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Ms Kate Masters
Senior Planning Officer Waste
Department of Planning & Environment
Via e-mail at: kate.masters@planning.nsw.gov.au

03 November 2017

Dear Ms Masters

**Woodlawn Bioreactor – EPL 11436
Response to Submissions – DA 31-02-99 MOD 3 and MP10_0012 (MOD 2)**

Thank you for your invitation to the Environment Protection Authority (EPA) to provide comment on Veolia Environmental Services (Australia) Pty Ltd's Response to Submissions (RTS) on its application to modify the Project Approvals for the Woodlawn Bioreactor to which environment protection licence 11436 (the licence) applies.

The EPA has reviewed the RTS and understands that the Proponent has revised its water and leachate management strategy significantly from what was originally proposed. The new strategy involves constructing a lined coffer dam in the south-eastern section of Evaporation Dam 1 (ED1) for the storage and disposal of treated leachate via natural and mechanical evaporation. The dams comprising Evaporation Dam 3 – North (ED3N) will be also be used for the storage of treated effluent in future after the effluent currently stored in them has been removed and their liners assessed and, if necessary, repaired. Additional coffer dams may also be constructed within the footprint of ED1 should additional storage capacity for treated leachate be required in the future.

The EPA does not object to this revised strategy, subject to the attached comments and recommended conditions of approval.

If you have any questions about this matter, please contact Nick Feneley on 4224 4144.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Matthew Corradin'.

MATTHEW CORRADIN
Unit Head Waste Compliance
Environment Protection Authority

ATTACHMENT 1 – Detailed Comments and Recommended Conditions of Approval

Project Timeframes

It is a condition of the licence that the new leachate management system be operational by 31 December 2017. The EPA understands that this is also currently a condition of the Project Approvals (MP 10_0012 MOD1 and DA 31-02-99 MOD 2).

As noted in my letter dated 1 August 2018, Veolia's commitment to the project and to this deadline was an important consideration in the EPA's decision not to take further regulatory action in response to odour complaints received from the Tarago community during 2016 and we are disappointed to see that the Veolia is now estimating that the new leachate management system is unlikely to be operational until then end of 2018.

The EPA is currently considering a request by Veolia to extend the deadline specified in the licence to 31 December 2018 (see my comments below).

However, the RTS states that the existing lagoons along with ED3SS are expected to have sufficient capacity for storage based on current treatment until September 2018. As such, it is the EPA's view that the new leachate management system and ED1 coffer dam will need to be fully operational by then. Any extension to the project deadlines should not be granted beyond that time based on the information provided to the EPA.

Revised Water Balance

The application included two water balances, both prepared by WSP | Parsons Brinckerhoff. The first was dated 22 July 2016 and was prepared for Veolia to determine whether ED1 and ED2 can provide adequate storage for stormwater and treated leachate over the next 40 years of projected operation. The second water balance was dated 23 December 2016 and was prepared for Heron Resources for the purpose of developing a water management strategy for the proposed Woodlawn Mine. Both water balances acknowledged concurrent operation of the bioreactor and the mine.

Our letter dated 01 August 2017 queried the fact that the original water balance modelled dam levels from 2018 to 2058, whilst the second water balance only modeled dam levels to 2029 (the expected date that mining will cease).

Our letter requested that the Proponent provide additional information to demonstrate that the evaporation dams will not overflow in the period between 2028 and 2058.

The RTS includes a revised water balance prepared by WSP dated 28 September 2017. This revised water balance only covers a period of 10 years (2018 – 2028). It is unclear why this is the case and, again, the EPA request's that the Proponent provide additional information to demonstrate that the evaporation dams will not overflow in the ensuing period to 2058, as previously requested to allow an informed decision to be made.

Dam Liners

The RTS states the following on pages 8 and 17:

"To ensure the integrity of ED1 against leakage prior to the discharge of treated effluent into ED1, Veolia will sub-divide ED1 into separate coffer dams (commencing with the southern regions of ED1) to contain the effluent from the LTP. The HDPE lining specification outlined in the AECOM report will be adopted for any coffer dams to be used to contain treated effluent."

The EPA is agreeable to this approach and the planned lining measures are consistent the expectations outlined in my letter of 1 August 2017.

The above statement is contradicted however on page 36 of the RTS which states that coffer dams will be individually assessed for permeability using in-situ techniques to prove they meet required permeability standards and that HDPE lining may only be considered as an option in the event that permeability criteria are not met.

To avoid any doubt, the EPA recommends that lining of the coffer dams with HDPE be conditioned in the modified project approval, should the application be approved.

Dam Levels

The RTS states that the 150ML coffer dam proposed to be constructed within ED1 should be sufficient to manage treated effluent from the LTP for a 4 year period and that by that time the ED3N dams should be empty and ready to use.

To ensure adequate storage is available at all times, it is recommended that it be a condition of any modified project approval that:

1. ED3N be emptied of effluent from the existing leachate treatment system by 31 December 2022;
2. The volume of mine water stored in the northern portion of ED1 be no more than 10ML by 31 December 2023; and
3. The ED1 coffer dam must not be permitted to exceed 80 per cent capacity until either:
 - a) A new coffer dam had been constructed and is ready to accept treated leachate from the LTP; or
 - b) ED3N has been emptied of partially treated leachate, had its liner assessed and, if necessary, repaired, and is ready to start receiving treated leachate from the LTP.

ED1 and ED2 Integrity Assessment – Ecological Risk Assessment

The EPA notes the Proponent's advice regarding the proposed Ecological Risk Assessment (ERA) pertaining to seepage from ED1 and ED2. The EPA proposes to formalise this work and the timeframes for its completion via new conditions on environment protection licence (EPL) 11436. The EPA will write to the Proponent separately about this matter.

Independent Audit of Leachate and Water Management

Given the importance of the water balance model to the success or otherwise of the Longterm Leachate Management Strategy, it is recommended that the Proponent be required to continually monitor the performance of water and leachate management at the premises and compare this to the assumptions and predictions made in the model. The EPA considers this critically important in identifying any potential deficiencies in the model and detecting any emerging issues at the earliest opportunity.

In this regard, the EPA recommends inclusion of the following condition, should the modification application be approved:

“Within 6 months of commissioning of the LTP, and annually thereafter, unless otherwise agreed to by the Secretary, the Proponent shall commission and pay the full cost of an independent assessment of the leachate and water management system. This audit must be conducted by a suitably qualified, experienced and independent expert whose appointment has been endorsed by the Secretary.

During the audit, this expert must:

1. *Consult with the EPA, Water NSW and the Department*
2. *Assess actual performance against the assumptions and predictions made in the project water balance prepared by WSP dated September 2017. This must include:*
 - a) *Actual versus predicted inputs and outputs into and out of each dam*
 - b) *Actual versus predicted mechanical evaporation from each dam*

- c) *Actual versus predicted rainfall and evaporation*
 - d) *The actual versus predicted volume of water or treated leachate stored in each dam*
3. *Assess actual versus predicted performance of the Leachate Treatment Plant. This must include;*
 - a) *Actual versus target effluent quality*
 - b) *Actual versus target throughput*
 4. *Determine whether the leachate and water management system is achieving its intended objectives.*
 5. *Outline all reasonable and feasible measures that may be required to improve water and leachate management at the site."*