



Department of Primary Industries

OUT15/24050

Ms Rose-Anne Hawkeswood
Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

21 SEP 2015

Roseanne.Hawkeswood@planning.nsw.gov.au

Dear Ms Hawkeswood,

Ginkgo Mineral Sands Mine Waste Management Modification (DA 251-09-01)

I refer to your email dated 26 August 2015 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment by DPI Water

DPI Water has reviewed the Environmental Assessment in support of the proposed modification to the Ginkgo Mineral Sands Mine. The following comments are provided to assist in finalising the assessment of the project.

- The proposed waste management modification includes the following:
 - on-site landfill approximately 100m long, 4m deep and 6m wide to dispose of general waste up to 350 tonnes per year,
 - on-site compost system to dispose of paper, cardboard and green waste, and
 - chicken enclosure to dispose of food scraps.
- The proposed on-site compost system and chicken enclosure are considered a low groundwater risk and no further comment is provided on these aspects.
- The on-site landfill is proposed to be designed and operated in consideration of the Draft Environmental Guidelines: Solid waste landfills (EPA 2015) which is considered appropriate. The base of the proposed facility will consist of a liner with a 0.2 m thick compacted sub-base to provide a stable base for the composite liner. Two alternatives are being considered for the composite liner, these are:
 - clay liner with a flexible membrane liner; and
 - geosynthetic clay liner with a flexible membrane liner.

Both of these options provide a low permeability barrier for the prevention of leakage migration and a level equivalent or greater than the EPA (2015) requirement of 1×10^{-9} m/s. This will be overlain by a composite liner protection layer to protect it from the leach collection layer.

- The leachate collection layer will consist of approximately 0.3m of gravel placed over the composite liner protection layer to promote drainage of the leachate. The leachate collection layer is to include polyethylene collection pipes draining to a collection sump to enable pumping out of leachate to a holding dam for disposal via evaporation. The holding dam is also proposed to include a leachate barrier system which is supported.
- The proposed design of the on-site landfill, leachate holding dam and the continued implementation of the Borefield Impact Management Plan ensure that the risk to the groundwater resource is low. DPI Water recommends the following:
 - monitoring of the volume of pumped leachate to identify changes that may indicate leakage from the barrier system and the need for contingency responses.
 - monitoring of the holding dam water level to ensure adequate freeboard for the design rainfall event and removal as required.

For further information please contact Tim Baker, Senior Water Regulation Officer, (Dubbo Office) on 6841 7403 or at tim.baker@dpi.nsw.gov.au.

Comments by DPI Lands

DPI Lands has reviewed the Environmental Assessment and is satisfied with the modifications and rehabilitation measures to be implemented.

For further information please contact Rebecca Johnson, Co-ordinator Client Services, (Newcastle Office) on 4920 5040 or at rebecca.johnson@crowland.nsw.gov.au.

Yours sincerely



Kristian Holz
Director Policy, Legislation and Innovation