill pad clearance will be required due to the open plains. • The camp location and laydown area have been chosen in areas where previous drilling has been completed to minimize soil erosion. • When needed Koba have pre-arranged the use of a grader and water truck out of Portia Goldmine to repair tracks when needed. This will also ensure that station tracks are in a suitable condition to be used by the local landowners at all times.	*2*	*A*	*Low*	**Where soil disturbance occurs as a result of exploration activities, ensure that:** • **topsoil quality and quantity is maintained** • **the soil profile and topography is reinstated to original conditions** • **there is no accelerated soil erosion.**	Maintain before, during and after photographic evidence of all excavations, drillsites, camps, laydown areas and new tracks demonstrating that: • The soil profile and topography is reinstated to original conditions and is consistent with natural surroundings within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. • Where required, sufficient topsoil is removed (depending on soil profile), stored separately from subsoil and reinstated (in the correct order) within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. • There are no signs of accelerated soil erosion during and post rehabilitation of disturbed sites. Representative photos to be included within the annual exploration compliance report. Provide the information requested within the 'Rehabilitation' section of the annual exploration compliance report.

Impact assessment							Outcomes	Outcome measurement criteria (inc. monitoring plan)
Receptor Lists are not exhaustive.	**Potential impacts** Lists are not exhaustive.	**Is the potential impact applicable (Yes/No)** Some potential impacts are applicable to all programs.	**Control strategies** Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level. – refer to Minerals Regulatory Guidelines MG22 for more information.	**Risk assessment** LH = likelihood of consequence CQ = severity of consequence				
				LH	**CQ**	**Risk**		
Surface water	Alteration to surface water – interference to surface drainage.	No (Applicable to exploration programs that are likely to impact on surface drainage channels.)	• No drilling will occur close to existing waterways • No track clearance is required to cross waterways	*1*	*A*	*Low*	**No permanent modification to hydrological features caused by exploration activities without obtaining a water affecting permit from the relevant Landscape Board (under Landscapes Act SA 2019).**	Provide before, during and after photographic evidence within the annual exploration compliance report demonstrating that original drainage contours (watercourses and lakes) are consistent with the natural relief post rehabilitation within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period). Alternatively, provide copies of water affecting permits within the annual exploration compliance report.
Groundwater/aquifer	Groundwater contamination: • contamination of aquifers through entry of pollutants from the surface • interconnection between aquifers • degradation of natural hydrostatic conditions (maintain pre-drilling pressures).	Yes (Applicable to all exploration programs that may intersect groundwater.)	• Engaged experienced Rotary Mud drill contractor to ensure specialist expertise in drilling through Tertiary aquifers. • Planned drilling is well above the depth of known artesian aquifers (eg. Cadna-Owie Formation). • Rehabilitation will be completed according to the M21 guidelines. Eyre Formation will be treated as a confined aquifer. • Only approved biodegradable drilling products will be permitted to be used when drilling. • No hydrocarbons or chemical products will be permitted to be disposed of in drillholes.	*2*	*B*	*Low*	**Drillholes restored to controlling geological conditions that existed before the hole was drilled or, where it is intended to re-enter the hole, the hole must be completed with casing of adequate strength and the casing cemented so that all aquifers are isolated to prevent the movement of any fluids behind the casing.**	Maintain evidence demonstrating that drillholes are decommissioned in accordance with Earth Resources Information Sheet M21, *Mineral exploration drillholes – general specifications for construction and backfilling*, and/or specific conditions from DEW (Groundwater) within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. Provide the information requested within the 'Groundwater' section of the annual exploration compliance report.
Soil/vegetation/fauna	Discharge of groundwater into the surrounding environment.	Yes (Applicable to all exploration programs that may intersect groundwater or where activities require the discharge of groundwater into the surrounding environment.)	• Sumps will be dug on all drill sites prior to drilling. All drilling returns will go directly into the sump. • The excavator or backhoe used to dig sumps will be left on site to address any unwanted additional water flow should the water levels exceed the sumps buy digging additional sump capacity if needed. • The Eyre Formation aquifers are unlikely to be artesian aquifers that could encounter higher than normal water pressure. • In the unlikely situation where water flow cannot be stopped then Koba will look at cementing the hole asap to minimize groundwater discharge.	*2*	B	*Low*	**No discharge of groundwater outside of the exploration site (e.g. drillsite) into the surrounding environment and no discharge of water into a watercourse, unless prior approval under the relevant legislation is obtained.**	Maintain photographic evidence of all drillsites demonstrating that groundwater was not discharged into the surrounding environment, unless water affecting activity permits were obtained allowing the discharge of groundwater into watercourses and/or lakes. Representative photos and water affecting activity permits (where applicable) to be included within the annual exploration compliance report.
Groundwater users	Interference to existing water users when extracting water from existing dams, water bores or mineral drillholes.	Yes (Applicable to all exploration programs that may require the use of water from existing dams, water bores or mineral drillholes.)	• Permission has been given from landowners to use a well on their stations to put a tank on for drilling water. • Station managers have asked us not to extract water from their dams • No drilling will be permitted within 100m of dams and watercourses.	*2*	*B*	*Low*	**No public nuisance impacts resulting from the extraction of water for exploration purposes, unless prior approval under the relevant legislation is obtained.**	Provide the information requested within the 'Complaints' section of the annual exploration compliance report demonstrating that all reasonable complaints from stakeholders were resolved to the satisfaction of both parties, prior to and ongoing during the course of the exploration program without the involvement of DEM. Where permits are required for the extraction and/or usage of groundwater, provide copies of the licence or permit within the annual exploration compliance report.
Soil/vegetation/fauna	Degradation of rehabilitated access tracks caused by third party access (includes previously closed and rehabilitated access tracks).	Yes (Applicable to exploration programs that create new access tracks.)	• Use of existing tracks will be done where possible • No new tracks will need to be cleared due to the open plains where drilling has been planned. Vegetation patches will be avoided. • Single tracks will be driven to and from drill sites when required. • There should be no evident tracks for third party users to use.	*2*	*B*	*Low*	**Rehabilitated access tracks remain permanently closed, unless prior approval under the relevant legislation is obtained.**	Maintain before and after photographic evidence demonstrating that all tracks are closed and rehabilitated within 3 months of the expiry of the PEPR approval (for PEPRs approved for a period of 12 months), or 3 months after the expiry of a program notification (for PEPRs approved for an ongoing period), unless otherwise authorised. Representative photos are to be included within the annual exploration compliance report. Provide the information requested within the 'Rehabilitation' section of the annual exploration compliance report.
Community/landowners	Damage to infrastructure and loss of income through fire.	Yes (Applicable to all programs.)	• Drilling will be completed in open plains at least 1km away from station buidlings • The only infrastructure near drilling areas are fences and wells used to extract water • Care will be taken to maintain a considerable distance from fences and wells where possible • The primary threat is grass fires. Koba will abide by all standards	*2*	*B*	*Low*	**No loss of infrastructure or income through fire as a result of exploration activities.**	Provide a statement within the 'Compliance with approved programs' section of the annual exploration compliance report confirming that no uncontrolled fires* occurred. Alternatively, provide a report on the independent investigation of all uncontrolled fires* demonstrating that the licensee could not have reasonably prevented the fire through the implementation of precautionary measures.

Impact assessment							Outcomes	Outcome measurement criteria (inc. monitoring plan)
Receptor Lists are not exhaustive.	**Potential impacts** Lists are not exhaustive.	**Is the potential impact applicable (Yes/No)** Some potential impacts are applicable to all programs.	**Control strategies** Indicate where there is uncertainty pertaining to the likely effectiveness of the control strategies. Where the risk is not considered low, provide justification that the risk is acceptable, or consider additional strategies to reduce the risk to an acceptable level. – refer to Minerals Regulatory Guidelines MG22 for more information.	**Risk assessment** LH = likelihood of consequence CQ = severity of consequence **LH**	**CQ**	**Risk**		
			imposed by the pastoral owners and CFS local fire restrictions regarding fire safety and prevention. The locals understand the climate conditions and areas of risk on the properties best. The staff/contractors of Koba will be inducted on fire prevention and safety. • All fire bans will be adhered to. Vehicles will be fitted with fire extinguishers and the support truck will have a fire suppression unit. • Fires will not be permitted on drill sites but an approved fire pit for warmth and cooking will be allowed at the camp site on non fire ban days only. • Fire is virtually unknown in this region due to the sparsity of flammable vegetation. Water is carried at all times and would be used to extinguish any fires if caused by the drilling operations.					
General public	Injury or death to members of the public as a result of exploration activities.	Yes (Applicable to all programs.)	• All drill rig safety guidelines will be followed • All personnel without a hard hat must stay at least 30m away from the rig. • All operating personnel will be inducted by Koba • In discussion with landowners we have stated that they are welcome to come and see the drilling. They will be required to get the attention of the senior site person from Koba who will explain the safety rules as well as exclusion zones and distances.	*1*	*A*	*Low*	**No accidents involving the public that could have been reasonably prevented by the licensee.**	Provide a statement within the 'Compliance with approved programs' section of the annual exploration compliance report confirming no accidents occurred involving the public during and after the exploration program. If an accident involving the public did occur, provide a copy of the independent investigation report within the annual exploration compliance report demonstrating that the licensee could not have reasonably prevented the accident through the implementation of precautionary measures.
General public, employees, contractors and the environment	Contamination of the environment when exploring for known uranium and thorium deposits. Public and employee/contractor exposure to low level radiation.	Yes (Applicable to exploration programs located within known uranium or thorium deposits.)	• Recordings of gamma levels at drill sites will be taken before and after drilling to ensure no surface contamination occurs and levels remain consistent. • Drilling returns will be contained within inground sumps and cuttings buried >1m deep within drill site sumps. • All staff permitted on site will be required to have full site and radiation safety inductions. A record of all inducted staff will be kept, and daily reports taken to record daily personnel on site. • All field personnel involved with drilling will be issued with radiation monitor badges during drilling operation. ARPANSA OSL badges will be issued to individuals and worn at all times while on drill site and handling samples. • Personal dose levels are all anticipated to be within safe limits throughout the program with any radiation exposure predicted to be of low levels. To further reduce risk to drill site staff, contractors and visitors are required to wear standard PPE. • All drill cuttings will have radiation levels recorded utilising a gamma scintillometer, with whole metre interval recordings taken and recorded within an active drilling database. • Routine drill site and rig inspections will be conducted by Koba Resource personnel to monitor and record radiation levels in conjunction with environmental and safety compliance monitoring. • Washdown of site vehicles is to be conducted frequently. • On completion of program drill rigs and equipment leaving site will require washdown before being inspected by Koba personnel for weed and radiation clearance prior to leaving site. • Radiation monitoring of all vehicles leaving site will be conducted.	*2*	*B*	*Low*	**No increase in background radiation levels, and employee/contractor exposure levels during the exploration program are within safe limits.**	Maintain a database and provide a statement within the 'Compliance with approved programs' section of the annual exploration compliance report demonstrating that: • Radiation levels post exploration and rehabilitation are consistent with pre-existing background levels. • Employee and contractors exposure levels were within safe limits during the exploration program.
Other (if applicable)								

* Uncontrolled fires = fires that escape outside of the work area (e.g. drillsite).

† Properties = freehold (cropping and grazing land); perpetual/pastoral lease land; council land; regional reserves; national, conservation and marine parks; Aboriginal land; Commonwealth land etc.

SECTION G - OPERATOR CAPABILITY

Provide information demonstrating that the tenement holder and operator (where applicable) has the capability to conduct the program in a manner that consistently ensures ongoing achievement of the environmental outcomes. This may be demonstrated within the PEPR by providing an overview of the following:

- Manuals or standard operating procedures that outline the safe and environmentally sound operation of all critical operations associated with the exploration program that ensure compliance with the PEPR.
- Systems in place to monitor, audit and assess compliance against the criteria approved in the PEPR.
- Systems in place to identify and report any noncompliance with regulatory requirements or relevant environmental outcomes (e.g. measures in place to report incidents in accordance with regulation 79(3)).
- Practices and procedures in place to provide appropriate communication of regulatory requirements to employees and contractors (e.g. induction programs).
- Practices and procedures in place to respond to, and communicate with landowners and external parties on the proposed program and compliance matters (e.g. complaints)

- Koba will conduct a safety, environment and radiation induction to all personnel on site. Part of this process will be all personnel signing off they they have been adequately inducted by a Koba representative.
- As part of the radiation management plan the site radiation safety officer will oversee the recording of various radiation readings during the project to keep in the radiation logbook. This will also involve the collection of data that fulfills the requirements of the PEPR such as location of sumps and photographic evidence to support the environment changes looking at before and after photos and radiation readings.
- The designated radiation safety officer for Koba will ensure that all aspects of the radiation management plan and PEPR are followed. Any non-compliance to the PEPR will be identified when completing the radiation logbook forms since the basis for the radiation management plan is the PEPR.
- As part of the radiation management plan a radiation safety induction will be completed for all personnel on site by the radiation safety officer. Part of this induction process will also be an induction on what is expected by Koba in terms of environment, safety and rehabilitation of all work areas.
- Communication with landowners has already commenced. The majority of landowners who Koba have spoken to have shown support for the program and are pleased with the ongoing communication that Koba has provided so far and will continue into the future work programs.
- Koba will do regular reports to the EPA in regards to radiation safety for all employees and contrcators.

SECTION H –ADDITIONAL INFORMATION

List any other supporting information and/or documents submitted with the application, including land access approvals/permits required to conduct the proposed exploration program.

Appendix 1 – Radiation Management Plan

SECTION I – PHOTOS

Include photographs in this section:

- that have been obtained during site visits
- that help describe relevant environmental and operational aspects in the PEPR.

To insert photos, copy and paste the photo into the template below. Resize photos to fit page width. Ensure that all information about each photo is completed and refer to the photo number in the relevant section of the PEPR.

Site identification	Date taken	Photo number & PEPR section reference	Easting (GDA94)	Northing (GDA94)	Zone	Details and Comments
Oban Prospect	07/02/2024	Photo 1 – Section C	480161	6549026	GDA_54	See Below

This photo was taken within the Oban Uranium Prospect. It show the typical landscape that is seen across the Oban area. The vegetation is low grasses and shrubs with localised pockets of larger shrubs and trees. There are over 500 holes drilled in the Oban Prospect already with numerous existing tracks seen across the area such as the track shown in the photo. Use of existing tracks will be prioritised where possible.

Site identification	Date taken	Photo number & PEPR section reference	Easting (GDA94)	Northing (GDA94)	Zone	Details and Comments
Mt John Prospect	07/02/2024	Photo 2 – Section D	460866	6508096	GDA_54	See Below

This photo is the typical landscape around the Mt John Prospect. The vegetation is low grasses and shrubs with rare clumps of trees and larger shrubs. There are numerous existing station tracks across this region including the track shown in this photo. The tracks are connected to existing gates along fencelines.

Site identification	Date taken	Photo number & PEPR section reference	Easting (GDA94)	Northing (GDA94)	Zone	Details and Comments
Zac Bore (Mt John)	07/02/2024	Photo 3 – Section D	464225	6506659	GDA94_54	See Below

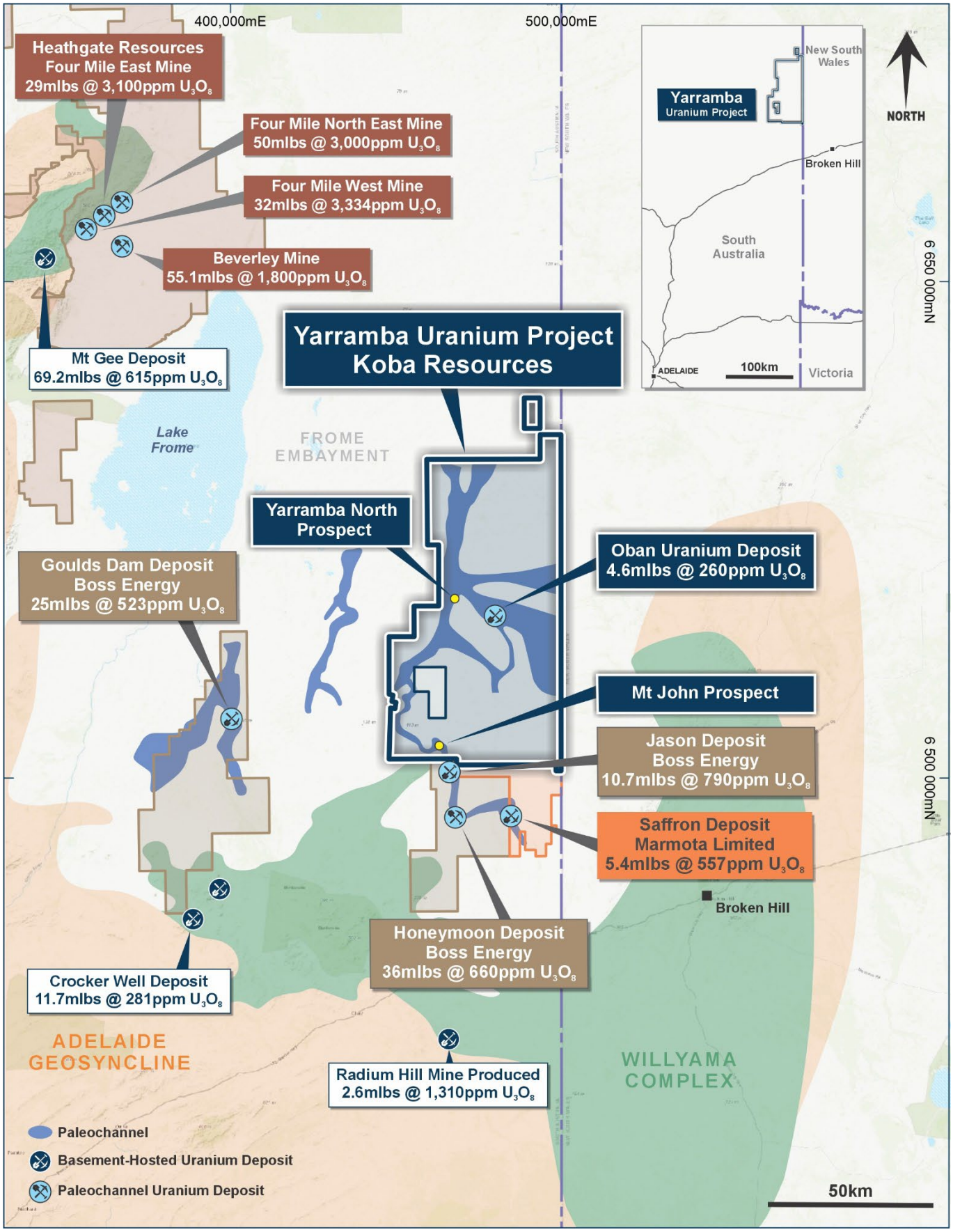
Zac Bore is located near the planned drilling location at Mt John. In discussions with Greg from Yarramba Station, he would be happy for Koba to use this bore for drilling water. This would include the installation of a large water tank to store the water.

SECTION J – MAPS

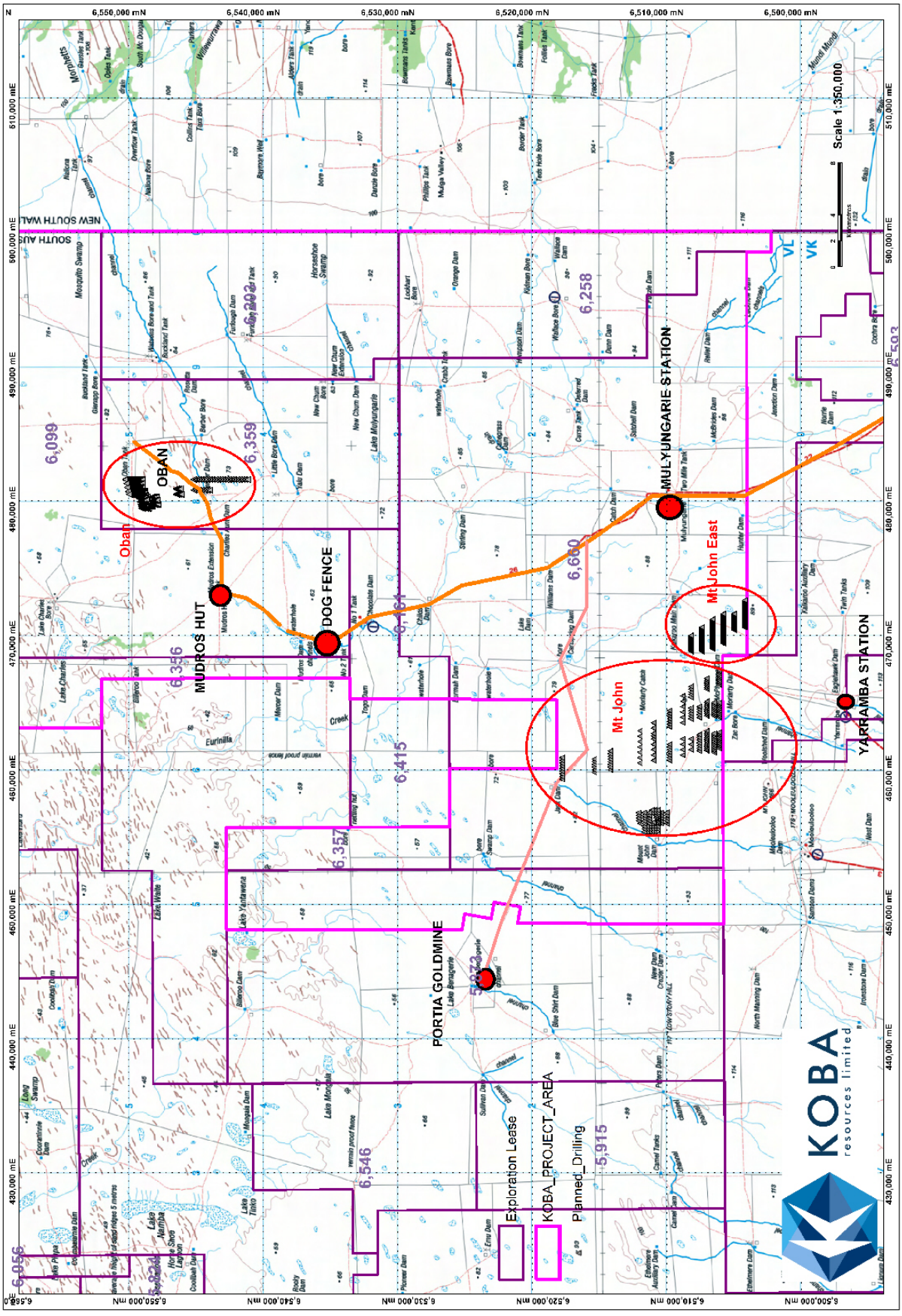
Provide a map(s) showing the following information that is located adjacent to or within the proposed area of operations, where applicable:

- tenement boundaries, **(See Maps 1 & 2)**
- cadastral information, **(See Map 2)**
- existing surface contours, **(See Map 2)**
- existing vegetation, **(N/A)**
- location of the proposed exploration operations (includes drillholes, existing and new access tracks, drill traverses, campsites, laydown areas and other applicable information) and/or the target exploration area(s), **(See Maps 3 – 8)**
- location of existing ephemeral and permanent rivers, creeks, swamps, streams or watercourses and water management structures, **(See Map9)**
- location of towns, houses and homesteads, existing roads, rails, fences, transmission lines, buildings, dams and pipelines **(See Map 10)**
- known sightings of listed species,
- location and extent of all environmentally sensitive areas,
- any relevant land use types (e.g. parks and reserves, Aboriginal freehold land, Woomera Prohibited Area).

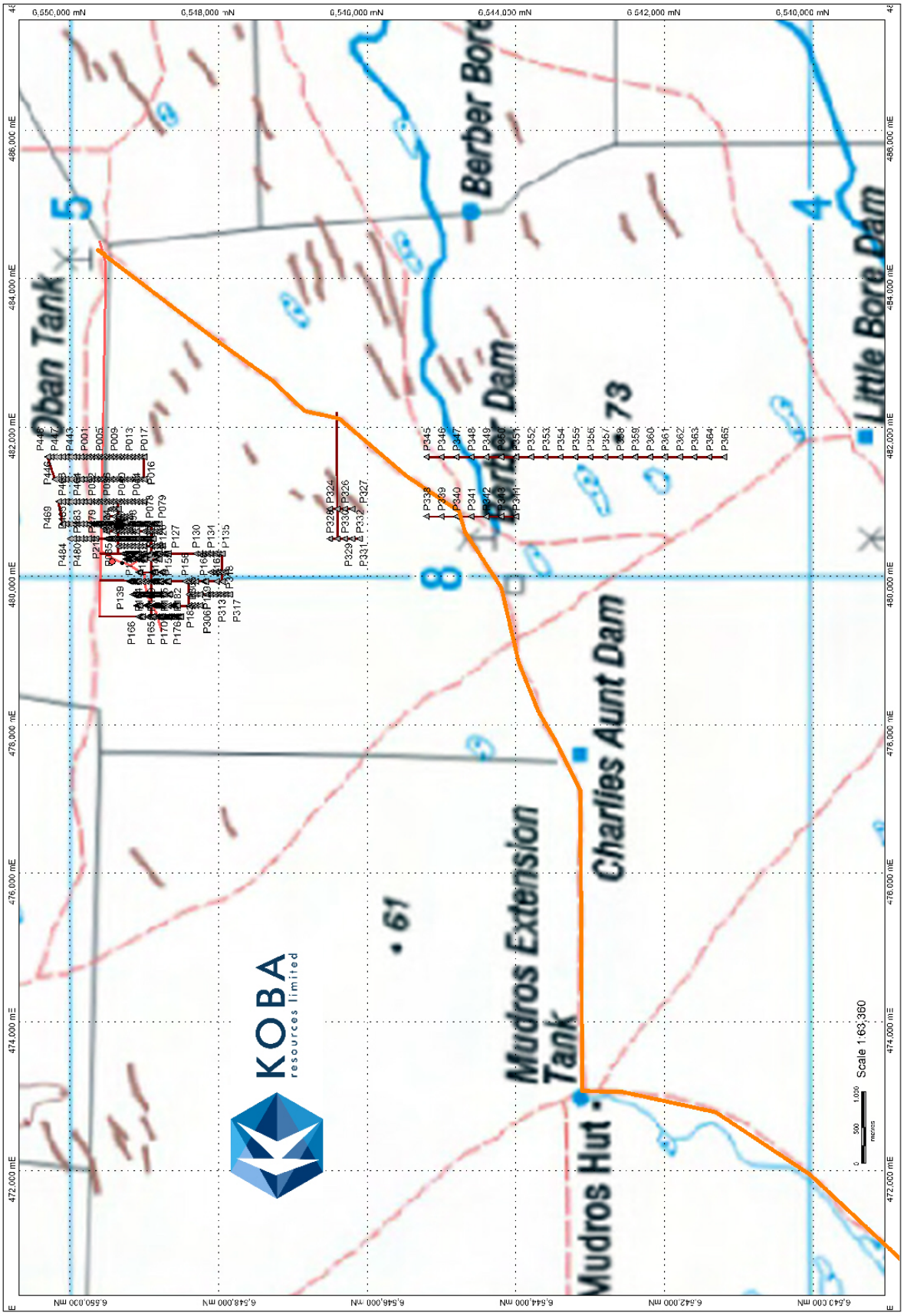
All maps and sections must conform to the standards outlined in the Exploration PEPR Terms of Reference.



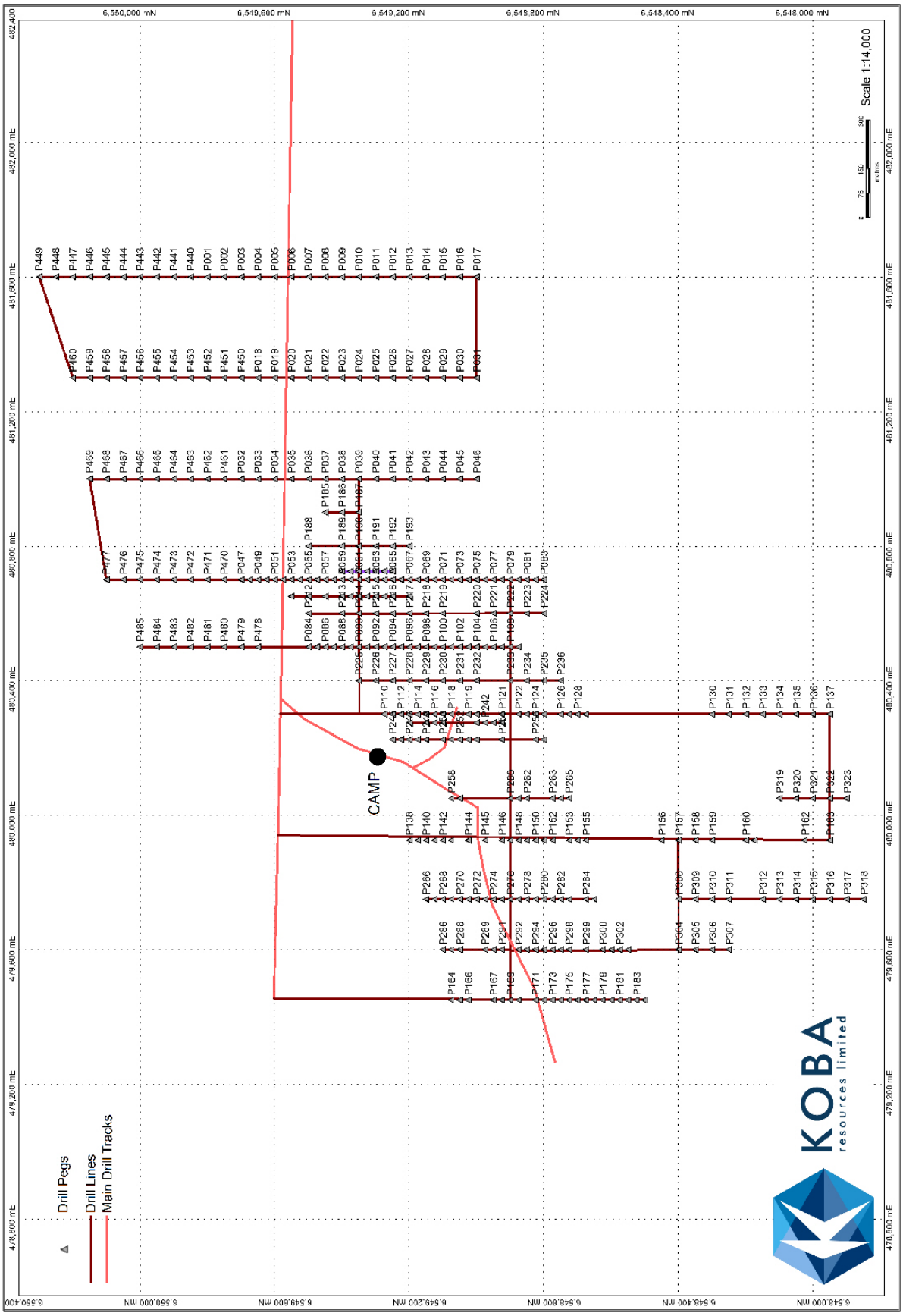
Map 1. *Location of the Yarramba Uranium Project within the Frome Embayment.*



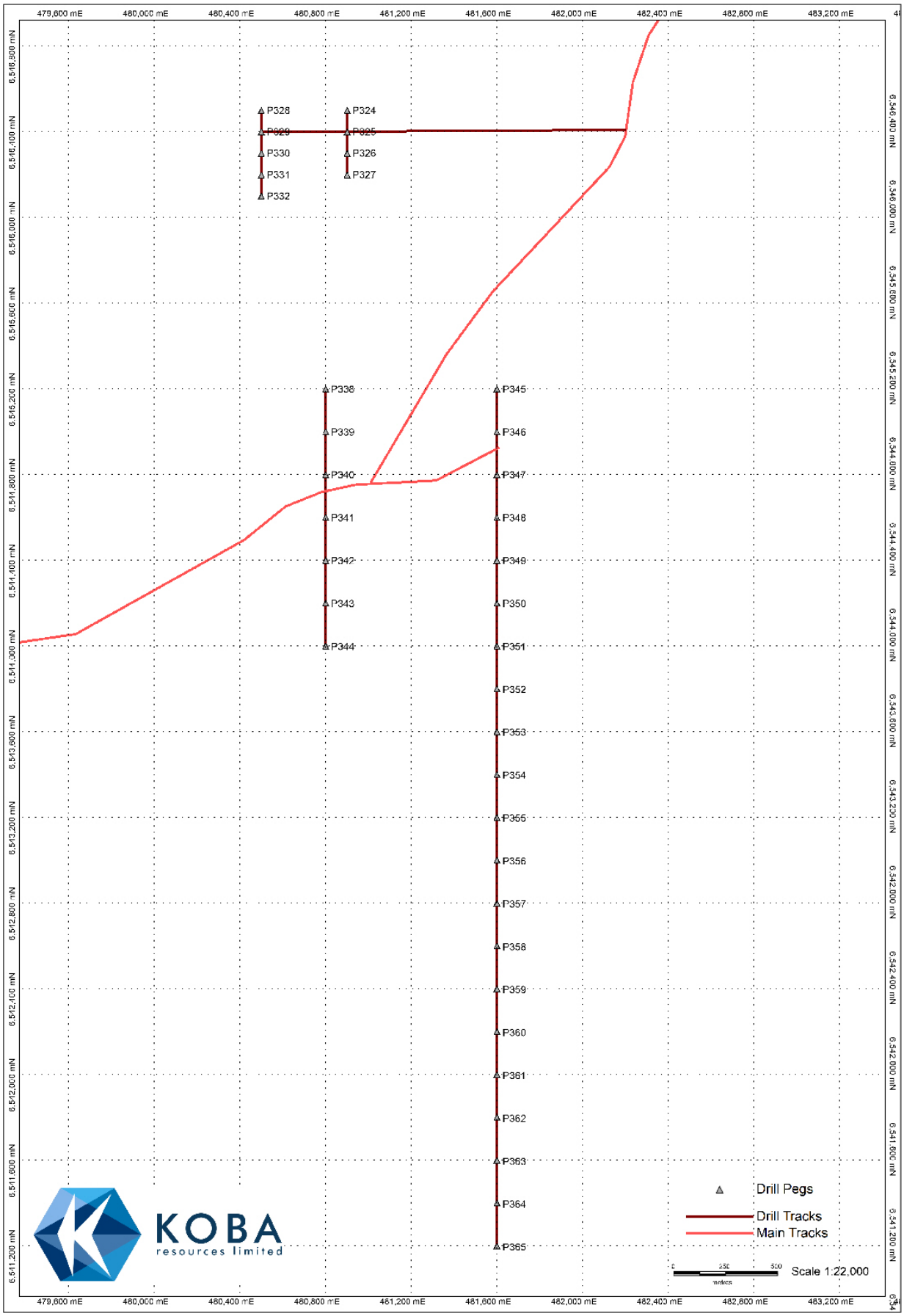
Map 2. *Location of EL6359 and EL6660 showing the planned drilling locations*



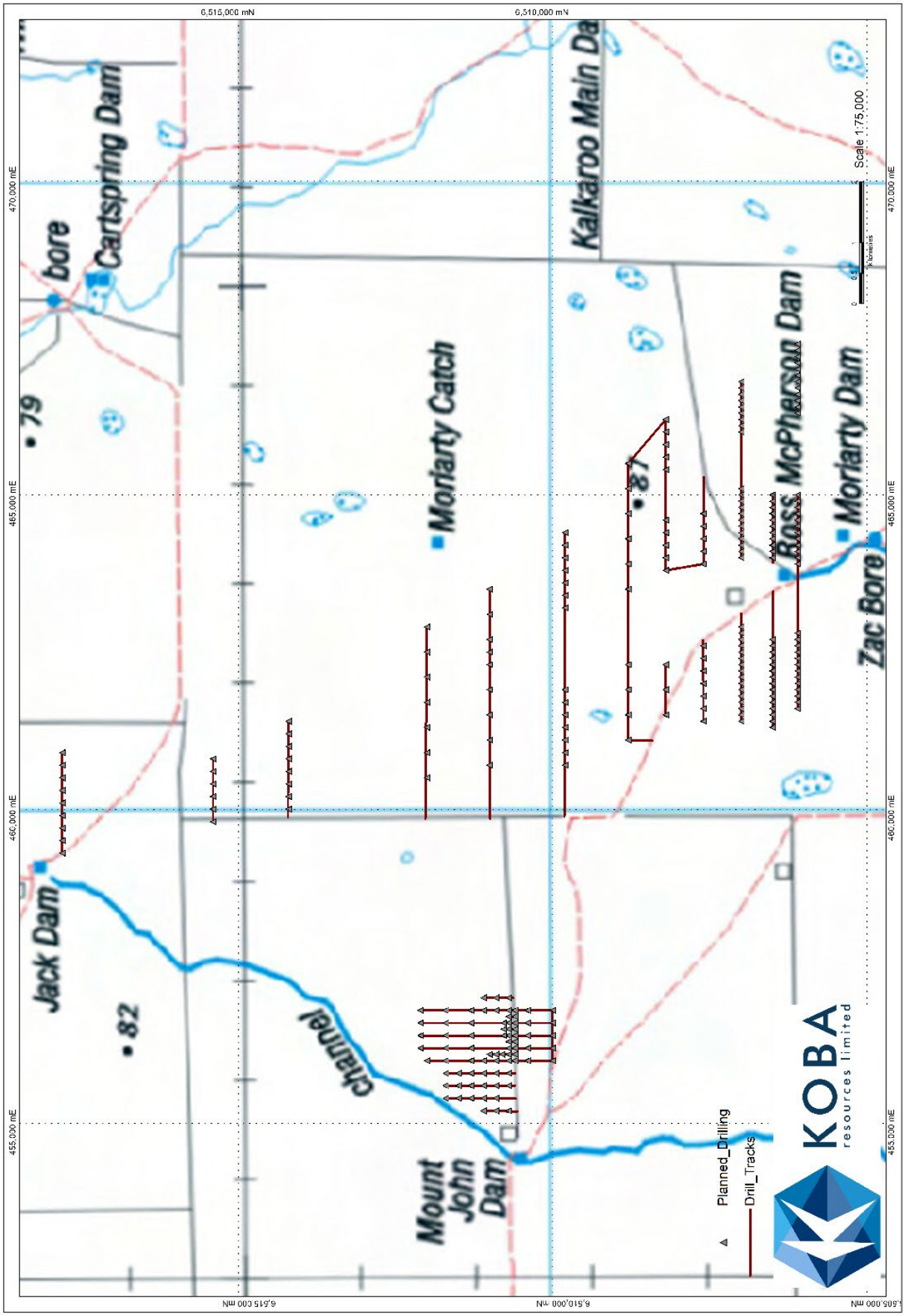
Map 3. *Location of planned drilling at the Oban Prospect on EL6359*



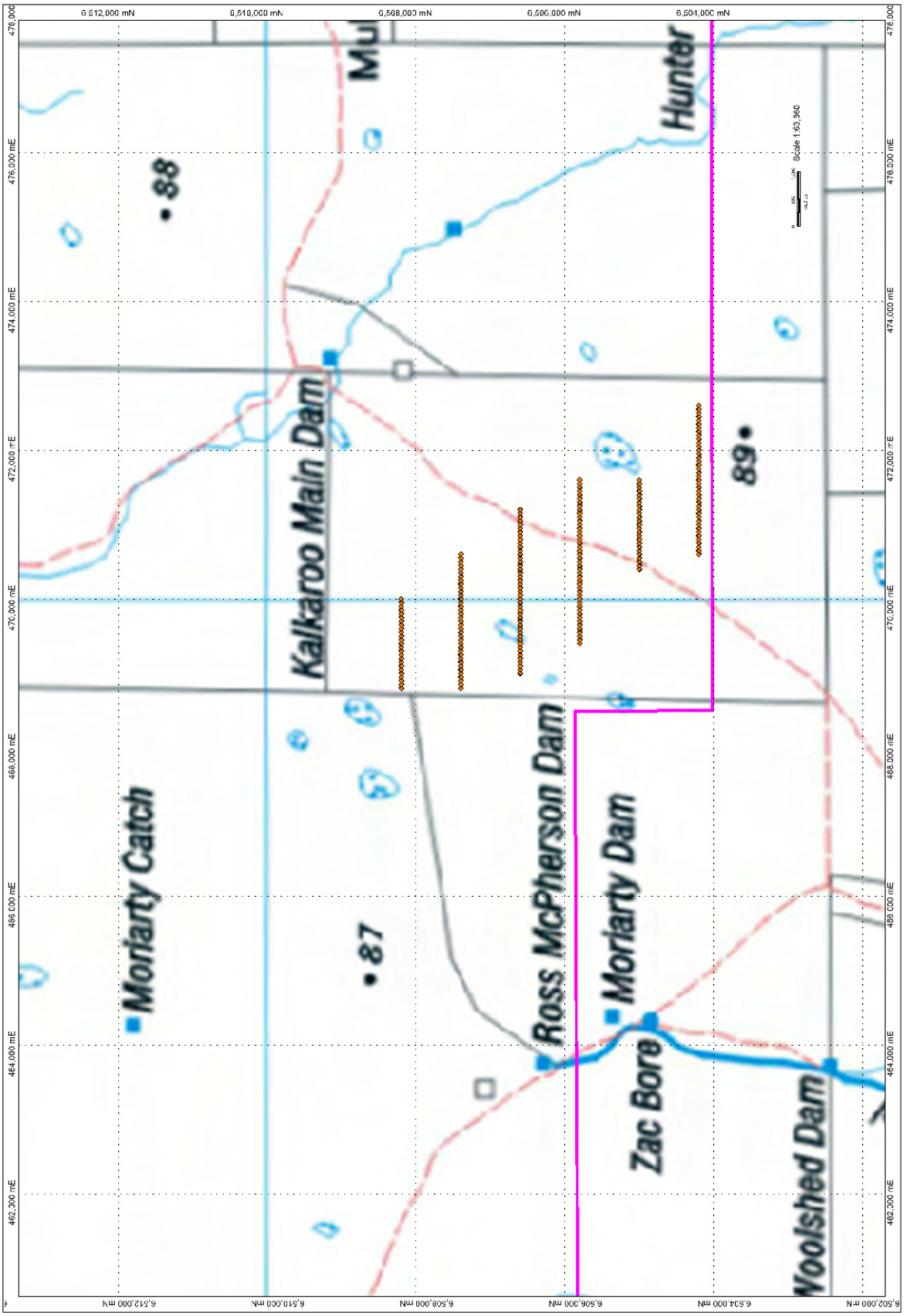
Map 4. *Location of planned drilling at the Oban Prospect on EL6359*



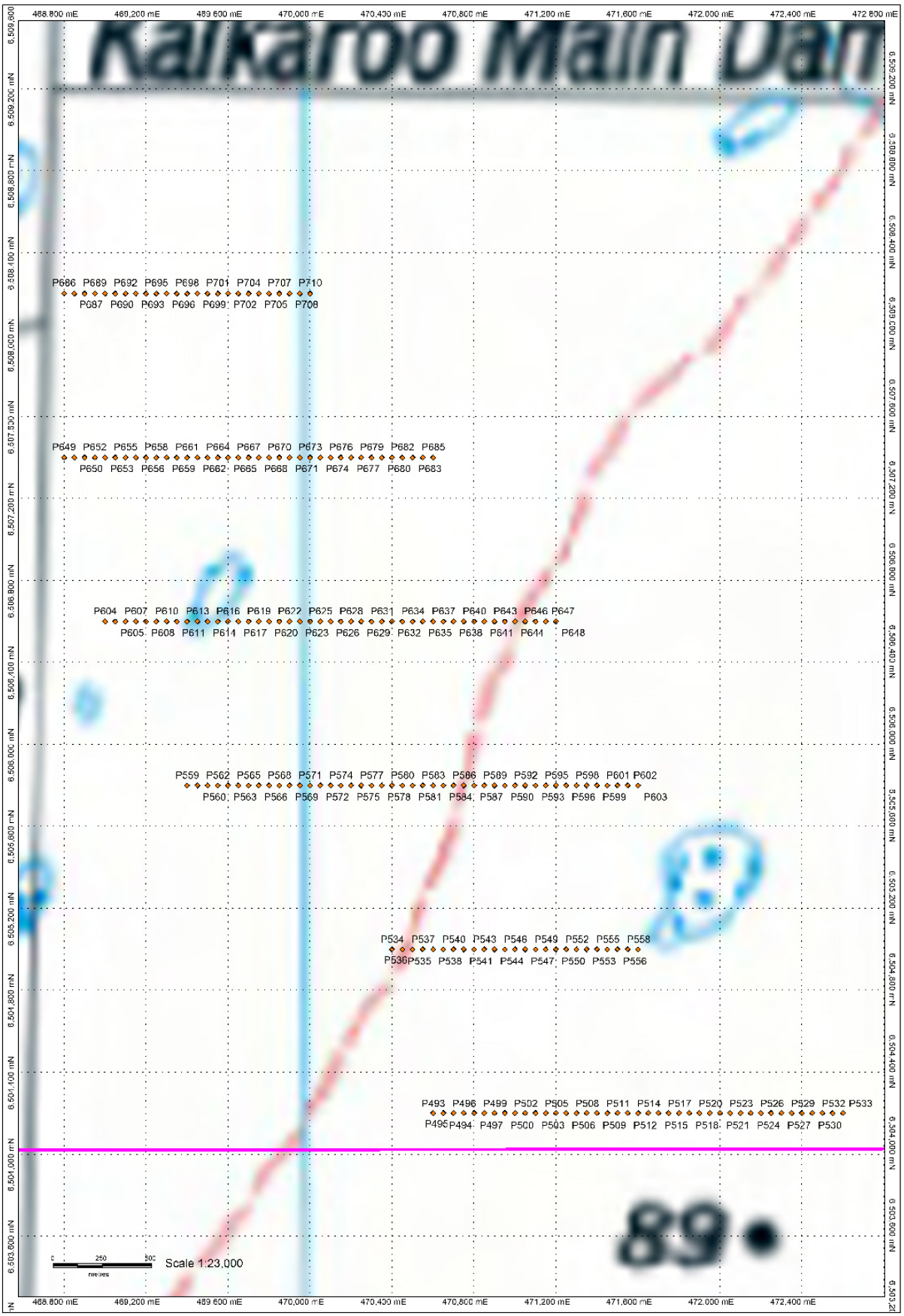
Map 5. *Location of planned drilling at the Oban South Prospect on EL6359*



Map 6. *Location of planned drilling at the Mt John Prospect on EL6660*

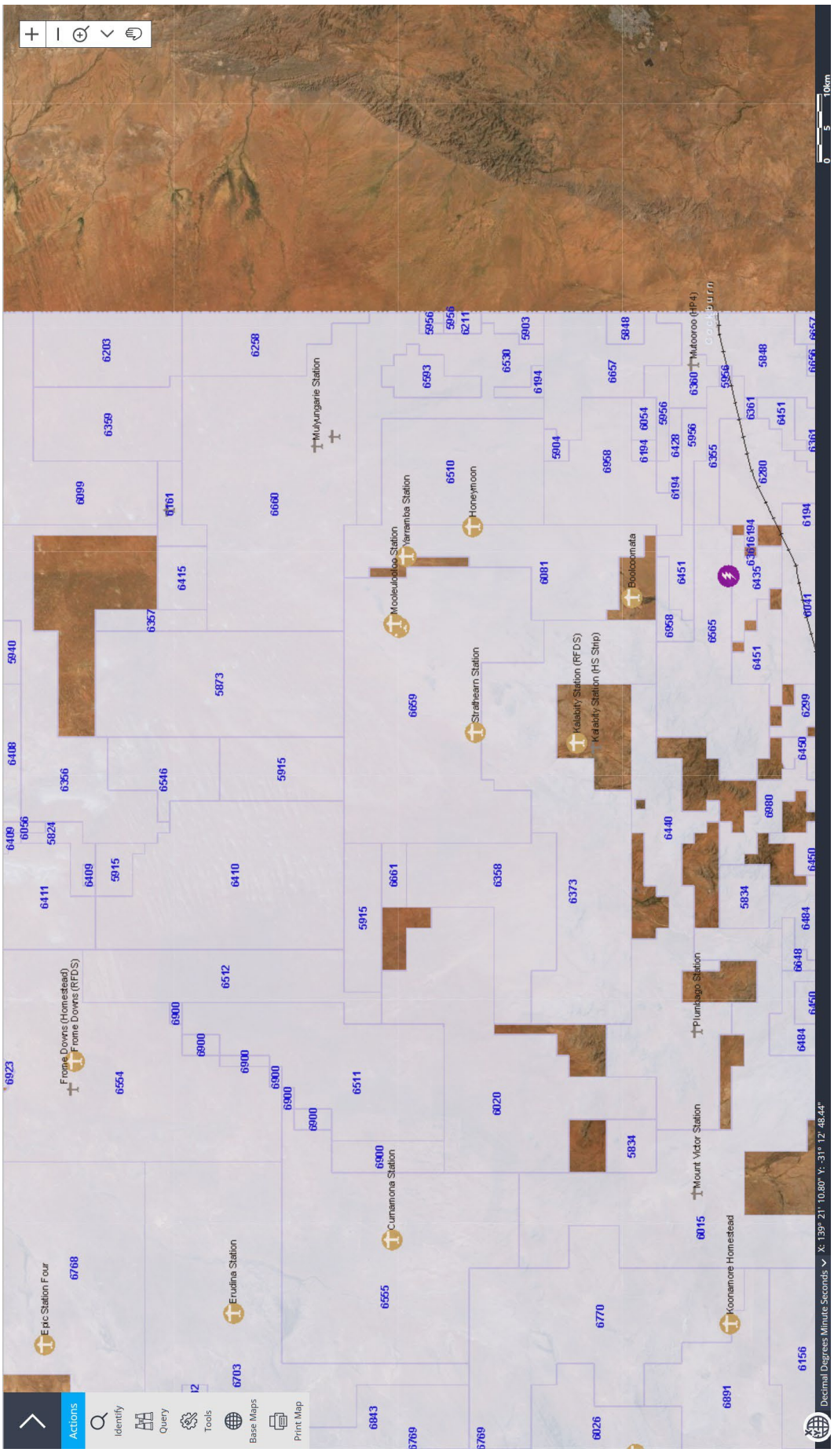


Map 7. *Location of planned drilling at the Mt John East Prospect on EL6660*

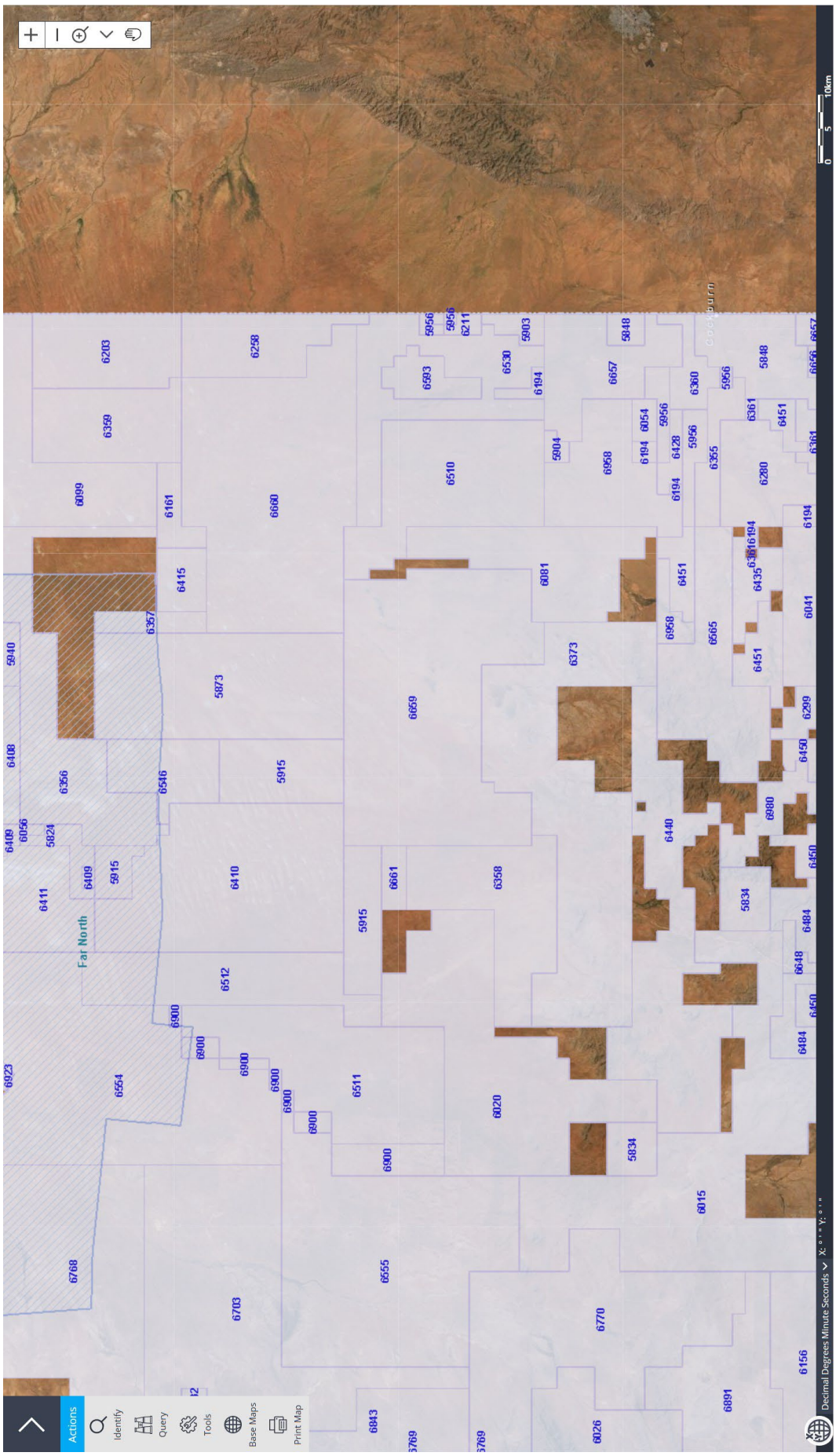


Map 8. *Location of planned drilling at the Mt John East Prospect on EL6660*

Map 9. *Location of Groundwater Dependent Ecosystems within the project area*



Map 10. *Location of existing Infrastructure within the project area*



Map 11. *Location of prescribed wells in the project area*

SECTION K – PUBLIC RELEASE

PEPR documents will be registered on the mining register and publicly released in full without the need to request consent from the tenement holder(s). Ultimately, it is the applicant's responsibility to ensure that confidential, or commercially sensitive, information is not included within the PEPR application.

SECTION L – SUBMISSION OF THE APPLICATION

An application for an Exploration PEPR or PEPR review, must be submitted in the following form, unless otherwise specified by the Director of Mines or an authorised officer:

- an electronic version of the PEPR must be submitted using the exploration PEPR template(s) provided on the DEM Minerals website,
- the electronic version must be submitted online through the DEM Minerals website using the exploration PEPR submission form,
- the electronic version must be submitted in one single Acrobat PDF file, and
- Microsoft Word-compatible files must be submitted if requested by the Director of Mines (or delegate), or other authorised officers.

APPENDIX 1

RADIATION MANAGEMENT PLAN

KOBA
resources limited

YARRAMBA URANIUM PROJECT

EL5873, EL5904, EL5940, EL5951, EL5952, EL5964, EL6099, EL6161, EL6194, EL6203, EL6258, EL6298, EL6356, EL6357, EL6359, EL6370, EL6593, EL6657, EL6660, EL6662, EL6973 & EL6974

RADIATION MANAGEMENT PLAN

March 2024

Version 1.1

Authorised by Ben Vallerine (Managing Director)

Signed: _____ on the 17th May 2024

Submission Date: 25th March 2024

EPA Approval Date: 17th May 2024

CONTENTS

1 INTRODUCTION

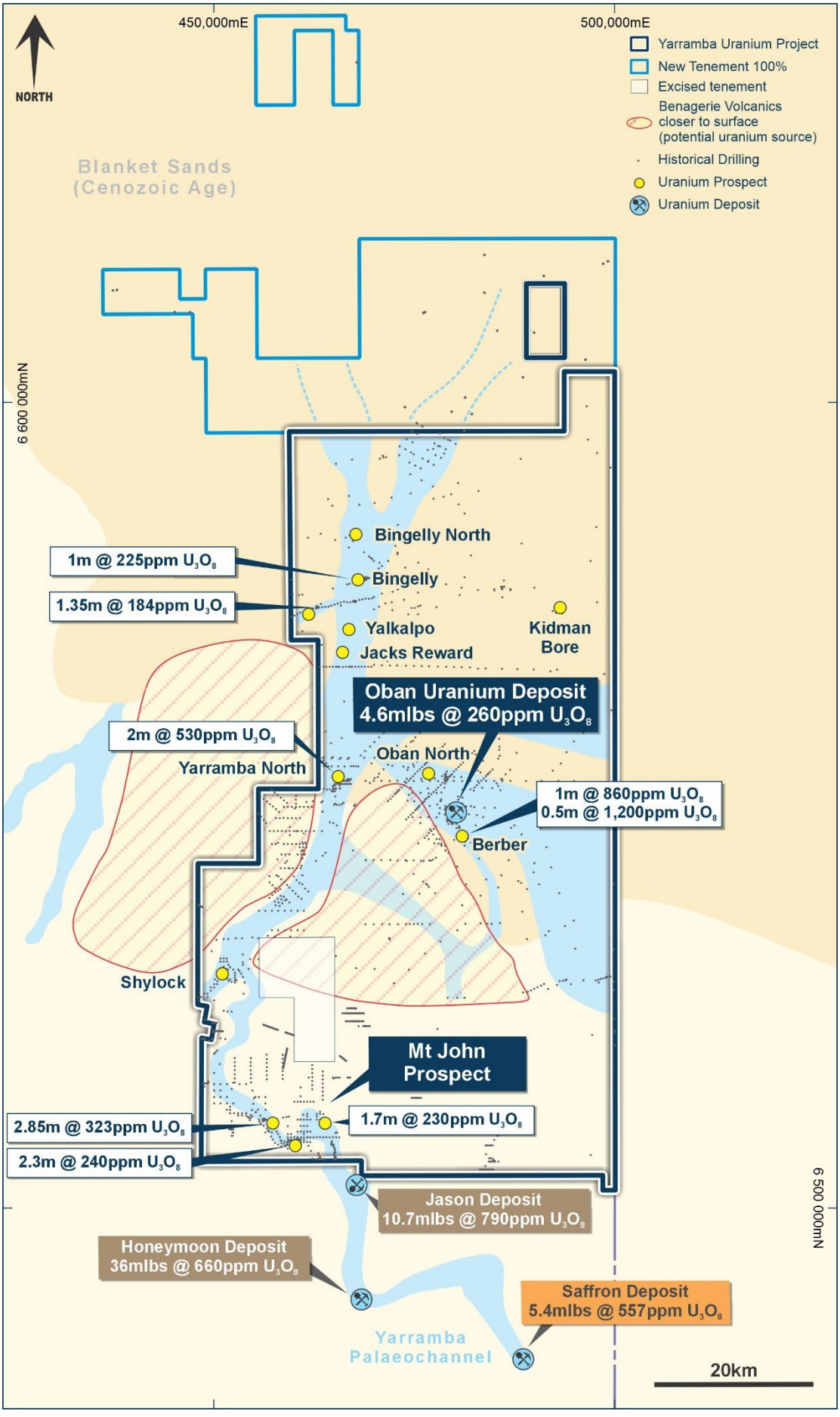
1.1 Project Description

Koba Energy is in the final stages of completing a deal with Havilah Resources Limited to earn interest into the Yarramba Uranium Project approximately 60 km North of Cockburn in South Australia. The project area lies within the southeastern part of the Frome Embayment (Eromanga Basin) consisting of Tertiary sediments of the Yarramba Palaeochannel system and is underlain by cretaceous aged Bulldog Shale and undifferentiated Palaeoproterozoic granites and metamorphic schists which are exposed to the West of the tenement area.

The Yarramba Palaeochannel system which is the target of exploration consists of Tertiary filled sediments incised into the basement rocks as well as into Cretaceous mudstone and shale deposited in the Frome Embayment. The Tertiary sediments consist of fluvial carbonaceous, pyritic sand and finer grained beds, including clay and lignite of the Eyre Formation, as well as slightly carbonaceous silts and clays with minor sand horizons of the Namba Formation.

The main exploration targets in the project are the Oban uranium deposit and the Mt John Prospect. The current Yarramba Uranium Project licence held and/or operated by Koba Ltd or its wholly owned subsidiaries as of March 2024 are shown below:

Tenement Number	Area (km^2)
EL5873	585
EL5904	14
EL5940	619
EL5951	103
EL5952	152
EL5964	77
EL6099	854
EL6161	59
EL6194	58
EL6203	243
EL6258	201
EL6298	194
EL6356	490
EL6357	53
EL6359	249
EL6370	527
EL6593	73
EL6657	291
EL6660	942
EL6662	893
EL6973	990
EL6974	95


NORTH
450,000mE
500,000mE
Yarramba Uranium Project
New Tenement 100%
Excised tenement
Benagerie Volcanics closer to surface (potential uranium source)
Historical Drilling
Uranium Prospect
Uranium Deposit
Blanket Sands (Cenozoic Age)
6 600 000mN
6 500 000mN
Bingelly North
1m @ 225ppm U3O8
Bingelly
1.35m @ 184ppm U3O8
Yalkalpo
Kidman Bore
Jacks Reward
Oban Uranium Deposit 4.6mlbs @ 260ppm U3O8
2m @ 530ppm U3O8
Yarramba North
Oban North
1m @ 860ppm U3O8
0.5m @ 1,200ppm U3O8
Berber
Shylock
Mt John Prospect
1.7m @ 230ppm U3O8
2.85m @ 323ppm U3O8
2.3m @ 240ppm U3O8
Jason Deposit 10.7mlbs @ 790ppm U3O8
Honeymoon Deposit 36mlbs @ 660ppm U3O8
Saffron Deposit 5.4mlbs @ 557ppm U3O8
Yarramba Palaeochannel
20km

1.2 Project Personnel

The workforce for the exploration program on the tenements will comprise approximately eight personnel as shown in the table below. Site radiation safety implementation and supervision will be provided by the Koba Resources Exploration Manager Mark Couzens who is licensed to "Use or handle radioactive material" under the SA Radiation Protection and Control Act (2021) with certificate number 33812. Mark will be the responsible radiation safety officer (RSO) for Koba Resources Limited. The Managing Director, Ben Vallerine will be responsible for approving and facilitating the implementation of this RMP. When the RSO is not on site, field geologist Benjamin Gluszkowski will be trained and mentored to fulfill the requirements of the RMP.

Exploration for buried palaeochannel uranium mineralisation within the Yarramba Uranium Project will be undertaken by drilling methods including Mud Rotary, Aircore and Diamond Drilling. Exploration programs are undertaken on a campaign-by-campaign basis, usually of 4-6 weeks duration, with between one and four programs planned for each year.

The usual working roster for Koba Resources personnel and sub-contracting companies is generally a three week on and one week off roster but can occasionally be shorter or longer depending on the duration of the program. Earthmoving contractors are usually only on site for short periods (3 - 4 days) before, during the program and after the drilling campaign, to undertake clearing of tracks and drill pads and to prepare sumps for the drilling. They also undertake rehabilitation activities after the completion of the drilling program. This roster and the typical workforce during drilling campaigns is expected to have a maximum of eight people will be on site at any one-time during drilling programs and that during other periods including rehabilitation programs the workforce will comprise approximately 2 - 3 people and will be completed according to the Department of Energy and EPA regulations.

Company	Personnel on Site	Number of Personnel	Usual Roster (weeks on/off)
Koba Resources Limited	**Exploration Manager / RSO**	**1**	**3/1**
	Geologist	**1**	**3/1**
	Field Assistant	**1**	**3/1**
Contractors			
Drilling Company	**Driller**	**1**	**3/1**
	Drilling Offsiders	**2**	**3/1**
Geophysical logging Company	**Downhole Logger**	**1**	**3/1**
Earth Moving Company	**Machinery Operator**	**1**	**occasional days as required**
Total		**8**	

1.3 Purpose and Objectives of the Radiation Management Plan

Uranium is widely present in the Earth's crust, averaging about 3 parts per million (ppm) in ordinary soil, and up to about 30 ppm in some granites. Uranium ores range from 0.03% (300 ppm) up to a few percent (> 10,000 ppm).

During uranium exploration activities, including drilling and sampling mineralised intervals, workers are potentially exposed to radiation. Corporate 'duty of care' and risk management requirements indicate the need to *monitor* and *manage* radiation to control and minimise worker's radiation doses to acceptable levels. It is also necessary to minimise spills and releases of materials which could cause contamination of the environment, and to avoid release of contaminated items and equipment off site before they have been cleaned.

The Koba Resources Radiation Management Plan for the Yarramba Uranium Project has been prepared to comply with the requirements of the Environmental Protection Authority (EPA) SA and Department for Energy and Mining (DEM) SA for the management of radiation. Koba will complete a review of the radiation logbook every 6 months to ensure that all requirements of the RMP have been met.

Guidelines provided by the EPA require companies exploring for uranium to manage radiation risks during exploration by:

- Developing and implementing a radiation management plan (RMP)
- Designating a suitably qualified and competent radiation safety officer (RSO)
- Implementing measures to minimise radiation exposure to workers and members of the public
- Providing general training in radiation safety to all employees and contractors
- Monitoring workers radiation exposure

1.4 Legislation

Current SA and Commonwealth legislation and other requirements including Codes, Guides and so on relevant to radiation management include the following;

- Dangerous Goods Act 1998 and Regulations.
- Mineral Titles Act and Regulations.
- Mining Management Act 2008 and Regulations.
- Radioactive Ores and Concentrates (Packaging and Transport) Act 2007 and Regulations Atomic Energy Act 1953.
- Code of Practice for Safe Transport of Radioactive Materials 2008, ARPANSA.
- Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing 2005, ARPANSA.
- Safety Guide for the Safe Transport of Radioactive Material, 2008, ARPANSA.
- Safety Guide for the Management of Naturally Occurring Radioactive Material (NORM), 2008, ARPANSA.
- Radiation protection guidelines on mining in South Australia: Mineral exploration (EPA) (Feb 2010).
- Radiation Protection and Control Act 2021(RPC Act).
- Radiation Protection and Control (Ionising Radiation) Regulations 2022.

2 RADIATION

Radioactive atoms, including atoms of uranium, radium, and thorium, carry excess energy and are unstable. These atoms break down, or decay, to make new 'daughter' atoms and give up some of their excess energy in tiny 'packets' of energy called alpha, beta, and gamma radiation. Uranium is the 'parent' of a series of other radioactive elements shown in the **U-238 Decay Chain** table below. Alpha, beta and gamma radiations have different penetration into solid matter:

- ***Alpha particles*** are electrically charged helium nuclei, ejected at very high speed from the atom at the instant of breakdown. They are slowed down and stopped by about the thickness of a sheet of paper (say 50 microns, 0.05 mm), and by about 3 cm of air. However, they make a dense ionization damage trail along the stopping track.
- ***Beta particles*** are electrons formed by the transformation of a neutron to a proton, emitted by the atom at a very high speed. They can travel a few centimetres in solids and many centimetres or metres in air before stopping, but carry less energy, and give it up in a much more spread out and less dense track (so the damage is very much less).
- ***Gamma rays*** are electromagnetic energy, like x-rays, and are very penetrating, and can pass with only a little reduction in intensity, through several centimetres of solids

U-238 Decay Chain

Nuclide	Radiation	Half-life
Uranium 238	α	4.5 billion years
Thorium 234	β, γ.	24 days
Protactinium 234	β	1.2 minutes
Uranium 234	α	250,000 years
Thorium 230	α	80,000 years
Radium 226	α, γ	1,600 years
Radon 222 (gas)	α	3.8 days
Polonium 218	α	3 minutes
Lead 214	β, γ	27 minutes
Bismuth 214	β, γ	20 minutes
Polonium 214	α	160 microsecs
Lead 210	β, γ	22 years
Bismuth 210	β	5 days
Polonium 210	α	140 days
Lead 206	---	Stable

α = alpha particle, doubly charged helium nucleus, 2 protons + 2 neutrons.
β = beta particle, high speed electron emitted from nucleus.
γ = gamma ray, electromagnetic radiation.

2.1 Radiation Dose

When radiation is absorbed by matter it causes damage to the chemical molecules making up the material, and the amount of damage is proportional to the energy delivered per unit mass. Because radiation can ionize atoms, it can damage chemical structures in living cells, such as DNA, the

information-carrying molecules that control what the cell does. The biological damage to living tissue by radiation energy is described as the "dose".

2.2 Dose Units

Radiation dose to humans is measured in units called **sieverts (Sv).** One (1) sievert is a large dose, and therefore in normal situations, doses are discussed in units of **millisieverts (mSv),** which equal one-thousandth of a sievert, and **microsieverts (μSv),** which equal one millionth of a sievert.

2.3 Radiation Dose Limits

Radiation dose limits are based on the observed health effects in people exposed to radiation in the past (e.g.) Japanese atom bomb survivors, overexposed medical patients and radiologists. A dose of 1 sievert is assumed to produce a risk of radiation-caused cancer of 5% in the exposed person's lifetime.

The International Commission on Radiological Protection (ICRP) recommends 1 Sievert of dose as the lifetime limit for radiation workers and, *assuming fulltime work for 50 years in a "radiation job"*, has set one-fiftieth of a Sievert as the yearly dose maximum. This is equal to 20 millisieverts per year for radiation workers.

Typical Doses for Radiation Workers

- Most full-time radiation workers receive an annual dose generally between 1 and 3 millisieverts, up to a maximum of about 5 to 6 millisieverts. Typical professions are uranium miners, mineral sand mine separation plant operators, industrial pipeline radiographers, medical radiologists, nurses and radiotherapy technicians.
- Fulltime work on a drill rig on a uranium prospect could result in a dose of approximately 0.2 to 0.6 mSv in a year, depending mainly on dust control and ore grade.

Typical Doses for Members of the Public

- The average dose from natural background radiation received by the general public is about 2 or 3 mSv per year.
- Medical radiation procedures generally give the patient somewhat more radiation. For example, a 'CAT' scan covering the chest and abdomen gives about 10 to 20 mSv; a heart stress test scan using radiopharmaceuticals gives about 12 mSv and other nuclear medicine scans generally give 5 or 6 mSv.
- The Annual Limit for members of the public is set at 1 mSv per year over and above natural background. This considers the need for lower dose limits for children and pregnant women and the fact that non-workers may have ongoing health problems.

2.4 Radiation Dose Delivery Pathways

There are four possible pathways for delivery of radiation doses to the human body that should be considered in mining industry situations, and that may require active control, depending on the circumstances. These are:

- **Irradiation** (gamma radiation from mineralised drill cuttings, core, sludges or radiation sources), and

- **Inhalation** (radon and radon daughters, and of airborne dust containing long-lived alpha-emitting uranium, thorium, and radium);
- **Ingestion** (radioactive dust contamination on hands transferred to mouth whilst eating or smoking);
- **Absorption** (through broken skin - cuts and abrasions).

The following dose limits are applicable:

- 1 mSv per year for a member of the public
- 20 mSv per year, averaged over a period of 5 consecutive calendar years, for a worker. The dose for a worker may not exceed 50 mSv in any one year
- Doses shall also be ALARA (As Low As Reasonably Achievable) with social and economic considerations taken into account.

3 RADIATION DOSE CONTROL MEASURES

The general guiding principle in all radiation protection is to try to keep doses "As Low As Reasonably Achievable" (ALARA), with social and economic factors considered.

3.1 Protection From Irradiation

Radioactive drill cuttings can result in direct exposure to gamma rays for personnel involved in drilling work, including drill crew, geologist and field technicians. For palaeochannel uranium mineralisation, this exposure is expected to be negligible due to the generally low-grade nature of these deposits, however personnel should be aware of the three (3) protection mechanisms:

- Time – minimise exposure time
- Distance – maintain distance from any radiation sources
- Shielding – use shielding (including steel, lead, rock, soil) as a shield between you and the radiation source

Gamma radiation during exploration work, including drilling, is not expected to require any active control measures. However, monitoring by scintillometer or geiger survey meter (refer section 5.1) and personal dose measurement using TLD badges will be conducted (refer section 5.2).

3.2 Protection Against Inhalation of Airborne Contamination

Airborne, long-lived alpha emitters in dust (airborne dust dose) is a major potential dose delivery pathway for personnel involved in some drilling methods. Controlling the spread of the radioactive dust is the key step for protecting against inhalation. Rotary mud drilling one of the main methods proposed for use on this project, is a wet drilling method that will have very little dust associated with it. When using methods such as aircore that uses compressed air, strategies will be put in place to minimise exposure to any dust by workers. Generation of dust is still possible when drill samples or drill muds dry out at the surface so strategies will be implemented to minimise exposure.

Therefore, safety procedures dictate that in the event of dust generation, strategies to manage dust exposure will include appropriate PPE must be worn, working away from wind generated dust, drilling with water where possible and laying out cuttings samples on large plastic sheeting.

3.3 Protection Against Ingestion of Surface Contamination

Inadvertant ingestion of radioactive material is the other major delivery pathway for radioactive materials. Activities like eating, drinking and smoking with contaminated hands can transfer materials into the body. It will be prevented by maintaining proper levels of workplace and personal cleanliness, and by requiring washing of hands before meal and smoke breaks. Fresh water and soap will be supplied to the field crew and positioned directly adjacent to the rig to ensure that hands are washed as necessary. In addition, gloves will be included in the required PPE for this project.

Radioactive materials can also contaminate work clothing which can result in contamination of surfaces in vehicles and accommodation areas, increasing the risk of ingestion

4 WORK PROCEDURES

4.1 Occupational Hygiene and Dose Control

- When handling soils, drill core or cuttings, workers should be aware that these samples could contain radioactive material. It is important to reduce the amount of dust generated and to minimise inhalation of that dust. If the work activities are unavoidably dusty, then you must wear a respirator or dust mask.
- Stay out of any plume of dust, mist or spray.
- Use dust masks or respirators if necessary - simple P1 standard half face disposables are satisfactory.
- Prior to eating, drinking or smoking it is important to wash your hands and face to remove dust and thus prevent or minimise ingestion of that dust.
- You should shower and change clothes at the end of shift.
- Be aware gamma dose can arise if you are working on a substantial outcrop of mineralisation.
- Radon progeny (radon daughters) in air will not require any active control but should, at some stage, be monitored and reported to provide baseline data. Where uranium minerals are stored in sealed containers or poorly ventilated locations, natural ventilation shall be utilized for 15 minutes prior to worker access (e.g. opening drums or containers containing uranium mineralized ore 15 minutes prior to undertaking any work with samples or within containers).

4.2 Environmental Contamination Control

The main requirement to minimize impact on the environment is to limit dispersion of radioactive materials. Thus we will seek to *contain* mineralized drill cuttings to the extent reasonably practical. In Aircore, Mud Rotary and Diamond drilling, the cuttings and sledges will be trapped in the drill site sump, and after drying out should be buried to a under at least one metre of topsoil to prevent dispersion, e.g., by erosion or by digging animals; the SA EPA recommends 1 metre as adequate for this.

- Mineralization excess to sampling needs, spillage, excess sludge from core cutting and wastes from sample preparation activities, will be disposed of by burial in one or more of the drilling sumps within the mineralized areas. These pits will be located by GPS and recorded.

4.3 Site Departure Clearance Checks

- Nothing should go off site if it is contaminated with radioactive dust or mud. This includes personal tools, heavy equipment, vehicles, drill rigs, or personnel and clothing.
- Radioactive contamination can be easily removed like any other dirt simply by washing.
- After washing, items can be checked with an alpha probe for any residual contamination. Repeated washing and checking should continue until a specified level of cleanliness is achieved and clearance for leaving the site is given by the RSO.

4.4 Transport Requirements

Occasionally sample material may be transported to an off-site laboratory, and after assay, wastes will be transported back to site via road for permanent storage. Any samples which are considered likely to contain uranium ore and of grade potentially greater than 800 ppm U (this being equivalent to the 10 Bq/g exemption level), must be transported in accordance with the ARPANSA Code of Practice for Safe Transport of Radioactive Materials 2001, itself based on IAEA Transport Regulations, and referenced in the Australian Dangerous Goods Transport Code and the state radiation control legislation. The Code sets out rules for (i) labelling of packages, containing radioactive materials; (ii) placarding of vehicles which transport them, and (iii) issue to driver of Consignor's Certificate describing the material being transported.

However, packages giving less than 5 μSv/hr on the external surface may be transported as an 'Excepted Package, UN2910'; this allows them to be sent without package labelling or vehicle placarding as "Radioactive", but does require labelling on the package and on the Con Note as "UN2910", and a warning notice visible when the package is opened, stating that it may contain radioactive material.

Packages will be cleared for removal from site, the same as equipment. Visual checks for dust or mud on the outside of the package will be done and cleaned if necessary. Where the alpha scintillometer is available, this will be used in addition to visual checks for surface contamination. Checking of the external surface readings prior to dispatch will be done by the Site Geologist and will be recorded in the Site Radiation Logbook along with date of dispatch.

5 RADIATION MONITORING PROGRAM

Radiation monitoring will be carried out for several overlapping reasons: so as to provide data for radiation control; for personal dose estimation; to provide feedback to workers and management; and to report to the regulatory agencies. This data will also be relevant to any future Feasibility Study and Environmental Impact Statement.

The radiation monitoring program will specifically address:

- Gamma radiation
- Long-lived alpha emitting radionuclides in airborne dust
- Radon daughter exposure, and
- Surface contamination

All results will be made available to the workforce as they become available, and will be collated into a formal report for the management and the regulatory agencies, at the end of the exploration campaign, or on a six monthly basis for ongoing work.

The table below shows how the radiation monitoring program will be implemented.

Survey	What	Frequency
Gamma survey (Exploranium GR 135 or GeoSensor or RadEye or Geiger Mueller Probe)	Drill holes and sump	Before and after drilling, for environmental baseline studies and rehabilitation purposes
	Sea Containers / sample storage areas Work areas (eg, logging/cutting tables)	Weekly when in use
Alpha contamination (visual check plus alpha scintillometer, where available)	Vehicles Work surfaces Crib room tables Offices Workers' hands and clothes	Weekly
	Any vehicles, equipment or packages of samples leaving site	Whenever such items are to permanently leave site

5.1 Gamma radiation monitoring

Gamma radiation will *only* be enhanced above local background where ore outcrops, where high grade core is present in work areas, or where bulk quantities of material originating from the ore zone(s) are collected and stored. In these areas, a gamma survey will be performed weekly when the core storage area is in use. Dose rates will generally be very low, because of the small quantities of material to which workers will be exposed. However, workers handling sample bags and core trays of medium to high grade ore (eg 0.5% U_3O_8) will receive measurable doses (possibly in the range 100 to 400 microsieverts per quarter).

Initial gamma surveys will be carried out at drill hole collar locations before drilling as well as the sump before drilling to provide baseline data for reference after rehabilitation has been completed.

Surface contamination monitoring will be performed by visual checks weekly. This monitoring will check work surfaces, tables and desks, ablutions area, and opportunistically, workers' hands, clothes, etc. Visual checks will also be used to ensure cleanliness of equipment which is to be released from site. Where the alpha scintillometer is available, this will be used in addition to visual checks for surface contamination. Results will be recorded in the Site Radiation Logbook.

5.2 Personal Dosemeter

- Personal thermoluminescent dosimeter badges (TLDs) will be issued to all field personnel, in particular drillers and their offsiders and others handling samples with uranium mineralisation (geologists, field assistants, down-hole logger and earthmoving operator)

- The badges are obtained as a commercial service from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Laboratory in Melbourne, a section of the Commonwealth Department of Health.
- Badges will be sent for analysis after 12 weeks and a replacement will be issued. Workers are responsible for their badges and will be charged a replacement fee if the badge is lost.
- The results from the badge analysis will be available to workers as an annual dose letter, or as an individual report upon request.
- Dose rates are expected to be very low, and essentially background, except immediately next to sample piles containing uranium mineralisation.
- Results from spot gamma surveys will be recorded and communicated verbally to the workers and to management and the relevant regulatory agencies as necessary.

Drilling crews, field assistants and geologists working in close proximity to uranium mineralised materials would generally get TLD badge results in the order of some tens up to 100 or more microsieverts in the three-month monitoring period. These results are well within the 20,000 microsieverts annual limit for workers.

Monitoring will be carried out to check vehicle and skin/clothing contamination levels.

5.3 Radionuclides in airborne dust monitoring

The inhalation of long-lived radioactive dust generated during drilling campaigns (particularly percussion and RC drilling) of uranium mineralised materials is the primary radiation exposure pathway for workers in uranium exploration.

Koba Resources will use “wet” drilling methods such as mud rotary drilling where possible to minimise radioactive dust exposure.

Radionuclides in airborne dust will be monitored in a short campaigns focused on dusty jobs where there is likelihood for uranium mineralisation, using a personal air sampler for shift-average assessments.

- The intent is to take an adequate but limited number of shift samples so as to obtain a statistically sound average.
- The filter from the personal air sampler will be counted in an alpha drawer assembly to determine the shift-average airborne alpha-emitting radionuclides concentration.
- Dose estimates will be calculated based on personal dust monitoring results and area dust monitoring results using the following formula:

Dust Dose = average ∝dps/m^3 x DCF(μSv/∝dps) x exposure period in hours x 1.2 m^3/hr

where ∝dps = ∝ disintergrations per second; DCF = Dose Conversion Factor = 3.5 μSv/∝dps for 5μm AMAD dust particle size (from IAEA data) and 1.2m^3/hr = assumed standard breathing rate

- The workplace airborne radionuclide data will assist decisions about the need or otherwise to use respiratory protection during work activities.

5.4 Radon daughter (radon progeny) monitoring

Radon-222 gas is released during the uranium decay process. Radon-222 itself is short lived and relatively insignificant for dose estimation but decays to produce "radon progeny" or "radon daughters" which are ∝ emitters that can attach to lung tissue and cause significant local irradiation.

- Radon progeny exposure in well-ventilated outdoor environments is generally not significant but build up can occur in poorly ventilated areas such as core sheds if not properly constructed or in costeans during early morning calm periods.
- If deemed necessary Koba may decide to do radon daughter (radon progeny) monitoring in areas of potential radon concentration to obtain indicative figures for local background and its variability. The sample results will potentially only be providing environmental baseline data and will be interpreted as such.
- Radon daughter monitoring is performed by taking "grab" samples of air through a filter paper and then immediately assessing the radon daughter activity collected on it by carrying out a short period gross alpha count.

5.5 Radiation Dose Assessment

At completion of the program, an assessment of workers' doses will be carried out.

This will add TLD badge results from ARPANSA, and airborne dust sampling results, averaged by work category and adjusted for the individual worker's total number of shifts on site, according to the formula:

Dose = average ∝dps/m^3 x DCF(μSv/∝dps) x exposure period in hours x 1.2 m^3/hr + TLD (μSv)

where ∝dps = ∝ disintergrations per second; DCF = Dose Conversion Factor = 3.5 μSv/∝dps for 5μm AMAD dust particle size (from IAEA data) and 1.2m^3/hr = assumed standard breathing rate

It is expected that doses will be very small, and well below annual limits both for workers (20,000 microsieverts) and for 'members of the public' (1,000 microsieverts), because of the relatively short campaign duration, the intermittent contact with mineralization and the planned use of "wet" drilling methods such as mud-rotary drilling to minimise any airborne dust.

6 PLANT AND EQUIPMENT DECONTAMINATION AND CLEARANCE

All vehicles, plant and equipment used at/for the following will be considered potentially contaminated:

- Drill sites/pads
- Personnel and sample transport vehicles including helicopters (to and from active work areas)
- Sample storage areas
- Vehicle wash down areas
- Shower and other personnel washing facilities and clothes washing facilities
- Any other activity involving the handling or treatment of radioactive material

Radioactive contamination will not generally be fixed contamination – it will just be dirt and mud and, as such, can be washed off

All potentially contaminated plant and equipment MUST be washed down at a designated wash down area and certified clean and uncontaminated PRIOR to leaving the project area.

Once visually clean, plant and equipment will be checked using alpha and gamma probes in accordance with instrumentation procedures.

Decontamination washing and monitoring will continue until the plant and equipment meets the following contamination clearance criteria:

- If using an alpha detector, clearance should be rejected if the reading exceeds 20 cpm
- If using a gamma detector, clearance should be rejected if the reading exceeds background by greater than 50%.

Plant and equipment leaving the project area MUST be accompanied by a radiation clearance certificate (form) signed by an appropriately trained person. These clearances are essential both for minimisation of spread of contamination and to provide defensive evidence in case of assertions of releases. All clearances are to be recorded.

7 TRAINING, RECORDING AND REPORTING

7.1 Worker Inductions and Training

- At least one person on site during active exploration activities should be a trained radiation safety officer. The RSO, Mark Couzens will be on site for the first month of the initial drill program to train field personnel and ensure that all obligations of the RMP are being met. When not on site the RSO will mentor all assigned field personnel to complete all tasks required in the RMP. Geologist Benjamin Gluszkowski will be trained by the RSO to complete field requirements of the RMP.
- All employees and contractors are to receive general training in radiation safety and be aware of the risks of working with radioactive materials and steps which can be taken to minimise their exposure.
- Training will be initiated with a Radiation Safety Induction briefing shortly after arrival on site and will be issued with a Radiation Safety Manual.
- Records of inductions will be maintained together with a signed receipt for the Radiation Safety Manual.
- Additional radiation safety briefings will be given as the occasion arises, e.g., at Toolbox Meetings, to reinforce personal monitoring, dust control, spillage control, or site clearance control measures. All briefings and/or additional training will be recorded.
- Worker training will emphasise the importance of personal hygiene to minimise the risk of health issues
- The Radiation Safety Officer(s) will maintain the currency of their qualifications and knowledge.

7.2 Recordkeeping

Records are to be kept of the following information or events:

- The identity and qualification dates of Radiation Safety Officer and Assistant Radiation Safety Officers employed by the Company.
- Results of Koba Resources employees personal dosimeter (special (TLD) badge). These dose results are recorded (ARPANSA -national registrar) and reported to the relevant workers on a regular –quarterly basis.
- Calibration of radiation monitoring equipment.

A "register" is to be maintained in accordance with the S.A. Regulations for Radiation Protection and Control for each of the following;

- Radiation worker dose records;
- Radiation Area Monitoring;
- Incident, Accidents and Emergencies;
- Apparatus, Sealed Sources, Unsealed Sources and Equipment;

These registers are maintained by the RSO and designated assistants trained by the RSO.

The personnel assigned by Koba to be responsible for the record keeping are as follows:

RSO – Mark Couzens (Exploration Manager). Licensed to "Use or handle radioactive material" under the SA Radiation Protection and Control Act (2021) with certificate number 33812.

Geologist – Benjamin Gluszkowski – Will be trained and mentored by the RSO to complete RMP field requirements.

8 GLOSSARY OF TERMS

Activity:	The activity of a radionuclide is the number of disintegrations per second, or becquerels.
ALARA:	*As low as reasonably achievable, economic and social factors being taken into account.*
Alpha radiation:	A charged particle emitted from a disintegrating radionuclide and consists of two protons and two neutrons, i.e., a helium nucleus.
Appropriate authority:	Means the statutory authority that is responsible for enforcing the provisions of the relevant Act and Regulations.
Becquerel (Bq):	The unit of measurement of radioactive decay defined as one radioactive disintegration per second.
Beta radiation:	A charged particle emitted from a disintegrating radionuclide and consists of an electron or a positron.
Gamma radiation:	A form of electromagnetic radiation similar to light or X-rays, but originating as an emission from the nucleus of an atom
Gray (Gy):	The unit of absorbed dose. It is the quantity of energy from ionizing radiation that is imparted to a unit mass of matter such as tissue. One gray corresponds to one joule per kilogram.
Half-life:	The time taken for the activity of a radioisotope to reduce by one half of its current activity.
Ionizing radiation:	Radiation which interacts with matter to remove electrons from (i.e., to ionize) the atoms of the material absorbing it, producing electrically charged atoms called ions
Member of the public (for radiation purposes:)	A person who is exposed only incidentally to radiation as a consequence of the use of radioactive material
Radioactive:	Spontaneously emitting radiation by nuclear transformation.
Radiation:	Energy flux associated with electromagnetic (X-ray, gamma rays) or particles (alpha, beta and neutron) emissions
Radionuclide	A nuclide of an atom that is radioactive.
Radioisotope:	An isotope of an element which is radioactive
Radon	The radioactive decay product of radium. It occurs as an inert gas. The radioisotope of radon in the 238U decay series is 222Rn which has a half-life of 3.8 days. The radioisotope of radon in the 232Th decay series is 220Rn which has a half-life of 55.6 seconds.
Secular equilibrium	When all the decay products in a radioactive decay series have the same activity
Sievert (Sv)	The unit of measurement of radiation dose equivalent. One sievert is equal to the product of the absorbed dose by the quality factor and any modifying factor(s). It allows a comparison of the biological damage caused by different forms of radiation.
Specific activity	The activity of a unit mass of a radioactive substance, measured in Bq g^{-1}.
232Th	The most abundant naturally occurring isotope of thorium
238U	The most abundant naturally occurring isotope of uranium

APPENDIX 1 – RADIATION MONITORING PROCEDURE AND RECORDING

Radiation Logbook

A Radiation Logbook is to be established for the Project. The logbook is to be maintained both in a bound book and in computer files. All radiation-related survey data, measurements, records of personal radiation badge issues, use of radiation badges for environmental monitoring, equipment clearances, air sampling results, photocopies of calibration certificates, and similar, are to be recorded in the logbook.

Records of work group briefings, and work procedure instructions, are to be recorded.

Records are to be kept of radiation readings taken on packaged samples prior to their dispatch to Sample Prep or Analytical Laboratories.

This Radiation Logbook may be required to be made available for inspections by government inspectors. Radiation monitoring results and worker exposure records will be kept and are available for inspection by the EPA.

It is important for the company and for the site responsible officer (normally the project site geologist) that this logbook is maintained as instructed.

Gamma Surveys

Gamma surveys will be undertaken using either the Exploranium GR135, GeoSensor, Geiger Mueller Probe or the RadEye Spectrometers, with the particular instrument used recorded on the monitoring record sheet.

Always check natural background first, away from known sources or outcroppings of mineralisation. For natural background (anywhere in Australia) you should get a reading in the range from less than 0.1 μSv/hr (microsieverts per hour) over leached-out sand dunes, to more than 0.25 μSv/hr in granite country.

Use S (slow) setting for best readings. Allow enough time to mentally estimate the average rate from the meter fluctuations (minimum 1 minute). General work area and environmental readings are to be taken at waist height (1 metre above ground) and not closer than 1 metre to any visible hot spots. This is because these measurements are intended to give indications of "what will be the dose to a worker who will be working here?" NOT "what is the highest reading I can find on the surface of a bit of rock".

Over an extended flat area of outcropping uniformly disseminated mineralisation, there is a 'rule of thumb' you can use to give a rough guide of uranium ore grade: 1% $U_3O_8 \rightarrow$ 30 to 40 μSv/hr.

The following forms outline the details to be recorded for gamma surveys required as part of the Radiation Logbook for the Yarramba Uranium Project.

- Baseline Radiation Monitoring
- Work Area Gamma Contamination Record
- Rehabilitation Record

Baseline Radiation Monitoring

Project: YARRAMBA URANIUM PROJECT

Prospect:

Date:

Survey Instrument:

Datum:

Radiation Instrument:

Operators:

Comments:

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Peg No./ Hole No.	East_GDA94	North_GDA94	Background Radiation Before		Background Radiation After	
			gamma cps	dose nSv/hr	gamma cps	dose nSv/hr

Yarramba Uranium Project

Program Start Date: _____

Work Area Gamma Contamination Record

Program End Date: _____

Date	Location	Doserate (uSv/hr)	Background (uSv/hr)	Recorded By	Equipment Used

KOBA RESOURCES LIMITED

Rehabilitation Record

Project: YARRAMBA URANIUM PROJECT

Prospect:

Date:

Survey Instrument:

Datum:

Radiation Instrument:

Operators:

Earth Moving Company:

Operator:

Equipment:

Comments:

COLLAR **PHOTO**

Hole ID	East GDA94	North GDA94	Cased (Y/N)	Plugged (Y/N)	Radiation After		East GDA94	North GDA94	photo before	photo after	Photo Comments, Direction
					gamma cps	dose uSv/hr					

Surface (Alpha) Contamination checks

Routine visual surface contamination checks are to be carried out weekly. Where the large surface area alpha scintillometer is available, this will be used in addition to visual checks. It is recommended that surfaces be cleaned if the alpha scintillometer gives a reading above 20cpm.

Check for excess dust or mud on office desks, workbenches, crib room tables and floors. For field activities, check ute tray backs, foot wells, under mudguards and wheel arches, areas on chassis, etc; also check contamination on the drill rigs and ancillary equipment. Check workers' clothes, boots, and hands as opportunity arises! There is a form for Surface (Alpha) Contamination Checks. This data will become part of the Site Radiation Logbook.

Any equipment which is to permanently leave the site must be washed and cleaned, and then formally checked and either granted a "Clearance Certificate", or else rejected with the requirement that further cleaning must be done. Legally, equipment may not be released from site if it returns a reading at any point above 0.4Bq/cm^2, which on an alpha scintillometer, corresponds to approximately 100cpm. This author further recommends that equipment be cleaned if surveys return any reading above 20cpm.

This Procedure is required so as to prevent the release of contamination in the form of uranium bearing mud and dust from site (which would be a failure in the company's obligations to protect the environment and could cause serious criticism).

The Clearance Procedure is to be as follows:

- Visual check of equipment to see if it has been thoroughly cleaned. If not, reject and require it to be (re)cleaned.

- Record the Clearance in Radiation Logbook, and write a Clearance Certificate (see proposed format below) to be given to the driver, to deliver to his Manager. Keep a copy of the Certificate for Company Records.

Note - Ensure you check under vehicles thoroughly: wheel arches, springs, chassis members, mufflers etc. Ensure that tracked equipment has had all dirt and rocks removed from the tracks and track guide wheels, track platform chassis etc. This may require scraping out with a screwdriver or some other method.

Instruct drivers to hand the Clearance Certificate to their manager for filing. Inform them that the Certificate may be needed in future to prove the equipment was in fact clean when it left Company Exploration Site / Property.

Yarramba Uranium Project

Program Start Date: _____

Program End Date: _____

Radiation Monitoring - Vehicle Clearances

Vehicle **Registration** **Company**

Vehicle Operator **Monitoring Equipment** Ludlum Model 2241-3 Survey Meter
Large area Alpha Probe

Point	Description	Max_Pre Program		Recorded By	Max_Post Program		Recorded By	Difference (cpm)
		Date	Alpha (cpm)		Date	Alpha (cpm)		
A	Licence plate							
B	Front Left Wheel Arch							
	Back Left Wheel Arch							
	Front Right Wheel Arch							
	Back Right Wheel Arch							
C	Compressor							
D	Muffler							
E	Cylcone							
F	Controls							
G	Rod Bucket							
H	Tray Bed							
I	Fuel Tank							
J	Mast Foot							
	Hoses							
	Drill Rods							
	Drivers Footwell							
	Drivers Seatback							
	Passenger Footwell							
	Passenger Seatback							
	Steering Wheel							
	Background Count							

Yarramba Uranium Project

Program Start Date: _____

Program End Date: _____

Radiation Monitoring - Vehicle Clearances

Vehicle **Registration** **Company**

Vehicle Operator **Monitoring Equipment** Ludlum Model 2241-3 Survey Meter
Large area Alpha Probe

Point	Description	Max_Pre Program		Recorded By	Max_Post Program		Recorded By	Difference (cpm)
		Date	Alpha (cpm)		Date	Alpha (cpm)		
A	Licence Plate							
B	Front Left Wheel Arch							
	Back Left Wheel Arch							
	Front Right Wheel Arch							
	Back Right Wheel Arch							
C	Mudguard							
D	Tailgate							
E	Tray Bed							
F	Wheel							
G	Chassis							
	Drivers Footwell							
	Drivers Seatback							
	Passenger Footwell							
	Passenger Seatback							
	Steering Wheel							
	Background Count							

KOBA RESOURCES LIMITED **Rehabilitation Record**

SUMP

Hole ID	Centre Co-ordinates		Dimensions (LxWxD)	No. of Samples in Sump (Y/N)	depth of cover	Radiation Before		Radiation After		Comments / Remarks
	East GDA94	North GDA94				gamma cps	dose uSv/hr	gamma cps	dose uSv/hr	

Yarramba Uranium Project

Program Start Date: _____

Surface Alpha Contamination Record

Program End Date: _____

Date	Location	Visual Cleanliness	Background (cpm)	Counts (cpm)	Recorded By	Equipment Used

Yarramba Uranium Project

Program Start Date: _____

Program End Date: _____

Radiation Monitoring - Vehicle Clearances

Vehicle **Registration** **Company**

Vehicle Operator **Monitoring Equipment** Ludlum Model 2241-3 Survey Meter
Large area Alpha Probe

Point	Description	Max_Pre Program		Recorded By	Max_Post Program		Recorded By	Difference (cpm)
		Date	Alpha (cpm)		Date	Alpha (cpm)		
A	Front Left Wheel Arch							
	Back Left Wheel Arch							
	Front Right Wheel Arch							
	Back Right Wheel Arch							
B	Muffler							
C	Mudflap							
D	Vertical section							
E	Chassis							
F	Fuel Tank							
G	Wheel Arch							
H	Licence Plate							
	Drivers Footwell							
	Drivers Seatback							
	Passenger Footwell							
	Passenger Seatback							
	Steering Wheel							
	Background Count							

Yarramba Uranium Project

Program Start Date: _____

Program End Date: _____

Radiation Monitoring - Vehicle Clearances

Vehicle **Registration** **Company**

Vehicle Operator **Monitoring Equipment** Ludlum Model 2241-3 Survey Meter
Large area Alpha Probe

Point	Description	Max_Pre Program		Recorded By	Max_Post Program		Recorded By	Difference (cpm)
		Date	Alpha (cpm)		Date	Alpha (cpm)		
A	Licence Plate							
B	Front Left Wheel Arch							
	Back Left Wheel Arch							
	Front Right Wheel Arch							
	Back Right Wheel Arch							
C	Mudguard							
D	Tailgate							
E	Tray Bed							
F	Wheel							
G	Chassis							
	Drivers Footwell							
	Drivers Seatback							
	Passenger Footwell							
	Passenger Seatback							
	Steering Wheel							
	Background Count							

Junction Dam Project

Program Start Date: _____

Program End Date: _____

Radiation Monitoring - Vehicle Clearances

Vehicle **Registration** **Company**

Vehicle Operator **Monitoring Equipment** Ludlum Model 2241-3 Survey Meter
Large area Alpha Probe

Insert Photo of Backhoe, Front End Loader, etc	Insert Photo of Backhoe, Front End Loader, etc

Point	Description	Max_Pre Program		Recorded By	Max_Post Program		Recorded By	Difference (cpm)
		Date	Alpha (cpm)		Date	Alpha (cpm)		
	Licence Plate							
	Front Left Wheel Arch							
	Back Left Wheel Arch							
	Front Right Wheel Arch							
	Back Right Wheel Arch							
	Bucket							
	Tread/Tracks							
	Drivers Footwell							
	Drivers Seatback							
	Chassis							
	Steering Wheel							
	Background Count							

Radiation Badges

All employees and contractors, involved with the drilling programs will be provided with an individually numbered TLD Badge, to be worn daily while on site. Each TLD Badge is to be left in a clean area away from possible contamination at end of a shift. The clean area should be located away from core or cuttings and away from any outcrops of mineralization. The best place to put it is at the accommodation area. Keep a separate listing of badge issue number and date against each person's name, in the Radiation logbook. List ALSO the person's *date of birth* (there are lots of John Smiths and Darryl Jones's around, and there are 40,000 radiation workers in Australia!!).

TLD badges will be returned to ARPANSA, for dose assessment, at the end of each campaign, or at the end of each 3 month wearing period during extended drilling programs.

KOBA resources limited

Yarramba Uranium Project

TLD Badge Record Sheet

Year: 2024

Name	DOB	Work Group	Badge Number	Issue Date	Batch Dates	No. Days Worn	Total Dose (uSv)

APPENDIX 2 – RADIATION SAFETY INDUCTION MANUAL

Worker Inductions and Training

- At least one person on site during active exploration activities should be a trained radiation safety officer. The RSO, Mark Couzens will be on site for the first month of the initial drill program to train field personnel and ensure that all obligations of the RMP are being met. When not on site the RSO will mentor all assigned field personnel to complete all tasks required in the RMP. Geologist Benjamin Gluszkowski will be trained by the RSO to complete field requirements of the RMP.
- All employees and contractors are to receive general training in radiation safety and be aware of the risks of working with radioactive materials and steps which can be taken to minimise their exposure.
- Training will be initiated with a Radiation Safety Induction briefing shortly after arrival on site and will be issued with a Radiation Safety Manual.
- Records of inductions will be maintained together with a signed receipt for the Radiation Safety Induction Manual.
- A copy of the radiation safety induction manual is shown on the next page. It includes a page to sign at the end of the manual which needs to be signed by all personnel on site and filed in the Radiation Logbook.

RADIATION SAFETY INDUCTION MANUAL

for

Yarramba Uranium Project, SA

EL5873, EL5904, EL5940, EL5951, EL5952, EL5964, EL6099, EL6161, EL6194, EL6203, EL6258, EL6298, EL6356, EL6357, EL6359, EL6370, EL6593, EL6657, EL6660, EL6662, EL6973 & EL6974

March 2024

Version 1.1

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Signed: _____ on the 17th May 2024

Submission Date: 25th March 2024

EPA Approval Date: 17th May 2024

Introduction

The Yarramba Uranium Project is located approximately 60 km North of Cockburn in South Australia. The project area lies within the southeastern part of the Frome Embayment consisting of Tertiary sediments of the Yarramba Palaeochannel. The Yarramba Palaeochannel contains known uranium mineralisation of grades up to 1.87% eU_3O_8 (18700 ppm).

Uranium is widely present in the Earth's crust, averaging about 3 parts per million (ppm) in ordinary soil, and up to about 30 ppm in some granites. Uranium ores range from 0.03% (300 ppm) up to a few percent (> 100,000 ppm) in the richest Canadian deposits. The mineralisation at the Yarramba Uranium Project is expected to be within the range of 0 to 1500 ppm U_3O_8 which is considered to be low grade.

In discussing radiation control in uranium mining (or mineral sand mining), we need to recognise that radiation is very easy to detect and measure – that's why it is used for tracer studies in industry and scientific research. It is also a fact that radiation in uranium mining is very easy to control.

Radiation is part of our natural environment. We all receive radiation doses, all the time, from gamma rays from uranium, thorium, and potassium in the ground, from breathing in radon gas in the air, from cosmic rays from outer space, and even from radioactive elements in the food we eat. The world-wide population average annual dose from all these sources, collectively called natural background, is about 2,000 or 3,000 **microsieverts (μSv)** per year. In high radiation areas, (high mountains, uraniferous granite country, mineral sand coastlines) this can be over 10,000 μSv (microsieverts) per year. For comparison, the dose from x-rays during a CAT-scan will be 10,000 to 20,000 μSv, and from a heart stress test nuclear medicine injection, about 12,000 μSv.

When working on sites exploring for, mining, or processing uranium, you can receive a radiation dose which is higher than the normal background level. Therefore it is important to *monitor* radiation levels, and (if necessary) put in place control measures to minimize the doses received from your work. It is also important to avoid spread of contamination in the local area, and to avoid transport of radioactive contamination off site as dirt on vehicles and equipment. In uranium exploration work, you are unlikely to exceed a dose of 1,000 μSv per year (on top of natural background).

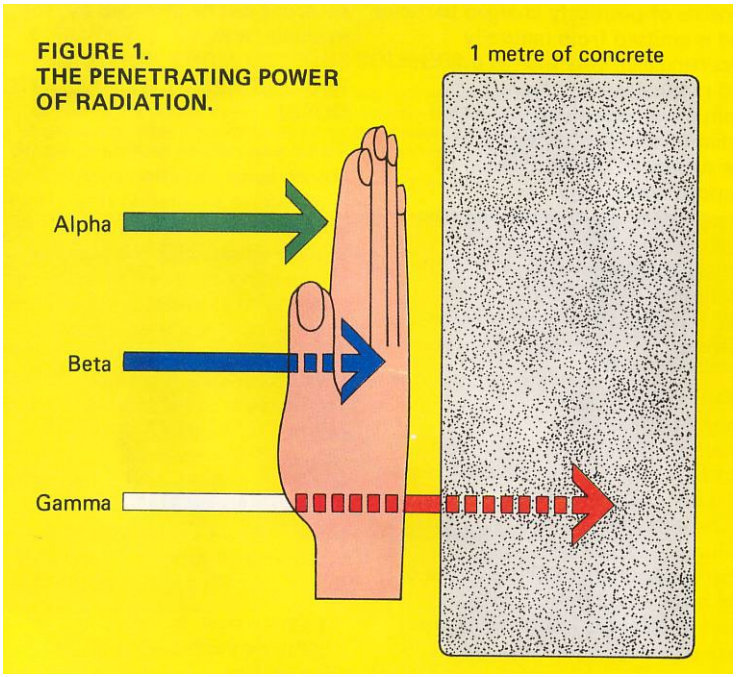
This Manual gives an introduction to radiation and sets out the simple rules you need to follow to minimize your radiation dose and to prevent radiation contamination both on and off site.

Provided you follow these rules, you can be sure that the radiation dose you receive during your work on the Yarramba Uranium Project will remain well below the limit for Radiation Workers, and probably also below the annual limit for members of the public, and that environmental contamination will also remain small and well-controlled.

Radiation: what is it?

Radioactive atoms, including atoms of uranium, radium, and thorium, carry *excess energy*, and are unstable (like a wound-up spring, or a ball balanced on a fencepost). They break down, or decay, to make new 'daughter' atoms and eject some of their excess energy in tiny 'packets' of energy called alpha, beta, and gamma radiation. Alpha, beta and gamma radiations have different ranges in solid matter:

- Alpha particles are electrically charged helium atoms, ejected at very high speed from the atom at the instant of breakdown. They are slowed down and stopped by about the thickness of a sheet of paper (say 50 microns, 0.05 mm), and by about 3 cm of air. But they make a dense ionization damage trail along the stopping track.
- beta particles are electrons formed by the transformation of a neutron to a proton, emitted by the atom at a very high speed. They can travel a centimetre or so in solids and many centimetres or metres in air before stopping, but carry less energy, and give it up in a much more spread out and less dense track (so the damage is very much less).
- Gamma rays are electromagnetic energy, like x-rays, and are very penetrating, and can pass through several centimetres of solids (e.g., 1 cm of lead, or 2 cm of steel, or 10 cm of sand).



When radiation is absorbed by matter it causes damage to the chemical molecules making up the material, and the amount of damage is proportional to the energy delivered per unit mass. Because radiation can ionize atoms, it can damage chemical structures in living cells, such as DNA, the information-carrying molecules that control what the cell does. The *biological damage to living tissue by radiation energy* is described as the "*dose*".

Radiation dose to humans is measured in unit called Sieverts (Sv). A Sievert is a very large dose, and therefore in normal situations, doses are discussed in units of millisieverts (mSv), equal to one-*thousandth* of a Sievert, and **microsieverts (μSv), equal to one-*millionth* of a Sievert.**

On the basis of the observed health effects (namely, excess cancers and leukaemia's) in people exposed to radiation in very-high-dose situations in the past (the Japanese atom bomb survivors, overexposed medical patients, radiologists, etc) and taking the cautious approach of *assuming* there is no dose level below which there is *zero* risk, a dose of 1 Sievert (1 million microsieverts) is estimated to deliver a risk (of radiation-caused cancer) of 4% in the exposed person's lifetime.

Working from this basis, the **International Commission on Radiological Protection (ICRP)** has recommended 1,000,000 microsieverts of radiation dose as the **lifetime** limit, for radiation workers, and, *assuming fulltime work for 50 years in a "radiation job"*, has therefore set one-fiftieth of a Sievert as the yearly dose limit, equal to 20,000 microsieverts per year. This limit is written into the Australian National Standard for Occupational Exposure to Ionizing Radiation, and the Radiation Control legislation of all the states, and the Code of Practice on Radiation Protection in Mining and Mineral Processing.

Most full-time radiation workers (e.g., industrial radiographers, medical radiologists, radiographers, nurses, and radiotherapy technicians in hospitals, and uranium miners and mineral sand mine separation plant operators) receive an annual dose much lower than the 20,000 microsievert **(μSv)** limit, generally 2,000 or 3,000 μSv, up to a maximum of about 5,000 or 6,000 μSv.

The Annual Limit for Members of the Public from human practices such as mining research or industry, is set at 1,000 μSv per year, on top of Natural Background. (This lower figure takes into account the need for lower dose limits for children and pregnant women, and the fact that non-workers may have ongoing health problems.)

The average dose from *natural background radiation* (from soil, cosmic rays, etc) received by everyone in the world is, depending on where you live, about 2,000 or 3,000 μSv per year.

For comparison, medical radiation procedures generally give the patient somewhat more radiation: a 'CAT' scan covering the chest and abdomen gives about 10,000 to 20,000 μSv; a heart stress test using injected radiopharmaceuticals gives about 12,000 μSv; other nuclear medicine scans generally give 5,000 or 6,000 μSv. A chest or lower limb x-ray gives about 50 to 100 μSv.

Fulltime work on a drill rig on a delineated uranium prospect might give something between 500 μSv and 2,000 μSv in a year, depending mainly on dust control and ore grade. In low dust or no dust conditions, one can expect well under 1,000 μSv per year. However, full time work on RC rig drilling in uranium ore, above the water table, without water injection or dust protection, could give significantly higher doses.

Radiation Dose Delivery Pathways

Radiation doses can be received by the human body by four 'dose delivery pathways'. These are:
(i) direct shine by gamma rays emitted by radioactive materials;
(ii) inhalation of radon gas progeny (or 'radon daughters') in the air;
(iii) inhalation of airborne dust containing radioactive materials;
(iv) ingestion of radioactive materials.

All these pathways contribute differently depending on the work circumstances and the controls in place. For instance, in an underground uranium mine, *inhalation of radon daughters* is most important, requiring a high standard of ventilation, but in all above ground situations (like exploration activities) it is trivial and indistinguishable from background. For a pipeline weld testing industrial radiographer using a sealed high intensity gamma ray source, *direct gamma irradiation* is very important, and requires careful control, but all other dose delivery pathways are non-existent.

For exploration work, *inhalation* and *ingestion* of dust containing radioactive atoms, are the main pathways that need to be assessed and may require control. Gamma dose rate will also be monitored, as gamma monitoring gives 'early warning' of the presence of radioactive materials.

Uranium is a radioactive metal and is the 'parent' of a series of other radioactive elements:
*Here is the **U-238 Decay Chain:***

Nuclide	Radiation	Half-life
Uranium 238	α	4.5 billion yrs
Thorium 234	β, γ	24 days
Protactinium 234	β	1.2 minutes
Uranium 234	α	250 000 yrs
Thorium 230	α	80 000 yrs
Radium 226	α, γ	1600 yrs
Radon 222 (gas)	α	3.8 days
Polonium 218	α	3 minutes
Lead 214	β, γ	27 minutes
Bismuth 214	β, γ	20 minutes
Polonium 214	α	160 microsecs
Lead 210	β, γ	22 yrs
Bismuth 210	β	5 days
Polonium 210	α	140 days
Lead 206	---	stable

α = alpha particle, doubly charged helium nucleus, 2 protons + 2 neutrons.
β = beta particle, high speed electron emitted from nucleus.
γ = gamma ray, electromagnetic radiation, similar to x-ray.

General Principles of Radiation Control

For protection against "beamed" energy, i.e., against direct exposure to x-rays or gamma rays, TIME, DISTANCE, and SHIELDING are used to minimize dose. You either *minimise your time exposed,* or *keep your distance* (the inverse square law says that double the distance will give a quarter of the dose rate), or *use some absorbing shielding* (like sand, lead, or steel). HOWEVER, there are no gamma ray sources in uranium exploration so strong that they will ever need active control like this.

For protection against airborne contamination, e.g., airborne dust which may contain uranium, thorium and radium: GOOD DUST CONTROL AND VENTILATION ARE IMPORTANT. Stay out of any plume of dust, mist or spray. If you cannot avoid airborne radioactive dust, then DUST MASKS or RESPIRATORS should be used. (simple P1 or P2 type half face disposables are fine.)

For protection against dose from ingestion of surface contamination (e.g., on hands or on tables), SIMPLE WASHING IS EFFECTIVE. Washing your hands and meal tables adequately removes all dirt and mud, whether it is carrying radioactive substances or not.

The general guiding principle in all radiation protection is to try to keep doses "As Low As Reasonably Achievable" in the circumstances. (This is called the "ALARA" principle) This does not mean that we must prevent every particle of uranium from escaping (which is impossible and unnecessary), or that we must shield against even the lowest intensity of gamma rays, but it does mean that sensible good practices (i.e. reasonable measures) are obligatory to minimise doses.

Work Procedures

1. Occupational hygiene and dose control:

During drilling and other work at the Yarramba Uranium Project, the main requirement as regards radiation dose will be CONTROL OF RADIOACTIVE DUST.

The radioactive dust should not be (i) breathed in; or (ii) ingested (eaten or swallowed).

When you are handling core or cuttings etc, you should be aware that these contain radioactive material and it is important to minimise the amount of dust stirred up into the air, and to minimize your inhalation of that dust. If the work activities are unavoidably dusty, then you **must** wear a respirator or dust mask.

Before meal and smoke breaks it is important to wash your hands and face, to remove dust. This is to prevent the transfer of dust onto food or onto cigarettes and then to your mouth. **Smoking is not allowed in the work areas**, and you should only light up away from work areas and only **after washing** your hands and face.

You should **shower and change clothes at the end of shift**.

Remember: “Don’t eat the dust; and don’t breathe the dust”
PROVIDED THESE RULES ARE FOLLOWED, THE RADIATION DOSE THAT YOU WILL RECEIVE AT WORK WILL BE WELL BELOW THE REGULATORY LIMIT.

2. Environmental Contamination Control:

Cuttings should not be left spread around after drilling of a hole is completed. All excess loose mineralized material (i.e., material which gives surface gamma count rate in excess of 2 times background) should be buried, either by being pushed back into the drill hole (after all clear by site geologist) or pushed into drill sumps and buried with surface soil to a depth of 100 cm, so as to avoid leaving loose mineralized contamination on the surface which could then be dispersed.

3. Site Departure Clearance Checks:

Nothing should go off site if it is contaminated with radioactive dust or mud!! This includes personal tools, heavy equipment, vehicles, drill rigs, or yourself!! Radioactive contamination is *not magic*, it can be removed like any other dirt, namely by ***washing***. Anything leaving site should be washed first, then checked and only after passing the contamination clearance, and formally recorded as clean and cleared, may it leave site. Heavily contaminated equipment may need to be cleaned with a high pressure water gun, and may need repeat cleaning.

This is very important and must not be ignored. Letting dirty gear offsite is asking for trouble!!

Radiation Monitoring on Marmota Projects

Gamma irradiation :
Personal radiation dose badges (“TLD badges”) will be issued. These are obtained as a commercial service from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) Laboratory, in Melbourne, a section of the Commonwealth Department of Health. Your TLD badge must be worn at work; after work it is to be kept on a badge board after you change out of your work clothes. Don’t lose your badge - ***ARPANSA charges payment for each lost badge, and this cost will be passed on to you if you lose your badge.)***

Personal TLD Radiation Badge

A gamma survey monitor (Exploranium GR135, Geosensor, RadEye or Geiger Mueller Probe) will be used to check core and cuttings for the presence of radioactive elements.

Geiger Mueller Probe Model 44-38 (above)

GeoSensor (left) and Exploranium GR 135 (above)

Radiation dose by Inhalation:

Workers will be occasionally required to wear a personal air sampling pump, to provide information on airborne dust contamination levels. This pump sucks air from your 'breathing zone' through a filter on which airborne dust is trapped. The filter is afterwards counted by an alpha radiation counter to assess the level of contamination in the air. Please assist us by cooperating in this monitoring, it is intended to provide for your well-being, to enable dose calculations, and to assess the need (or otherwise) for use of respirators. In dusty conditions all workers will be instructed to wear respiratory protection in the form of a P1or P2 disposable face mask that will be available on site at all times if required.

Personal Air Sampler and Filter Holder

Alpha Drawer Assembly and Counter

Radiation dose by Ingestion:

There will be a surface contamination monitor available with the Site Geologist so that you can check your hands for contamination before smoko and lunch. You need to wash your hands *before checking* to minimize the risk of contaminating the instrument!! Tables and desks will be scanned for surface contamination as part of the monitoring program.

Large Area Surface Alpha Contamination Probe

Personal Dose Calculations

On a yearly basis, dose calculations will be done for all workers involved, based on dust sampling results, time on job, and radiation badge readings, and the results will be reported to the individuals concerned, as well as to the regulator and the company (Koba Resources Limited).

Yarramba Uranium Project

Acknowledgment of Radiation Safety Instructions and Briefing

I certify that I have received a verbal briefing on radiation safety as it applies to the Koba Resources Exploration activities and have been given access to a copy of the Radiation Safety Manual if needed.

NAME OF WORKER: .....

COMPANY: ……

DATE OF BIRTH: .....

HOME ADDRESS (for return of Radiation Badge readout):

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Any previous Uranium or Mineral Sands Project work? .....

-- If so, where and when? .....

-- Were you issued with a personal TLD radiation badge? ……..

(This is for linking with previous dose reports, if any)

SIGNATURE OF WORKER: .....

NAME OF INSTRUCTOR: .....

SIGNATURE OF INSTRUCTOR: .....

DATE OF RADIATION SAFETY INDUCTION: .....

(This receipt must be torn out and retained by Site Geologist / Instructor after filling out.)