



DOC24/121368-15

Central Coast Council  
2 Hely Street, Wyong NSW 2259  
Returned Via Planning Portal

Attention: Ms Alexandra Hafner

Email: alexandra.hafner@centralcoast.nsw.gov.au

19 March 2024

Dear Ms Hafner

**Re: Construction and operation of the South Cell at Woy Woy Waste Management Facility (CNR-65696) - DA/12/2024 - 159 Nagari Rd Woy Woy.**

Thank you for your referral via the Planning Portal inviting the NSW Environment Protection Authority (EPA) to provide advice on the Environmental Impact Statement (EIS) prepared for Central Coast Council regarding the Construction and Operation of the South Cell at Woy Woy Waste Management Facility (WMF), located at Woy Woy, in the Central Coast Local Government Area.

The EPA understands that the proposal involves the construction and operation of a new landfill cell at the WMF to optimise the remaining landfill air space.

The EPA has reviewed the accompanying documents supplied with the application including:

- The Environmental Impact Statement titled *South Cell at Woy Woy Waste Management Facility* dated 13 December 2023 prepared by GHD (2023).
- The report titled *South Cell at Woy Woy Waste Management Facility Technical Report 2 – Leachate Infiltration Modelling and Water Balance* dated 6 December 2023, prepared by GHD (2023).

The EPA has considered the application in accordance with the EPA (2016) Environmental Guidelines for Solid Waste Landfills. 2nd Edition

**Further information required**

The EPA requires further information to adequately assess the application and advises that the following information is required before the EPA can recommend general terms of approval:

1. A design that is compliant with the Environmental Guidelines for Solid Waste Landfills (EPA, 2016) for the steep side liner;
2. Demonstration that landfill gas management has been incorporated at the cell design phase;
3. Determination of the requirement for groundwater management and the inclusion of a groundwater relief system; and
4. A stability assessment of the final landform including all modes of failure should be provided.

Detailed comments are provided in Attachment A.

The EPA is unable to offer further advice until all of the above issues have been addressed and further information has been supplied.

If you have any questions regarding this matter, please contact Genevieve Lorang on (02) 4908 6869 or by e-mail to [info@epa.nsw.gov.au](mailto:info@epa.nsw.gov.au).

Yours sincerely

**Rebecca Akhurst**  
**Unit Head - Operations**

## **Attachment A – EPA Comments South Cell at Woy Woy Waste Management Facility (CNR-65696) - DA/12/2024**

### **1. Potential Impacts – Groundwater**

It is noted that the South Cell “*subgrade (base) has been designed to be above the **current** groundwater level.*” However, the EIS then states that “*A Water Access Licence would be required if dewatering is necessary during periods of above average rainfall. Water use and water supply works approvals would also be required to take water.*” It is not clear that the landfill is being constructed to be always above the groundwater level and that “above average rainfall” would not lead to management measures being required for the groundwater. This should be determined prior to the design to enable groundwater relief measures to be installed.

#### ***Recommendation***

Clarification be provided in relation to the requirement for groundwater management and the inclusion of a groundwater relief system.

### **2. Landfill Gases – Greenhouse gas emissions**

The existing cells have a gas management system installed and this is being run by LMS. The EIS outlines that:

- “The landfill gas extraction system and its operation would be extended to include the South Cell as part of the landfill operations; and
- “landfill gas management would be addressed during operation of the cell and not specifically as part of the design of the cell which is industry practice.”

#### ***Recommendation***

The management of landfill gas is required to be addressed prior to the operational phase to ensure that gas collection is included at the earliest opportunity to address greenhouse gas emissions. It is noted that the design for the gas collection system is included for the piggyback design component of the new South Cell.

### **3. Landfill Cell Design**

The EIS includes options for the base liner, the side wall liner, the steep wall side liner as well as the capping. It is important for the proponent and their consultant to recognise that this is not a concept approval that allows any of the options to be chosen after approval has been granted subject to further review and approval. The EIS must present the design proposed to be implemented and demonstrate that the design meets the minimum standards.

### **4. Steep Side Liner**

The EIS outlines that:

Two options would be used (as both are required due to the varying constraints across the steep areas):

- a) A progressive lining approach: The barrier is constructed in lifts and is designed to be self-supporting for one or more lift heights but requires the placement of waste to ensure stability of the lining system for subsequent lifts (i.e., the lining system is not stable at full, or possible partial height, unless waste is placed against it for support).

This approach would consist of a low permeability geomembrane liner profile consisting of compacted clay / clay rich fill installed in short sections to provide anchorage and overlain with a HDPE geomembrane, with associated protection and slip plane geotextiles.

- b) A self-supporting approach: The lining system is designed to be self-supporting and therefore could be constructed to the full height of the side slope and would be stable in the long-term without waste being present. Consideration would be required on the anchorage system and how the sidewall lining system would be secured particularly on the western batter where the access road is proposed to be omitted.

This approach would consist of a low permeability geomembrane liner profile consisting of a geogrid geotextile geocomposite to provide protection and tensile support to an overlying linear low-density polyethylene (LLDPE) geomembrane liner, with associated protection and slip plane geotextiles.

### **Recommendation**

The proposed design must meet the minimum requirements specified in the Environmental Guidelines for Solid Waste Landfills (EPA, 2016). The design needs to include a clay barrier either 1000mm thick of clay with a permeability of less than  $1 \times 10^{-9} \text{m/s}$  or include a geocomposite clay liner (GCL). Both these clay liners must also be accompanied by a geomembrane liner (either LLDPE or HDPE). The design must be updated to include a compliant liner for the steep wall section of the landfill.

## **5. Capping**

It is noted that “*whilst Option 2 was adopted for the project, it may be subject to future updates as the South Cell approaches capping and rehabilitation.*” Any modified design must meet the minimum requirements outlined in the landfill guidelines in place at the time of any proposed modification.

The final surface of the landfill will be quite steep, and a stability assessment will be required. It is noted that “*The detailed design of the capping would include stability assessment to ensure there are no issues with interface stability between the various layers (including the geosynthetic materials and the soil materials).*”

### **Recommendation**

A stability assessment should be provided for the final landform to ensure that the capping design and final landform is stable. All modes of failure should be assessed.