DOC21/1102449

Ms Sheelagh Laguna
Principal Planning Officer
Industry Assessments
Department of Planning, Industry and Environment
Email: sheelagh.laguna@planning.nsw.gov.au

By Electronic Mail
14 January 2022

Dear Ms Laguna

EPA Review of MP06_0139 - MOD 10 – Modification Proposal for Landfill Gas Capture and Treatment Plant - Dial-A-Dump (EC)

I refer to the modification proposal for landfill gas capture and treatment plant No. MP06_0139 - MOD 10 (MOD 10) submitted to the Environment Protection Authority (EPA) by the Department of Planning, Industry and Environment (DPIE) for the landfill located at 1 Kangaroo Avenue, Eastern Creek (Premises).

Background

Environment Protection Licence No. 13426 (Licence) is issued to Dial-A-Dump (EC) Pty Ltd (Licensee) under Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) to carry out schedule activities at the Premises. Bingo Industries Pty Ltd owns the Dial-a-Dump (EC) Pty Ltd entity name and operates the facility.

On 10 September 2021, the EPA issued the Licensee a Variation Notice No. 1612304 (variation notice). The variation notice placed condition on the Licence via a pollution reduction program, which required the Licensee to submit a proposed permanent flare system for the Premises to DPIE by 30 November 2021.

On 3 December 2021, DPIE submitted MOD10 application (MOD 10 application) to the EPA for review and comments within two weeks. The application includes:

- Statement of Environmental Effects - Modification Proposal Gas Collection System & Landfill Gas Flare - Eastern Creek Recycling Ecology Park (SEE) dated 30 November 2021.
- Appendix 1 – Land owner letter of consent.
- Appendix 2 – Site Plans.
- Appendix 3 – Letter to NSW EPA dated 17 November 2021.
- Appendix 4 – Letter top Blacktown City Council.
- Appendix 5 – Ait Quality Impact Assessment and Greenhouse Gas Assessment (AQIA).
- Appendix 6 – Noise Impact Assessment (NIA).
- Appendix 7 – Capital Investment Value Report.

On 23 December 2021, the Licensee provided the EPA a report of Eastern Creek Recycling Ecology Park Community and Stakeholder Engagement Outcomes: Permanent Landfill Gas Capture Project, prepared by WSP Australia, dated 21 December 2021.

Review of the MOD10

The EPA has completed the review of the SEE, AQIA and NIA. The Review is detailed in Attachment A.

If you have any questions or concerns in relation to this matter, please contact Rashad Danoun on (02) 9995 6370.

Yours sincerely

Rob Hogan
A/Director, Regulatory Operations Metro
Attachment: Attachment A - EPA Review of MP06_0139 - MOD 10 – Modification Proposal for landfill gas capture and treatment plant - Dial-A-Dump (EC)

Attachment A
EPA Review of MP06_0139 - MOD 10 – Modification Proposal for landfill gas capture and treatment plant - Dial-A-Dump (EC)

DPIE submitted MOD10 application for landfill gas capture and treatment plant - Dial-A-Dump for the landfill located at located at 1 Kangaroo Avenue, Eastern Creek (Premises) for the EPA's review and comments.

Statement of Environmental Effects (SEE)

The EPA recommends the Licensee ensure the design, installation and operation of the Gas Collection System and Landfill Gas Flare at the Premises complies with all relevant guidelines and legislations, including but not limited to:

- Protection of the Environment Operations (Clean Air) Regulation 2021 (Clean Air Reg).
- Environmental Guidelines – Solid Waste Landfills, Second edition, 2016.

Air Quality Impact Assessment

The EPA reviewed:

- Air Quality Impacts Assessment and Greenhouse Gas Assessment, Landfill Gas Collection Network and Flares – Eastern Creek Landfill, *prepared by Northstar Air Quality Pty., Ltd., dated 30 November 2021* (The AQIA).

The following is a summary of the key information provided:

- The proposed development modification seeks to install 2 permanent enclosed flares, with a combined treatment capacity of 3,000 standard cubic metres per hour (Sm^3.hr).
- The aggregated treatment capacity of the existing temporary flares is 2,000 (Sm^3.hr).
- The design parameters for each flare include:
    - Destruction efficiency of 98 %.
    - Residence time of 1.55 seconds
    - Combustion temperature of 900 Celsius.
- Information provided by the flare contractor indicates that the gas collection efficiency is likely to be up to 85 % over the life of the project.
- Twelve (12) additional gas collection wells are anticipated to be installed before the end of February 2022, adding to the existing 31 wells currently installed on the Site.
- The engagement outcomes report indicates that the community are still experiencing odour impacts. This is also supported by information provided in the AQIA, which states *"…two odour complaints relating to the Premises were received by NSW EPA in each of September and October 2021."*
- It is indicated that the proposal provides an opportunity for future expansion to providing energy via a cogeneration system using landfill gas.

The EPA comments and recommendations:

1. It is indicated that the landfill gas collection system would be capable of achieving an efficiency of up-to 85%. However, there is no detailed information nor discussion to support this assumption.

Failing to achieve in practice the expected gas collection efficiency would result in potential for increased fugitive gas emissions. As such, the proponent should commit to the implementation of a rigorous and ongoing evaluation program of landfill gas surface emissions and gas collection efficiency.

2. There is uncertainty regarding some of the assumptions made in the AQIA.

Surface emissions from the landfill:

The H_2S emission rate used in the AQIA is not based on site-specific data. Adding uncertainty to the results and conclusions in the AQIA.

Whilst surface monitoring is a currently undertaken at the site, Northstar claim that sufficient data was not available to allow a full characterisation of the potential emissions. Therefore, proxy data from a 2007 study (an average surface flux of 1.17 $mg \cdot m^{-2} \cdot day^{-1}$) has been used in the AQIA. However, the report has not provided any assessment of the onsite collected data against the proxy. It is not known if the assumed emission rate is reasonably reflective of actual surface H_2S emissions at the site.

Hydrogen Sulfide (H_2S) Flare Emission Rates**:**

Flare emissions rates for this pollutant are based on an inflow rate concentrations of 967 ppm. However, there is no detailed information to support or justify the adopted inflow concentration. It has not been established if this concentration is representative of typical inflow concentrations, and peak emission rates.

Sulfur Dioxide (SO_2):

Emissions rates for this pollutant are estimated based on the measured H_2S concentrations. As mentioned before, there is uncertainty regarding the adopted H_2S concentration.

EPA Heads of Considerations:

In providing this advice, The EPA has considered the following**:**

- The AQIA has been undertaken in general accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.
- Cumulative impacts (project contributions and background levels) are predicted to be below the NSW EPA criteria. As such, there are no predicted additional exceedances.
- The nominated design parameters for the flare, including temperature, destruction efficiency and residence time meet the design requirements specified under the Clean Air Regulation (2021).
- It is noted that the proposal will result in an increased landfill gas destruction capacity from 2,000 to 3,000 $Sm^3.hr$. Further, increasing the system gas collection efficiency will likely decrease surface emissions from the landfill from current levels.
- Whilst there is uncertainty regarding some of the assumptions and input data used in the AQIA, it is noted that the proposal has been identified as a priority to minimise air quality impacts on nearby receptors due to the existing operations and site configuration.
- The remaining uncertainty can be addressed via conditions of approval.

EPA Recommendations:

1. Should the modification be approved, the following conditions of approval be included:
    - The flare/s must be designed and operated to achieve a minimum combustion temperature of 760 deg C, and a minimum residence time of 0.6 seconds.
    - The flare must be operated in such a way that a flame is present at all times while air impurities are required to be treated.

2. Within three months from the commissioning of the permanent flares, the licensee must undertake an Evaluation study. The study must be completed by a suitable qualified and experienced consultant/s and include, as a minimum:
    a. The evaluation of the effectiveness of the permanent flares and gas extraction system at minimising surface landfill gas emissions from the premises
    b. Quantification of H_2S emission rates (surface flux) from landfill surfaces.

Review Noise Impact Assessment

Based on the information provided in the Noise Impact Assessment Reference (RWDI # 2200609) dated 27 November 2021 (NIA), it appears that the addition of the permanent gas flares will not add significantly to the total noise emission from Premises. The NIA predicts that it won't change the total noise emission from the Premises at the receiver locations listed in the existing noise limits of the Licence.

However, the NIA only predicted noise levels at receivers specifically mentioned in the noise limits in Minchinbury (1-6 Eber Place). For future applications, the EPA recommends that the Licensee consider additional noise monitoring points in Minchinbury.