



**Approval**

**Expansion of the Olympic Dam copper, uranium, gold and silver mine, processing plant and associated infrastructure (EPBC 2005/2270)**

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

**Proposed action**

**person to whom the approval is granted** BHP Billiton Olympic Dam Corporation P/L

**proponent's ACN (if applicable)** ACN: 007 835 761. ABN: 99 007 835 761

**proposed action** Expansion of the Olympic Dam copper, uranium, gold and silver mine and processing plant, including all associated infrastructure, South Australia and Northern Territory [See EPBC Act referral 2005/2270, as varied on 24 October 2008 and 9 June 2010].

Controlling Provision	Decision
Wetlands of international importance (sections 16 & 17B)	Approve
Listed threatened species and communities (sections 18 & 18A)	Approve
Listed migratory species (sections 20 & 20A)	Approve
Nuclear actions (sections 21 & 22A)	Approve
Commonwealth land (sections 26 & 27A)	Approve

**conditions of approval**

This approval is subject to the conditions specified below.

**expiry date of approval**

This approval has effect until 30 October 2061

**Decision-maker**

**name and position** The Hon Tony Burke MP  
Minister for Sustainability, Environment, Water, Population and Communities

**signature**

**date of decision**

10.10.11

## **Schedule 1: Mining and processing**

### **Scope**

1. The conditions in this schedule apply to all activities undertaken by the Approval Holder on the Special Mining Lease and to water extraction by the Approval Holder from Wellfields A and B in the Great Artesian Basin.

### **Commencement and completion**

2. Within 10 business days of the date of Substantial Commencement of the activities covered by this schedule, the Approval Holder must advise the Department in writing of the actual date of commencement.
3. If, at any time after five years from the date of this approval, the Approval Holder has not substantially commenced the activities covered by this schedule, then the Approval Holder must not commence those activities without the written agreement of the Minister.

Note: The 50 year duration of this approval allows for a period of 10 years for rehabilitation and closure after the end of 40 years of Mining and Processing.

### **Environmental protection management program (Mining and Processing)**

4. The Approval Holder must develop, and submit to the Minister for approval, an environmental protection management program in relation to Mining and Processing.
5. The program must specify:
  - a. the proposed operations covered by the program
  - b. measures to mitigate or avoid:
    - i. radiation exposure of Members of the Public and Non-human Biota
    - ii. site contamination
    - iii. mortality or injury to Listed Species of birds from exposure to the tailings storage facility
    - iv. local and regional groundwater impacts
  - c. the environmental outcomes to be achieved, as specified in conditions 13 (radiation), 16 (site contamination), 18 (fauna), 22 (groundwater), 26 (impacts of groundwater on vegetation) and 27 (extraction of water from the Great Artesian Basin)
  - d. Compliance Criteria, to demonstrate compliance with conditions 13 (radiation), 16 (site contamination), 24 (groundwater), 26 (impacts of groundwater on vegetation) and 28 (extraction of water from the Great Artesian Basin). A failure to meet Compliance Criteria represents non-compliance with these conditions
  - e. Leading Indicator Criteria as specified in conditions 17 (site contamination) and 25 (groundwater). Leading Indicator Criteria must provide an early warning that the Compliance Criteria identified in (d) may not be met. A failure to meet a Leading Indicator Criterion does not represent non-compliance with these conditions but remedial action must be taken in response. The program must specify the remedial action which will be taken in relation to an exceedance of a Leading Indicator Criterion

- f. Target Criteria, as specified in conditions 14 (radiation) and 20 (fauna).  
Target Criteria must reflect a level of impact that is as low as reasonably achievable for radiation exposure to humans, and must be minimised to the lowest reasonable levels for Non-human Biota. A failure to meet a Target Criterion does not represent non-compliance with these conditions but the Approval Holder must review practices if criteria are exceeded and endeavour to meet the Target Criteria
  - g. the specific parameters to be measured and monitored
  - h. the locations at which monitoring will take place, or how these locations will be determined
  - i. the frequency and timing of monitoring or how it will be determined
  - j. the baseline or control data to be used or how it will be acquired
  - k. information about the strategies and other measures the Approval Holder will implement to achieve the Compliance Criteria and to investigate and respond to any non-compliance with the Compliance Criteria, Leading Indicator Criteria, or Target Criteria (without limiting the measures that may be implemented to those specified in the program).
6. Where the South Australian Government has required standards to be met that relate to the Compliance Criteria, Leading Indicator Criteria or Target Criteria specified in the program, the Approval Holder must revise the program so that the criteria under condition 5(d) do not set a lower environmental standard. Any such revisions are taken to be a part of the program approved by the Minister.
7. The approved program must be implemented.

#### **Timing for approval of environmental protection management program**

8. The environmental protection management program must be submitted to, and approved by, the Minister before Substantial Commencement.
9. The environmental protection management program must be revised by the Approval Holder and the revised program must be submitted to the Minister for approval:
- a. prior to construction of the tailings storage facility. The program submitted to the Minister must address the recommendations from the report on exposure of Listed Species of birds to tailings prepared under condition 21
  - b. prior to commencement of mining of ore (after Overburden Removal).

#### **Review of program**

10. The environmental protection management program required under condition 4 must be reviewed at least every three years from the date of its first approval, or as otherwise specified in writing by the Minister. A report on the review must be provided to the Minister addressing:
- a. the effectiveness of the program over the preceding period
  - b. the monitoring results over the preceding three years and the extent to which Compliance Criteria, Leading Indicator Criteria and Target Criteria have been met
  - c. whether the Compliance Criteria should be revised to improve measurement of the achievement of the outcomes referred to in condition 5(c), taking into account the latest scientific information
  - d. whether the Leading Indicator Criteria can be revised to provide a better early warning of potential non-compliance

- e. whether Target Criteria should be changed to reflect a level of impact for Members of the Public that is as low as reasonably achievable and for non-human biota that risks are minimised to the lowest reasonable levels
  - f. opportunities for improved monitoring methods
  - g. the outcome of risk assessments undertaken over the preceding three years
  - h. the Approval Holder's response to the review, including any revisions to the program the Approval Holder proposes to make
  - i. the information on which the review was based
  - j. the expertise used in undertaking the review
  - k. any other findings and recommendations from the review
11. The Minister may require the Approval Holder to ensure that the report is independently reviewed and the results provided to the Minister. The financial cost of the review will be borne by the Approval Holder.
12. If the Approval Holder proposes to revise the program in response to the review, the revised program must be submitted to the Minister for approval. If the Minister approves revisions to the program, those changes must be implemented.

### **Radiation**

13. The Approval Holder must ensure that, in undertaking the activities covered by this schedule, exposure of Members of the Public to radioactive releases does not exceed relevant dose limits as described in the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing* and is as low as reasonably achievable.
14. The program required under condition 4 must include Target Criteria for radiation exposure in the form of a radiation Dose Constraint for Members of the Public and a Reference Level for impacts on Non-human Biota. The Dose Constraint must be no more than 300 micro-Sieverts in a year unless otherwise agreed by the Minister. The Reference Level must be consistent with any guidance provided in the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing*.
15. The program required under condition 4 must demonstrate that the Approval Holder uses Best Practicable Technology to ensure exposure of the public to radioactive releases is as low as reasonably achievable and exposure of Non-human Biota is also minimised to the lowest reasonable levels.

### **Site contamination**

16. In undertaking the activities covered by this schedule, the Approval Holder must ensure assessment and remediation of any contamination from spills or leaks, including from radioactive process materials, is undertaken in accordance with the *National Environment Protection (Assessment of site contamination) Measure 1999* (or as amended) and the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing*.
17. The program required under condition 4 must include Leading Indicator Criteria that specify, for each class of contaminants, investigation and response levels, as defined in the *National Environment Protection (Assessment of site contamination) Measure 1999* in the event that spills or leaks occur.

## Fauna

18. The program required under condition 4 must demonstrate that the Approval Holder uses Best Practicable Technology to ensure that impacts on Listed Species of birds from exposure to the tailings storage facility or Evaporation Ponds are minimised to the lowest reasonable levels. This must include:
  - a. measures to prevent Listed Species of birds from accessing the Central Decant Pond of each new cell in the tailings storage facility, such as barrier netting;
  - b. measures to prevent Listed Species of birds from accessing the Balancing Ponds, such as barrier netting.
19. The Approval Holder must not construct Evaporation Ponds (for the purpose of the expanded mine).
20. The program required under condition 4 must specify Target Criteria for impacts on Listed Species of birds. Target Criteria must be specified for each of the Listed Species of birds that are likely to be affected. The Target Criteria must be at a level to avoid significant impacts on those species, based on the significant impact criteria for threatened and migratory species in *EPBC Act Policy Statement 1.1, Significant Impact Guidelines – Matters of National Environmental Significance* (Department of the Environment, Water, Heritage and the Arts 2009, or as amended) and Draft EPBC Act Policy Statement 3.21 - Significant Impact Guidelines for 36 migratory shorebird species (Department of the Environment, Water, Heritage and the Arts 2009, or as finalised or amended).
21. The Approval Holder must undertake a review to identify further opportunities to decrease the attractiveness of tailings storage facilities (in place at the date of this approval) and Evaporation Ponds to Listed Species of birds, prevent and deter visits by large flocks of Listed Species of birds, improve monitoring methods, phase out the use of Evaporation Ponds as soon as practicable, and ensure continuous improvement in reducing the number of Listed Species of bird mortalities each year. A report on the outcome of this review must be provided to the Minister prior to commencement of construction of the tailings storage facility. The report must make recommendations for reviewing Target Criteria for impacts on Listed Species of birds and for a staged reduction in this criteria, and state how the Approval Holder will address these recommendations in the environmental protection management program.

## Groundwater

22. The Approval Holder must ensure that the activities undertaken by the Approval Holder on the Special Mining Lease do not result in any:
  - a. significant adverse impact on groundwater dependent Listed Species or Ecological Communities
  - b. significant adverse impact on the Environmental Values (as described in the Environmental Impact Statement or as revised under condition 23b) of the Yarra Wurta springs
  - c. compromise of the environmental values of groundwater outside the Special Mining Lease as a result of seepage from the tailings storage facility.



23. The program required under condition 4 must include a regional groundwater monitoring and management program. The program must provide for the Approval Holder to:
- a. further update, enhance and validate the Groundwater Simulation Model included in the Supplementary EIS by reviewing the model at least every three years from the date of this approval taking account of the results of the work required under this condition and monitoring data collected under the plan required under condition 4. Sensitivity analysis and predictions from modelling must comply with the *Murray Darling Basin Commission groundwater flow modelling guideline* (2000, or as amended), or alternative guidelines specified in writing by the Minister.
  - b. improve understanding of the hydrogeology and ecology of the Yarra Wurta Springs by undertaking a work program to:
    - i. determine the significance that declines in groundwater levels in the Andamooka Limestone may have on the Springs
    - ii. develop a well substantiated understanding of the hydrogeology and groundwater processes supporting the Yarra Wurta Springs
    - iii. develop a well substantiated understanding of the structural controls that exist between Yarra Wurta Springs and the open pit
    - iv. develop a well substantiated understanding of the storage buffering of Lake Torrens to the drawdown of groundwater levels within the Andamooka Limestone.
  - c. confirm the conceptual understanding of the hydrogeology of the Torrens Hinge Zone by undertaking a work program to:
    - i. develop a well substantiated understanding of the hydrogeology of the Torrens Hinge Zone, based on a combination of hydrochemical, hydrogeological and geophysical information, and confirm the existence and magnitude of the groundwater divide
    - ii. determine aquifer parameters for the Torrens Hinge Zone to be used in modelling upgrades.
  - d. confirm the conceptual understanding of the hydrogeology of the Stuart Shelf by undertaking a work program to:
    - i. develop a well substantiated understanding of the recharge mechanisms to the Stuart Shelf, including recharge from rainfall and inflow from the Arckaringa Basin
    - ii. develop a well substantiated understanding of impacts to the regional groundwater system resulting from the open pit void
24. The program required under condition 4 must include Compliance Criteria to determine whether the requirements of condition 22 are being achieved. Compliance criteria must be adequate to confirm that:
- a. in relation to 22(a), that groundwater drawdown from mining operations will have no significant adverse impact on groundwater pressure in the Great Artesian Basin
  - b. in relation to 22(b), that groundwater drawdown from mining operations will not have a significant adverse impact on groundwater flow and pressure of the Yarra Wurta Springs
  - c. in relation to 22(c), that seepage from the tailings storage facility will flow towards the open pit.

25. The program required under condition 4 must include Leading Indicator Criteria to address condition 22(c) based on measured attenuation rates of seepage from the tailings storage facility, and monitoring of lateral movement of seepage.
26. To ensure the activities covered by this schedule do not result in any significant adverse impact on vegetation from seepage from the tailings storage facility, the groundwater level at the perimeter of the tailings storage facility must not be higher than 80 metres Australian Height Datum, unless otherwise agreed in writing by the Minister.

#### **Extraction of water from the Great Artesian Basin**

27. The Approval Holder must ensure that the extraction of water from Wellfields A and B in the Great Artesian Basin, as assessed under the *Environment Protection (Impact of Proposals) Act 1974*, does not have a significant adverse impact on groundwater dependent listed threatened species or Ecological Communities.
28. The program required in condition 4 must include:
  - a. Compliance Criteria for condition 27
  - b. a requirement for collection of spring flow data and bore pressure data, and details of how these will be used to refine aquifer parameters and re-estimate draw down effects at spring groups at regular time intervals
  - c. contingency measures and a response plan to address any significant adverse variation in monitored and/or predicted draw down or flow rates at mound springs occurring as a result of water extraction by the Approval Holder
  - d. collection of a long term data set to achieve a better understanding of fluctuations in these systems.

#### **Other outcomes**

29. In undertaking activities covered by this schedule, the Approval Holder must ensure that:
  - a. there is no significant adverse impact on the abundance and diversity of Listed Species outside the Special Mining Lease as demonstrated by baseline and ongoing flora and fauna surveys
  - b. there is no increase in abundance or area of infestation of declared weeds, plant pathogens and pest animal populations (as declared under the *Natural Resources Management Act 2004 (SA)*) as demonstrated by baseline and ongoing flora and fauna surveys
  - c. management of radioactive substances and waste is consistent with the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing*.

#### **Best practicable technology**

30. The Approval Holder must review the activities covered by this schedule at least once every ten years from the date of this approval to confirm that Best Practicable Technology is being used to minimise environmental impacts and risks. The Approval Holder must provide a report to the Minister on the outcomes of the review within three months of completing the review. The report must specify:
  - a. the terms of reference for the review
  - b. the information on which the review was based
  - c. the recommendations from the review
  - d. the Approval Holder's response to the review.

31. The experts to be used in the review must be approved by the Minister before the review commences. The financial cost of the review will be borne by the Approval Holder.

Note: Condition 87 provides that, if the Minister believes that it is necessary or desirable for the better protection of the environment, the Minister may require the Approval Holder to make, within a period specified by the Minister, revisions to a plan approved under these conditions.

### **Mine closure**

32. Within two years of the date of this approval, or prior to construction of the tailings storage facility, whichever date is the earliest, the program required under condition 4 must be revised to include a mine closure plan. The mine closure plan must:
- a. include a set of environmental outcomes that will be achieved indefinitely post mine closure
  - b. include assessment criteria that are clear, unambiguous and are specific to the achievement of the specified environmental outcomes and which include:
    - i. parameters to be measured and monitored
    - ii. the locations where monitoring will take place, or how these locations will be determined
    - iii. the measures for demonstrating achievement of the outcome, with consideration of any inherent errors of measurement
    - iv. the frequency and timing of monitoring, or how this will be determined
    - v. identification of the background or control data to be used or how these will be acquired.
  - c. contain a comprehensive safety assessment to determine the long-term (from closure to in the order of 10,000 years) risk to the public and the environment from the tailings storage facility and rock storage facility. The safety assessment must include:
    - i. a systematic approach that includes international best practice methodology such as a features, events, processes study (as defined by the International Atomic Energy Agency). The Approval Holder must consult the Department and the South Australian Government in developing the methodology for the study
    - ii. modelling of alternative covers for the tailings storage facility to develop a preferred cover using industry best practice models, including models that assess the long term erosion of the final proposed landforms.
  - d. describe the measures the Approval Holder will implement to:
    - i. achieve the Compliance Criteria, and
    - ii. investigate and respond to any potential or actual non-compliance with the assessment criteria.
  - e. describe the Approval Holder's management systems that will be used to demonstrate compliance with the assessment criteria and reduce the risk of non-compliance
  - f. address the potential for and impacts resulting from early, unplanned closure
  - g. demonstrate that all practical options for progressive rehabilitation have been addressed



- h. propose on-ground trials during operations that demonstrate the feasibility and improve the viability of the proposed remediation strategies, including site trials of the preferred covers
- i. include a requirement that rehabilitation and closure commence, at the latest, 10 years before the expiry date of this approval.

### **Rehabilitation bond**

- 33. On request by the Minister, the Approval Holder must provide details of the financial arrangements that may be required by the South Australian Government in relation to ensuring adequate rehabilitation for the action. The Approval Holder must comply with the request within 20 business days.
- 34. If at any time the Minister determines in writing that s/he is not satisfied that adequate financial arrangements, as may be required by the South Australian Government, are in place to ensure that the mine closure plan (required under condition 32) will be implemented, the Minister may require the Approval Holder to provide an arrangement (in the form of a bond, financial guarantee or similar arrangement (in these conditions 'a bond')), as directed by the Minister.
- 35. The maximum value of a bond that may be required by the Minister under condition 34, is the difference between the value of the arrangements the Approval Holder has provided to meet South Australian requirements, and the amount determined by the Minister as the full cost of implementation of the mine closure plan.
- 36. The Minister may decrease the bond amount required where the Approval Holder has decreased the liability through undertaking rehabilitation.
- 37. In providing for or varying a bond amount in accordance with these conditions, the Minister may request the Approval Holder to obtain written quotes for the cost of the rehabilitation liability under the mine closure plan from a third party approved by the Minister.
- 38. The Approval Holder must meet all the charges and costs in obtaining and maintaining the bond.

## **Schedule 2: Desalination plant**

### **Scope**

- 39. The conditions in this schedule apply to the construction and operation of the desalination plant at Point Lowly, as described in the EIS.

### **Timing of commencement**

- 40. Within 10 business days of the date of commencement of the activities covered by this schedule, the Approval Holder must advise the Department in writing of the actual date of commencement.
- 41. If, at any time after twelve years from the date of this approval, the Approval Holder has not substantially commenced construction of the desalination plant, then the Approval Holder must not commence this component without the written agreement of the Minister.

### **Environmental protection management program (Desalination Plant)**

42. The Approval Holder must develop, and submit to the Minister for approval, an environmental protection management program in relation to the desalination plant.
43. The program must specify:
- a. the proposed operations covered by the program
  - b. measures to mitigate or avoid:
    - i. significant salinity changes in the Upper Spencer Gulf
    - ii. impacts on the Australian Giant Cuttlefish
    - iii. impacts on other marine species and communities.
  - c. the environmental outcomes to be achieved, as specified in conditions 46 (Australian Giant Cuttlefish) and 51 (other marine species and communities)
  - d. Compliance Criteria, to demonstrate compliance with conditions 45 (salinity changes in Upper Spencer Gulf), 47 (Australian Giant Cuttlefish) and 52 (other marine species and communities). A failure to meet Compliance Criteria represents non-compliance with these conditions
  - e. Leading Indicator Criteria as specified in conditions 47 (Australian Giant Cuttlefish) and 52 (other marine species and communities). Leading Indicator Criteria must provide an early warning that the Compliance Criteria identified in (d) may not be met. A failure to meet a leading indicator does not represent non-compliance with these conditions but means that remedial action must be taken in response. The program must specify the remedial action which will be taken in relation to an exceedance of Leading Indicator Criteria
  - f. the specific parameters to be measured and monitored
  - g. the locations at which monitoring will take place, or how these locations will be determined
  - h. the frequency and timing of monitoring or how it will be determined
  - i. the baseline or control data to be used or how it will be acquired
  - j. information about the strategies and other measures the Approval Holder will implement to achieve the Compliance Criteria and to investigate and respond to any non-compliance with the Compliance Criteria or Leading Indicator Criteria (without limiting the measures that may be implemented to those specified in the program).
44. The program must be approved by the Minister before commencement of the activities covered by this schedule. The program must be implemented.

### **Salinity changes in Upper Spencer Gulf**

45. The activities covered by this schedule must not result in an increase in salinity in the Upper Spencer Gulf of more than 0.15 g/L at any time, unless otherwise agreed in writing by the Minister.

### **Australian Giant Cuttlefish**

46. The activities covered by this schedule must not result in any significant adverse impacts on the abundance and distribution of the Australian Giant Cuttlefish.
47. The program required under condition 42 must include Compliance and Leading Indicator Criteria addressing condition 46.

48. The return water outfall diffuser must be designed to achieve a dilution factor greater than 1:85 at all cuttlefish breeding areas during all tidal conditions (including dodge tides) and discharge flow rates (including under low discharge flow rates).
49. Trenching and blasting for construction of the intake pipe must not occur in the breeding season for the Australian Giant Cuttlefish between 1 May and 31 October each year (or such other dates which may be specified by the Minister in writing).
50. The program required under condition 42 must include a program for baseline surveys and annual monitoring of breeding populations of Australian Giant Cuttlefish abundance and distribution in the Upper Spencer Gulf to improve the understanding of natural population variability and provide a stronger knowledge base for management of the Australian Giant Cuttlefish.

#### **Other marine species and communities**

51. The activities covered by this schedule must not result in any significant adverse impact on the condition and extent of native marine species or their associated Ecological Communities beyond 100m of the diffuser.
52. The program required under condition 42 must include Compliance Criteria and Leading Indicator Criteria addressing condition 51.
53. The return water outfall diffuser must be designed to achieve a dilution factor greater than 1:70 beyond 100 metres of the diffuser as demonstrated by near-field modelling.
54. The outfall pipe from the desalination plant must be installed by tunnelling.

#### **Operational dilution factor**

55. Prior to construction of the desalination plant, the Approval Holder must undertake further ecotoxicology testing in relation to the dilution factor required to protect native marine species (including the Australian Giant Cuttlefish).
56. The Approval Holder must establish an expert panel, consisting of at least three independent ecotoxicology experts approved by the Minister, to:
  - a. review the proposed scope for the ecotoxicology testing required under condition 55
  - b. provide recommendations on the appropriateness of the species selected, the appropriateness of the experimental design, and acceptable criteria for quality assurance/control for those species tests that do not have existing standards
  - c. where an existing standard test is being used, confirm that the accompanying quality assurance/control criteria are adequate
  - d. review the interpretation of the results from the tests.
57. Prior to construction of the desalination plant, a report must be submitted to the Minister which includes:
  - a. the results of the ecotoxicology testing;
  - b. a proposed operational dilution factor for the return water discharge
  - c. the findings of the expert panel established under condition 56

- d. the results of further near-field and mid-field modelling to demonstrate the ability of the proposed diffuser design to achieve compliance with the dilution factor under all possible conditions
- e. recommended Compliance Criteria and Leading Indicator Criteria for inclusion in a revised environmental management and monitoring plan for the desalination plant.

### **Review of program**

58. The environmental protection management program required under condition 42 must be reviewed at least every three years from the date of its first approval, or as otherwise agreed in writing by the Minister. A report on the review must be provided to the Minister addressing:
- a. the effectiveness of the program over the preceding period
  - b. the monitoring results over the preceding three years and the extent to which Compliance Criteria and Leading Indicator Criteria have been met
  - c. whether the Compliance Criteria should be revised to improve measurement of the achievement of the outcomes referred to in 43(c), taking into account the latest scientific information
  - d. whether the Leading Indicator Criteria can be revised to provide a better early warning of potential non-compliance
  - e. opportunities for improved monitoring methods
  - f. the outcome of risk assessments undertaken over the preceding three years.
  - g. the Approval Holder's response to the review, including any revisions to the program, if any, the Approval Holder proposes to make
  - h. the information on which the review was based
  - i. the expertise used in undertaking the review
  - j. any other findings and recommendations from the review.
59. If the Approval Holder proposes to revise the program, the revised program must be submitted to the Minister for approval. If the Minister approves changes to the program, those changes must be implemented.
60. The Minister may require the Approval Holder to ensure the report is independently reviewed and the results provided to the Minister. The financial cost of the review will be borne by the Approval Holder.

### **Schedule 3: Barge landing facility and pre-assembly yard**

61. The construction and operation of the barge landing facility, as described in the EIS, must not have a significant adverse impact on cetaceans as a result of noise or vibration, as demonstrated by:
- a. maintenance of an exclusion zone for cetaceans; and
  - b. a maximum sound exposure level for any blasting or pile driving.
62. The Approval Holder must specify an exclusion zone for the purpose of condition 61(a) and a maximum sound exposure for the purpose of condition 61(b) in an environmental management plan relating to construction of the barge landing facility. A plan satisfying State requirements and addressing the matters set out in this condition will be deemed to have been submitted and approved by the Minister.

Note: Condition 87 provides that, if the Minister believes that it is necessary or desirable for the better protection of the environment, the Minister may require the Approval Holder to make, within a period specified by the Minister, revisions to a plan approved under these conditions.

## **Schedule 4: Sulphur handling facility (Outer Harbor, Port Adelaide)**

63. The construction and operation of the sulphur handling facility on the Outer Harbor, Port Adelaide, as described in the EIS, must not have a significant adverse impact on the Ecological Values of the Barker Inlet and St Kilda wetlands, and Mutton Cove Conservation Reserve.

## **Schedule 5: Transport of copper and uranium oxide concentrate and Port of Darwin handling facility**

64. The transport of uranium oxide concentrate, the construction and operation of the Port of Darwin handling facility and rail transport of copper concentrate, as described in the EIS:
- a. must not have a significant adverse impact on the Ecological Values of the Port Darwin wetlands
  - b. must not expose Members of the Public or Non-human Biota to radioactive releases above the dose limits recommended in the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing*
  - c. must ensure exposure of Members of the Public to radioactive releases is as low as reasonably achievable and exposure of Non-human Biota is minimised to the lowest reasonable levels..
65. The Approval Holder must ensure that transport and loading of copper concentrate uses a no release containment system and that transport of both copper concentrate and uranium oxide concentrate is consistent with the *Code of Practice for the Safe Transport of Radioactive Material* (ARPANSA 2008, or as amended).
66. Before commencing construction of the Port of Darwin handling facility, the Approval Holder must prepare an environment management plan for the facility, which includes:
- a. design plans showing the type and extent of works proposed
  - b. a construction schedule and methodology, including plans and maps showing discharge points and emission controls for all construction stages
  - c. any potential impacts or effects of the proposed works on the environment during the construction and operational phases and the means by which adverse impacts will be avoided or mitigated.
67. A plan satisfying Northern Territory Government requirements and addressing the matters set out in condition 66 will be deemed to have been submitted and approved by the Minister.
- Note: Condition 87 provides that, if the Minister believes that it is necessary or desirable for the better protection of the environment, the Minister may require the Approval Holder to make, within a period specified by the Minister, revisions to a plan approved under these conditions.
68. The Approval Holder must provide the Department with notice of publication of the plan under condition 66. If requested, the Approval Holder must provide a copy of the plan to the Department, as specified by the Department.



## **Schedule 6: Infrastructure corridors (rail, electricity, gas, water)**

### **Scope**

69. The conditions in this schedule apply to the construction of the rail line and infrastructure for electricity, water and gas, as described in the EIS.

### **Infrastructure plan**

70. The rail line, water pipeline and electricity transmission lines must be constructed on the alignments shown in Figures N1.4 (a) – (f) of the *Olympic Dam expansion, Draft environmental impact statement 2009, Appendix N – Terrestrial ecology*, unless otherwise approved by the Minister under condition 71.
71. If the Approval Holder proposes to construct the rail line, water pipeline or electricity transmission lines on a different alignment to that specified above, or if the Approval Holder proposes to construct the gas pipeline, the Approval Holder must prepare an infrastructure plan detailing the proposed alignment and submit the plan to the Minister for approval. The plan must demonstrate how the alignment has been selected to:
- a. minimise the impact on the values of places on the National Heritage List, the World Heritage List and/or the Register of the National Estate
  - b. avoid and/or minimise impacts on nationally Listed Species and Ecological Communities, and migratory species, and other areas of environmental significance
  - c. avoid impacts on groundwater dependent listed threatened species or Ecological Communities, and migratory species, in the Great Artesian Basin
  - d. avoid and/or minimise, to the extent practicable, impacts on significant Indigenous heritage values.
72. If the proposed alignment for the gas pipeline passes between Lake Blanche and Lake Callabonna, the plan must include a review of the section from the 395 to 405 kilometre point from Olympic Dam by an appropriately qualified megafauna palaeontologist. The plan must include details as to how the Approval Holder will address any recommendations from that review to minimise impacts on fossils. The financial cost of the review will be borne by the Approval Holder.
73. The construction of the gas pipeline must not have a significant adverse impact on groundwater dependent listed threatened species or Ecological Communities, or migratory species, in the Great Artesian Basin.
74. Where construction will impact on the Cultana Training Area or the proposed expansion, or the Woomera Prohibited Area, the Approval Holder must consult with the Department of Defence before commencing that element of construction.
75. The Approval Holder must comply with any requirements by the Department of Defence to limit access to the Woomera Prohibited Area, in accordance with the Defence Force Regulations, as necessary for the protection of persons, property and official secrets.
76. Where a plan is required under this schedule, construction must not commence until the relevant plan is approved by the Minister. The approved plan must be implemented.

77. Subject to condition 78, the Approval Holder must provide, to the satisfaction of the Minister, evidence of consultation with Indigenous persons or groups with rights, claims or interests in an area where land disturbance for the activities covered by this schedule would occur in relation to:
- a. the adequacy of surveys to identify sites of Indigenous heritage value and the need for additional surveys
  - b. protocols for handling archaeological material that may be found during construction including measures for funding any costs that may result from the preservation or storage of this material
  - c. any processes and protocols related to:
    - i. the assessment of known Indigenous heritage values prior to construction
    - ii. any newly identified Indigenous heritage values during construction
    - iii. any relevant existing consents to disturb Indigenous heritage values from a relevant Indigenous group/s; and
  - d. obtaining future possible consent to disturb Indigenous heritage values from the relevant Indigenous group/s.
78. Where material is culturally sensitive and cannot be disclosed, the Approval Holder must advise the Department of the extent to which it cannot comply with condition 77 for that reason.
79. Construction to which this schedule relates must not commence until the Minister advises the Approval Holder in writing that s/he is satisfied with the consultation undertaken. The Minister may require, within a period specified in writing, the Approval Holder to undertake measures to ensure protection of Indigenous cultural heritage. The Approval Holder must comply with any such requirement.
80. Within 10 business days of the date of commencement of the activities covered by this schedule, the Approval Holder must advise the Department in writing of the actual date of commencement.

## **Schedule 7: Whole of project conditions**

### **Scope**

81. The conditions in this schedule apply to the entire action as referred under the Act and any activities relating to the Olympic Dam mine that were assessed under the *Environment Protection (Impact of Proposals) Act 1974* that will continue after the date of this approval.

## Environmental offsets plan

82. The program required under condition 4 must include an environmental offsets plan to compensate for clearance of vegetation and other environmental impacts associated with the action. The offsets plan must:

- a. as a minimum, provide a vegetation offset of at least 8 hectares of vegetation for every hectare cleared.

Note: At a ratio of 8:1, the required offset would correspond to approximately 140,000 hectares, based on projected figures for clearing in the environmental impact statement for the project.

- b. contribute to the biodiversity conservation priorities of the Australian and South Australian governments, in particular, having regard to:
  - i. high priority additions to the National Reserve System. Additions must:
    - meet the eligibility requirements in *Minimum requirements for contributing to the comprehensiveness, adequacy and representativeness of the National Reserve System through Caring for our Country funding* (Department of Sustainability, Environment, Water, Population and Communities 2011, or as amended)
    - increase representation of the National Reserve System in bioregions with less than ten per cent protection and/or subregions with less than five per cent representation.
  - ii. the *South Australian Arid Lands Regional Natural Resources Management Plan* (South Australian Arid Lands Natural Resources Management Board 2010, or as amended)
  - iii. the *South Australian Arid Lands Biodiversity Strategy* (SA Department for Environment and Heritage and SA Arid Lands Natural Resources Management Board 2009, or as amended)
  - iv. Wildlife Corridors Plan (Department of Sustainability, Environment, Water, Population and Communities, under development)
- c. contribute to landscape scale ecological linkages to increase resilience to climate change
- d. contribute to the protection and recovery of Listed Species and Ecological Communities, in particular, 'the community of native species dependent on natural discharge of groundwater from the Great Artesian Basin', and address key threatening processes
- e. support improved identification, protection, management and interpretation of sites of natural, historic or Indigenous heritage significance, including on existing sites on the Register of the National Estate such as Finnis Springs Mission and Pastoral Station and the *Eriocaulon carsonii* sites
- f. contribute to meeting the identified research objectives of the Arid Recovery initiative
- g. support research to improve understanding and management of the marine environment in the Upper Spencer Gulf
- h. contribute to capacity building in natural resource and cultural heritage management in Indigenous and other local communities
- i. provide a high degree of certainty that conservation outcomes will be achieved in a timely and transparent way and will be long-lasting
- j. deliver on-ground environmental outcomes that would not otherwise occur, noting that lessees have a general duty under the *Pastoral Land Management and Conservation Act 1989* (SA) to use good land management practices and prevent degradation of land

- k. include timeframes for undertaking activities identified in the plan, funding arrangements, delivery mechanisms and criteria for measuring and evaluating the success of the plan
- l. provide for provision of data in an appropriate format for inclusion in the Department's database, including Shapefiles for all offset areas.

#### **Publication of plans**

83. All plans approved by the Minister under these conditions, including any revised plans, must be published on the Approval Holder's website within 20 business days of approval by the Minister, unless the plans are published within this time on an appropriate South Australian or Northern Territory government website.

#### **Request for variation of plans by proponent**

84. If the Approval Holder wants to act other than in accordance with a plan approved by the Minister under these conditions, the Approval Holder must submit a revised plan for the Minister's approval.
85. If the Minister approves the revised plan, then that plan must be implemented instead of the plan originally approved.
86. Until the Minister has approved the revised plan, the Approval Holder must continue to implement the original plan.

#### **Revisions to plans by the Minister**

87. If the Minister believes that it is necessary or convenient for the better protection of the environment or to repair or mitigate any damage that may or will be, or has been, caused by the action to any matter protected by Part 3 of the EPBC Act for which the approval has effect, the Minister may require the Approval Holder to make, within a period specified by the Minister, revisions to a plan approved under these conditions.
88. If the Minister requires a revision to a plan, the Approval Holder must:
- a. comply with that requirement; and
  - b. submit the revised plan to the Minister for approval within the period specified in the requirement.
89. The Approval Holder must implement the revised plan on approval of the Minister.
90. Until the Minister has approved the revised plan, the Approval Holder must continue to implement the original plan.

#### **Minimum timeframes for consideration of plans**

91. For any plan required to be approved by the Minister under these conditions, the Approval Holder must ensure the Minister is provided at least 20 business days for review and consideration of the plan, unless otherwise agreed in writing between the Approval Holder and the Minister. This does not apply to urgent changes required to protect the environment or to repair or mitigate any damage that may or will be, or has been, caused by the action to any matter protected by Part 3 of the EPBC Act for which the approval has effect.

## **Timeframes**

92. If these conditions require the Approval Holder to provide something by a specified time, a longer period may be specified in writing by the Department.

## **Auditing**

93. At least every five years from the date of Commencement of the Action, or on the request of, and within a period specified by, the Department, the Approval Holder must ensure that:
- a. an independent audit of compliance with these conditions is conducted; and
  - b. an audit report, which addresses the audit criteria to the satisfaction of the Department, is published on the Internet and submitted to the Department.
94. Before the audit begins, the following must be approved by the Department:
- a. the independent auditor; and
  - b. the audit criteria.
95. The audit report must include:
- a. the components of the project being audited;
  - b. the conditions that were activated during the period covered by the audit;
  - c. a compliance/non-compliance table;
  - d. a description of the evidence to support audit findings of compliance or non-compliance;
  - e. recommendations on any non-compliance or other matter to improve compliance;
  - f. a response by the Approval Holder to the recommendations in the report (or, if the Approval Holder does not respond within 20 business days of a request to do so by the auditor, a statement by the auditor to that effect); and
  - g. certification by the independent auditor of the findings of the audit report.
96. The financial cost of the audit will be borne by the Approval Holder.
97. The Approval Holder must:
- a. implement any recommendations in the audit report, as directed in writing by the Department;
  - b. investigate any non-compliance identified in the audit report; and
  - c. if non-compliance is identified in the audit report - take action as soon as practicable to ensure compliance with these conditions.
98. If the audit report identifies any non-compliance with the conditions, within 20 business days after the audit report is submitted to the Department, the Approval Holder must provide written advice to the Department setting out the:
- a. actions taken by the Approval Holder to ensure compliance with these conditions; and
  - b. actions taken to prevent a recurrence of any non-compliance, or implement any other recommendation to improve compliance, identified in the audit report.

Note: To avoid doubt, independent third party auditing may include audit of the Approval Holder's performance against the requirements of any plan required under these conditions.



### **Reporting compliance**

99. Within three months of every anniversary of the action commencing operation, or by a date otherwise agreed by the Minister, the Approval Holder must provide an annual compliance report to the Department addressing compliance with each of the conditions of this approval.
100. The Approval Holder must ensure that the report is publicly available on the internet within 20 business days of it being submitted to the Minister.
101. Reports must be provided until the Minister is satisfied that the closure outcomes in condition 32 (Mine closure) have been met.
102. Where the conditions of this approval require the Approval Holder to submit a plan for the Minister's approval, or undertake a review at regular intervals, the Approval Holder must maintain a register recording:
  - a. the date on which each plan was approved by the Minister
  - b. if a plan has not been approved, the date on which it was, or is expected to be, submitted to the Minister
  - c. the dates on which reports on the outcomes of reviews have been approved by the Minister
  - d. the dates on which the next subsequent reviews are due.
103. The register must be submitted with the annual compliance report, but does not form part of the report.

### **Reporting and remediating non-compliance**

104. The Approval Holder must, when first becoming aware of a non-compliance:
  - a. in relation to Compliance Criteria specified in an approved environmental management and monitoring plan, report the non-compliance to the Department within two business days;
  - b. in relation to any other non-compliance with any of these conditions, report the non-compliance to the Department within 30 business days; and
  - c. report the remedial action within such time as is reasonable in the circumstances, unless required to bring the matter into compliance within a time frame specified in writing by the Department.
105. If the Minister is not satisfied that the Approval Holder is complying with any of these conditions, the Minister may require the Approval Holder to undertake, within a period specified by the Minister, specific measures as determined by the Minister. The measures may include, but are not limited to, requiring further studies, mitigation strategies or offsets; or use of specified technologies. The Approval Holder must comply with any such requirement.

## Record-keeping

106. The Approval Holder must:

- a. maintain accurate records substantiating all activities associated with or relevant to these conditions of approval, including measures taken to implement a plan approved under these conditions; and
- b. make those records available on request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with these conditions.

Note: Audits or summaries of audits carried out under these conditions, or under section 458 of the EPBC Act, may be posted on the Department's website. The results of such audits may also be publicised through the general media.

## Definitions

107. In these conditions, unless otherwise indicated:

**Approval Holder** is the person named in the approval, in accordance with section 133(2)(c) of the *Environment Protection and Biodiversity Conservation Act 1999*.

**ARPANSA** is the Australian Radiation Protection and Nuclear Safety Agency.

**As low as reasonably achievable** has the meaning given in the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing* (ARPANSA 2005, or as amended).

**Balancing Pond** has the meaning described in section 5.5.6 of the *Olympic Dam expansion draft environmental impact statement 2009*.

**Best Practicable Technology** is defined as the use of that technology which produces the maximum environmental benefit that can be reasonably achieved having regard to all matters including:

- a. the environmental standards achieved by uranium operations elsewhere in the world and the extent to which environmental degradation is prevented
- b. the level of environmental protection to be achieved by the application or adoption of the technology and the resources required to apply or adopt the technology so as to achieve the maximum environmental benefit from the available resources
- c. the cost of the technology
- d. evidence of detriment, or lack of detriment, to the environment
- e. the physical location of the Olympic Dam mine
- f. the age of equipment and facilities in use at Olympic Dam and their relative effectiveness in reducing environmental pollution and degradation
- g. the extent to which the technology provides for continuous improvement
- h. social factors including the views of the regional community and possible adverse effects of introducing alternative technology.

**Central Decant Pond** has the meaning described in section 5.5.6 of the *Olympic Dam expansion draft environmental impact statement 2009*.

**Commencement of the Action** is any preparatory works required to be undertaken including clearing vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for buildings or infrastructure.

**Compliance Criteria** are measurable standards or specification of parameters that demonstrate achievement of a required outcome and must be complied with at all times during the period of this approval.

**Department** is the Australian Government department administering the *Environment Protection and Biodiversity Conservation Act 1999*.

**Dose Constraint** has the meaning given in the *Code of Practice for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing* (ARPANSA 2005, or as amended).

**Ecological Values** of a wetland are the values described in the *Directory of important wetlands in Australia*:  
<http://www.environment.gov.au/water/topics/wetlands/database/diwa.html> (or as amended).

**Environmental Values** means the physical characteristics and qualities of the environment that contribute to biodiversity conservation, and the social, spiritual and economic health of individuals and society.

**EPBC Act** means the *Environment Protection and Biodiversity Conservation Act 1999*.

**Evaporation Pond** has the meaning described in section 2.5.1 of the *Olympic Dam expansion draft environmental impact statement 2009*.

**Final Environmental Impact Statement or EIS** means the *Olympic Dam expansion draft environmental impact statement 2009* together with the *Olympic Dam expansion supplementary environmental impact statement 2011* including the appendices.

**Groundwater Simulation Model** means the Stuart Shelf regional groundwater flow model as described in Appendix K6 of the *Olympic Dam expansion draft environmental impact statement 2009* and updated in the *Olympic Dam expansion supplementary environmental impact statement 2011*, and as further updated under these conditions.

**Leading Indicator Criteria** are measurable standards or specification of parameters that give an early warning that a control measure is failing and a required outcome is potentially at risk of not being achieved. Remedial action must be taken in response.

**Listed Species or Ecological Communities** are those species or communities that are listed as threatened or migratory under Commonwealth and/or relevant State or Territory legislation.

**Members of the Public** has the meaning given in *IAEA Safety Glossary – Terminology used in nuclear safety and radiation protection* (International Atomic Energy Agency 2007, or as amended).

**Mining and Processing** means all mining, milling, refining, treatment and processing of minerals.

**Minister** means the minister responsible for administering the *Environment Protection and Biodiversity Conservation Act 1999* and includes an authorised delegate of the Minister.

**Non-human Biota** means plants and animals (other than humans).

**Overburden Removal** is removal of material located above the ore body following stripping of topsoil.

**Reference Level** has the meaning given in *IAEA Safety Glossary – Terminology used in nuclear safety and radiation protection* (International Atomic Energy Agency 2007, or as amended).

**Shapefile** – an ESRI Shapefile, containing '.shp', '.shx' and '.dbf' files and other files capturing attributes including at least the EPBC reference ID number and EPBC protected matters present at the relevant site. Attributes must also be captured in '.xls' format.

**Special Mining Lease** is the area of land which the Approval Holder is exclusively entitled to occupy and mine under the *Roxby Downs (indenture Ratification) Act 1982* (SA).

**Substantial Commencement** in relation to *Schedule 1 – Mining and processing* is defined as the stripping of topsoil from the open pit site and commencement of removal of overburden. In relation to *Schedule 2 – Desalination plant*, substantial commencement is defined as the commencement of tunnelling for the discharge pipe.

**Target Criteria** are measurable standards or specification of parameters that reflect a level of impact that is as low as reasonably achievable or minimised to the lowest reasonable levels for non-human biota. Practices must be reviewed if criteria are exceeded.

108. Any terms used in these conditions, that are not otherwise defined, will have the meaning given to them under the EPBC Act.

109. In these conditions, unless otherwise indicated, headings and notes are for convenient reference only, and do not affect the conditions to which they relate.