

8 July 2022

Chair – Independent Planning Commission
Professor Alice Clark
C/- Brad James, Principal Case Manager
Suite 15.02 Level 15 135 King Street
Sydney NSW 2001

Dear Professor Clark,

RE: MOUNT PLEASANT OPTIMISATION PROJECT – SUPPLEMENTARY RESPONSE TO THE IPC

The Independent Planning Commissions' (IPCs') letter dated 20 June 2022 requested further information regarding the target coal seams and associated gas contents of the Mount Pleasant Optimisation Project (the Project) as well as other matters.

MACH Energy Pt Ltd (MACH) provided responses to these matters via letter on 28 June 2022. The IPC subsequently asked MACH three supplementary questions regarding Figure 4 of that response which illustrated conceptually the spatial distribution of gas within the Project pit shell. MACH's responses to these questions are provided below.

In the letter dated 1 July 2022, the IPC stated:

Figure 4 in your response provides a conceptual cross section illustrating gas content distribution at the Project site. With reference to this figure:

- 1) *Approximately how much of the coal to be mined is associated with seams that are included in the pink (1 to 3m³/t) and yellow (3 to 4m³/t) shaded zones?*

With reference to Figure 4 from our letter dated 28 June 2022, the approximate amounts of Project run-of-mine (ROM) coal within each zone have been estimated as follows (Coalbed, *pers comms*):

- Approximately 217 Mt has an estimated average gas content of less than 1 cubic metre per tonne (m³/t).
- Approximately 182 Mt has an estimated average gas content between 1 and 3 m³/t.
- Approximately 7 Mt has an estimated average gas content between 3 and 4 m³/t.

In the letter dated 1 July 2022, the IPC stated:

- 2) *In which year in the provisional mine plan will the surface above the pink and yellow zones first be disturbed?*

The existing approved Mount Pleasant Operation has already commenced surface disturbance above the zone where the average gas content is estimated to be between 1 and 3 m³/t.

It is expected that the Project would first disturb the surface above the zone with a gas content above 3 m³/t in approximately 2034.

In the letter dated 1 July 2022, the IPC stated:

- 3) *Is it possible to give an order of magnitude permeability figure for the thicker seams contained in the pink and yellow zones?*

The Mount Pleasant Operation coal seams have relatively low gas content and accordingly, no permeability testing directly relevant to coal gas production has been undertaken at the Mount Pleasant Operation to date. However, there is a relationship between groundwater hydraulic conductivity and permeability.

The Project Groundwater Assessment (AGE, 2020) presents groundwater hydraulic property data that has been collected within the Project areas and from surrounding mining operations. This hydraulic conductivity data is summarised on Chart 1 below.

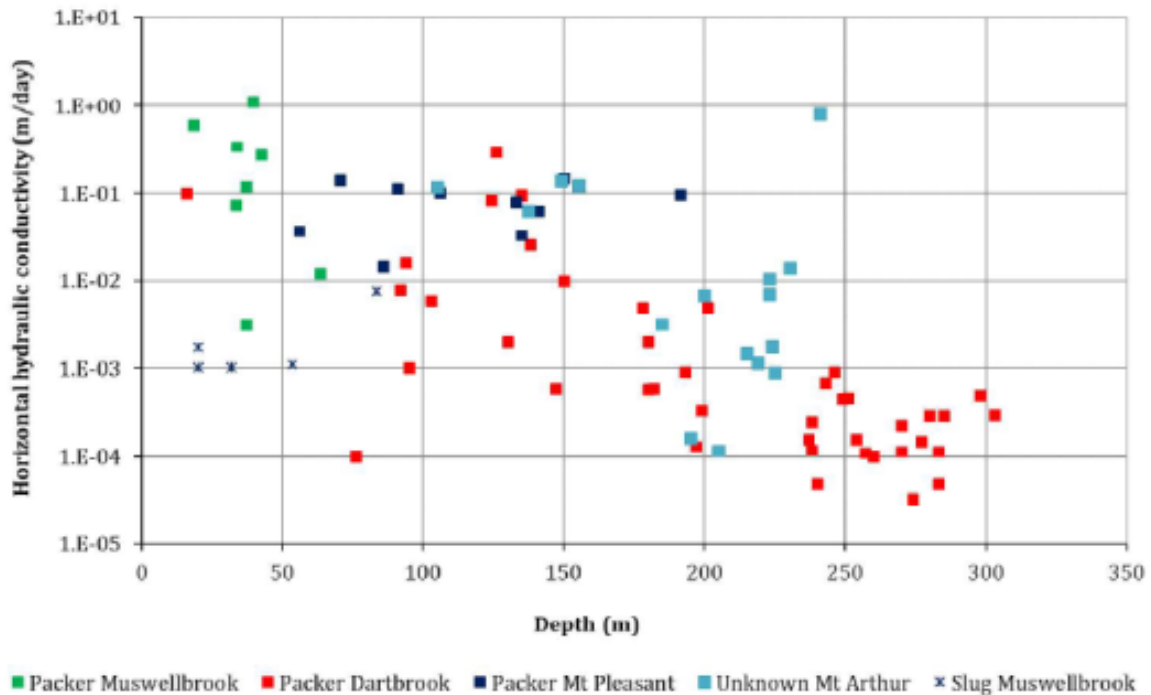


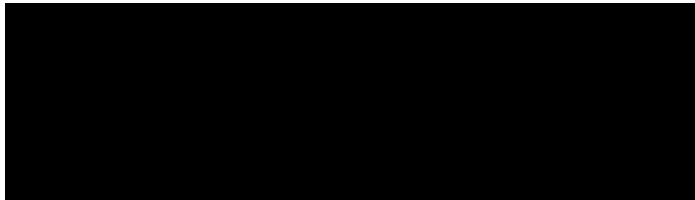
Chart 1: Groundwater Hydraulic Property Data vs. Depth

Source: AGE, 2020

The chart above demonstrates that hydraulic conductivity in the coal seams declines with depth as overburden pressure increases, with relatively low hydraulic conductivities coinciding with the deeper areas with locally higher gas content. Whilst gas permeabilities are expected to be higher than the measured hydraulic conductivity, they would be anticipated to have a similar trend, with the deeper coal seams expected to have lower permeability.

If you require any further information on the matters discussed above, please contact the undersigned.

Yours sincerely,



Chris Lauritzen
General Manager Resources Development
Mount Pleasant Operation