OCEANAGOLD (NEW ZEALAND) LIMITED

WAIHI NORTH PROJECT

Groundwater Modelling: Predictive Uncertainty Quantification

Groundwater Modelling Evidence of Kevin Hayley Regarding Technical Assessment of Groundwater Effects and Proposed Conditions

INTRODUCTION

My name is Kevin Hayley

My role in relation to the Waihi North Project ("**WNP**") has been to provide expert advice in relation to Groundwater Modelling Uncertainty Quantification. I Contributed to the *Groundwater Modelling for the OGC Waihi Project: Predictive Uncertainty Quantification* report which is provided within *Part H – Supporting Technical Assessments* of the application.

This evidence has been prepared to accompany the application by Oceana Gold (New Zealand) Limited ("**OGNZL**") for approvals required for the WNP under the Fast-track Approvals Act 2024 ("**FTAA**"). It has been prepared on the understanding that the process for determining applications under the FTAA does not require a hearing to be held, and accordingly the purpose of this evidence is to confirm that, relative to my area of expertise the Groundwater Modelling for the OGC Waihi Project: Predictive Uncertainty Quantification provides an appropriate description of the relevant environment, the proposed activities comprising the effects of the WNP on that environment, and the way those effects are proposed to be managed.

My findings are set out in full in the Groundwater Modelling for the OGC Waihi Project: Predictive Uncertainty Quantification included within *Part H – Supporting Technical Assessments* of the application.

While this application is not being considered by the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing this evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

QUALIFICATIONS AND EXPERIENCE

I am a consulting Groundwater Modeller and Geophysicist, with over 20 years' experience in numerical groundwater flow, transport modelling and geophysical methods.

My groundwater modelling experience includes applied modelling studies in North America, Australia, New Zealand and Asia with the development of efficient cloud computing based methods for model calibration and predictive uncertainty analysis. I am currently employed

as Principal Groundwater Modeller and Director of Groundwater Solutions pty Ltd. based in Victoria Australia, and have held that position since 2013.

My previous work experience includes Consulting Groundwater Modelling and Geophysics work in Calgary Alberta, Canada, Research at University of Calgary (PhD), and Mineral Exploration Geophysics work throughout western Canada and Alaska.

In providing this evidence in relation to Groundwater Modelling Uncertainty Quantification I have considered the following matters as relevant to that topic:

(a) The project description provided by OGNZL as set out in Section 2 of the Substantive Application prepared by Mitchell Daysh Limited;
(b) The description of the existing environment, the effects of the WNP on that environment and their significance, and the proposals to manage those effects all as set out in the assessment of environmental effects accompanying the application;
(c) The technical assessments of FloSolutions 2023 that involved the original Numerical Groundwater modelling that this uncertainty analysis builds upon.

CONFIRMATION OF CONTENTS OF REPORT AND PROPOSED CONDITIONS

I confirm that in my opinion the *Groundwater Modelling for the OGC Waihi Project: Predictive Uncertainty Quantification* contains an accurate and appropriate description of the environment, the actual and potential effects of the WNP, and the recommended actions to manage those effects within my area of expertise.

I confirm that in my opinion the contents of the *Groundwater Modelling for the OGC Waihi Project: Predictive Uncertainty Quantification* may be relied on in making a decision on the approvals sought for the WNP, and confirm that provided effects within my area of expertise are managed as proposed in the application those effects will not be unacceptable and will be managed to a standard that I consider meets good practice.

I confirm that I have reviewed the conditions that OGNZL proposes for the various approvals being sought as they relate to my area of expertise. I confirm that in my opinion those proposed conditions are appropriate.

Kevin Hayley
Dated this 6th day of February 2025