

Before the Waikato Regional
and Hauraki District Councils

Under the Resource Management Act 1991 (**RMA**)

In the matter of An application for resource consents to extend the Waihi Gold Mine via underground and open pit mining methods known as Project Martha

By **Oceana Gold (New Zealand) Limited**
Applicant

Statement of evidence of Rodney Edward Clough for Oceana Gold (New Zealand) Limited

26 Oct 2018

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Qualifications and experience

- 1 My name is Rodney Edward Clough.
- 2 I am a consulting archaeologist and director of Clough & Associates Limited.
- 3 I have the following qualifications, professional affiliations and experience:
 - a. I hold a Doctorate in Archaeology from the University of London and a Master of Arts in Anthropology from the University of Auckland;
 - b. I am a member of the New Zealand Archaeological Association, and served on its Council for several years, including as President (2009-2011);
 - c. I am a member of Heritage New Zealand Pouhere Taonga ("**Heritage NZ**") and the International Committee on Monuments and Sites);
 - d. I have over 40 years of experience in the field of archaeology including research, survey, investigation, analysis and report preparation, covering a variety of time periods and geographic locations, and over the last 20 years have largely focussed on New Zealand archaeology;
 - e. I lectured in archaeology at the University of Auckland for several years prior to establishing my consultancy (1987-1994), and have continued to carry out joint research projects with the University; and
 - f. My practice carries out a range of work relating to cultural heritage management, in particular archaeological assessments relating to the Resource Management Act 1991 ("**RMA**") and Heritage New Zealand Pouhere Taonga Act 2014 ("**HNZPTA**") requirements, conservation and management plans, survey and inventory, and mitigation investigations. This work has included numerous surveys and heritage assessments throughout the North and South Islands.
- 4 I have been involved with Waihi mining heritage since 2004 (then for Newmont Waihi Gold) when Newmont commissioned Clough and Associates to prepare a detailed heritage assessment of the historic remains of the Waihi Battery on Union Hill. Subsequently, I have provided heritage assessments with regards to the Trio Vent Shaft works and prepared a Heritage Management Plan for Union Hill, along with providing heritage advice for a number of other projects.
- 5 The current owners, Oceana Gold (New Zealand) Limited (**OGNZL**) commissioned Clough and Associates to undertake the current assessment for Project Martha.
- 6 In preparing this evidence I have reviewed:
 - (a) The parts of the section 42A report relevant to my area of expertise.
 - (b) Submissions relevant to my area of expertise.

- 7 I confirm that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of evidence

- 8 I have been asked by OGNZL to prepare evidence on the potential effects of Project Martha on historic heritage (i.e. archaeological and other historic heritage values), as well as the measures being adopted to address potential effects. This includes:
- (a) General historical background and archaeological features and values of the project area.
 - (b) Recorded historic heritage within or near the project area.
 - (c) An assessment of the significance of the recorded sites within the Project Area and the effects of Project Martha on historic heritage and archaeological values.
 - (d) Proposed management and mitigation of effects.
 - (e) Response to submissions.
 - (f) Response to the Section 42A Report Conclusions.
- 9 My evidence does not include an assessment of effects on Maori cultural values.
- 10 I confirm that my evidence relates to the proposal known as Project Martha as described in Chapter 3 of the Assessment of Environmental Effects dated 25 May 2018 (**AEE**).

I confirm that I am a co-author of a report dated May 2018 entitled Oceana Gold Project Martha, Waihi, dated May 2018. The other authors are my colleagues Adina Brown and Zarah Burnett. The report is in two parts – Part 1 Historical and Archaeological Background 2018 and Part 2 Historic Heritage Assessment, involving the identification of historic heritage places impacted by Project Martha; potential positive and adverse effects; and mitigation of effects on historic heritage values within the project area. The report is attached as Appendix K to the AEE.

Executive summary

- 11 Detailed historical and archaeological research and archaeological field surveys were carried out to assess the potential effects of the proposed Project Martha on historic heritage values.
- 12 Based on the research and assessment, two archaeological sites were recorded within the Project Area that will be affected by the proposal. These are: a probable pre-1900 villa at 12 Cambridge Road (recorded as T13/928) and the historical mine workings below ground at the Martha Pit (recorded as T13/926).
- 13 The sites were assessed under the Heritage NZ criteria for assessing archaeological value and the criteria for evaluating historic heritage in the Hauraki District Plan, and I consider them to be of moderate archaeological and historic heritage value.
- 14 There is potential for the proposed Martha Pit expansion to impact on some of the historical mine workings. In addition, the proposed road realignment will require the relocation of the villa at 12 Cambridge Road, and there is potential for subsurface remains associated with the house to be impacted.
- 15 There is also some potential for mine extension works to affect unidentified archaeological features relating to mining activities closer to the surface, and for the road realignment works to affect unidentified subsurface remains of pre-1900 domestic activities within the properties at 77 Bulltown Road and 85 William Street. However, any previously unidentified remains are unlikely to be extensive.
- 16 Any adverse effects can be appropriately mitigated through archaeological investigation and recording to recover information relating to the history of the mine and township, under the archaeological provisions of the Heritage New Zealand Pouhere Taonga Act 2014.
- 17 Subject to the proposed management and mitigation measures, I consider that the potential effects on archaeology and historic heritage are minor.
- 18 The Historical background (Part 1) Report provides a detailed historical background covering both Maori settlement up to the 19th century and European settlement and goldmining and development of the town of Waihi from the mid-19th century.
- 19 In the past the inland area of Waihi formed part of the Ohinemuri District and its rich resources attracted Maori to the area. Maori occupation can be traced back over centuries; evidenced by the numerous archaeological sites (namely middens, pits, terraces, and pa) and associated place names throughout the district. Several

different iwi and hapu groups claim affiliation with the land, whose tribal territories commonly changed in response to warfare, migration or intermarriage.

- 20 The quartz outcrops in the Waihi area drew European explorers and prospectors to the region during the 19th century, long before Ohinemuri was officially declared a goldfield. The earliest recorded discovery of gold was in 1868 and the first successful prospecting for payable gold in Waihi Township was 10 years later (in 1878) on the cone of Pukewa (later known as Martha Hill). Early prospecting licences (between the 1860s and 1892) were initially held by small syndicates, which, by November 1881, included the Waihi Goldmining Company and the Martha Company. Parliamentary Papers dated 1880 noted a dozen recorded claims. However, despite the growing numbers of claims in the Waihi area, yields remained low and profit margins tight. The nature of the terrain (i.e. quartz reefs) required significant investment in heavy equipment for processing, a cost beyond the reach of most small companies. Faced with reduced production and poor results the Martha, Young Colonial and Waihi claims were amalgamated under the Martha Extended Company in 1883. Yet by 1890 the Martha Extended Company was also facing insolvency. The Union Gold Mining Company ceased operations in 1887.
- 21 Cycles of boom and decline followed throughout the 20th century. It was during a boom period (1902-1910) that the Cornish pump was installed at the No. 5 Shaft (1904). Mining was closely linked to the growth of the town, but the later history of Waihi township is closely associated with other industries such as the Akrad Radio Corporation and PYE (N.Z.) Ltd, and more recently with tourism relating to its mining history.

Archaeological background

- 22 There have been a number of previous archaeological surveys of the general area. Our Part 1 report (PP71-84) provides a detailed summary of archaeological investigations within the project area and nearby.
- 23 It is noted that despite previous research in the general area there is little recorded by way of pre-European archaeological sites in the vicinity of Cambridge Road, Bulltown Road and William Street. This could be because of gaps in knowledge, or more likely because such sites have already been destroyed by the European mining industry in Waihi, which has now removed most of Martha (Pukewa) Hill, just as later 20th century mining has removed much of the earlier mining evidence (see Figure 22 of the Part 2 report depicting the location of earlier remains once within the project area).
- 24 However, archaeological remains of the mining industry are extensive.

Recorded historic heritage within or near the project area

- 25 There are no scheduled heritage features, items or areas in the Hauraki District Plan (2014) within the area affected by Project Martha. The Martha Mine No.5 Shaft Pumphouse (ref 001) which is no longer in its original location is the closest. The closest in situ scheduled historic heritage sites are the Category B PYE Building (DP ref 091) to the south at Moresby Avenue and St John's Church (ref 006); remains of the Grand Junction Battery, Power House and Refinery (ref 074), and some miners' cottages (052, 053, 054) are also near the southern extents of the current Martha Pit. However, none are within close proximity to the proposed mining activities and they will not be affected.
- 26 There are also no places listed on the New Zealand Heritage List / Rārangī Kōrero within the area affected by Project Martha. The relocated Martha Mine No.5 Pumphouse is the closest Heritage NZ listed property (NZ Heritage List ref. 134, Category 1), on the other side of the existing Martha Pit, and is not affected by the proposed mining activities.
- 27 Prior to our assessment there had been no archaeological sites recorded within the project area. To the east of Bulltown Road, a small portion of the Grand Junction Mine Quarry had been recorded as an archaeological site (T13/315) (Part 2 Report, Figure 21). It was described as a group of pits and tunnels in the northeast corner of the Martha Pit, which is not within the project area. Also, to the east of Bulltown Road, the routes of the historical high-level water race and the Bulltown timber trackway were noted on the GIS viewer of the Ohinemuri regional history website¹
- 28 As a result of our assessment a possible pre-1900 villa at 12 Cambridge Road was recorded as an archaeological site on the NZAA ArchSite database, as site T13/928. In addition, the below ground Martha Pit historical workings (Part 2 Report, Figure 23) were recorded as archaeological site T13/926. These historical workings comprise an extensive complex of 19th and early 20th century drives, shafts, tailings and a network of tunnels. The historical Martha Mine generally occupied the area between Bulltown Road in the north and Moresby Ave in the south, with Grey Street and Seddon Street to the east and Savage Road to the west. Table 4 of the Part 2 Report summarises the recorded historic heritage sites within the project area. 12 Cambridge Road (T13/928) and the relict underground features of the Martha Mine (T13/926) are the only recorded historic heritage sites within the project area, having been recorded as a result of investigations for this project.

¹ (www.ohinemuri.org.nz; Part 2 Report, Figure 22)

- 29 In the vicinity of the Martha Pit, but unaffected by the proposal, are the following Hauraki District Plan scheduled heritage items, places on the New Zealand Heritage List / Rārangī Kōrero and recorded archaeological sites:
- (a) Martha Mine No5. Pumphouse relocated in 2007 (recorded archaeological site T13/301, Heritage NZ listed 134, Cat 1 and scheduled HDP 001, Cat A);
 - (b) Waihi Poppet Head replica at Junction with Gilmour Road and Seddon Street (HDP 449, Cat C);
 - (c) Grand Junction boiler feeder dam (HDP 255, Cat C);
 - (d) Grand Junction mine refinery building and strong room (T13/314; HDP 074, Cat B), as well as truck and girth gear;
 - (e) Grand Junction powerhouse and boiler house (T13/313; HDP 074, Cat B);
 - (f) 3 Haszard Street scheduled Miner's cottage (former) (HDP 123, Cat C);
 - (g) 1 Martha Street PYE factory (used as a laboratory for PYE radios and television) and currently the OGNZL Waihi office (HDP 091, Cat B);
 - (h) Waihi Gold Mining Company Tramways Martha to Victoria Battery ore tramway (HDP 264, Cat C).
 - (i) Remains of relocated concrete transformer house fragment opposite the Rugby club on the Rim walkway (T13/302); and,
 - (j) Grand Junction Mine Quarry (T13/315).

Assessment of the significance of the recorded sites within the project area

- 30 The two identified archaeological sites were assessed in the Part 2 Report (pp. 43-49) under both the Heritage NZ criteria for assessing archaeological value and the criteria for evaluating historic heritage in the Hauraki District Plan.

The Historic Martha Mine T13/926

- 31 Overall, I consider site T13/926 (Martha Mine) to have moderate archaeological value based on these criteria. It is likely that archaeological evidence of mining activity survives in places, but that much of the pre-1900 workings has now been destroyed by the change to open-pit mining activities and previous flooding of the underground workings. Any possible surviving remains would be of archaeological interest for their ability to provide information on mining techniques in the 19th century. However, I note that such techniques are also very well documented historically, so that archaeological investigation would typically confirm this documented history, rather than provide new information.

- 32 The old Martha Mine underground workings have moderate to high historic heritage value. Any surviving historical workings have strong contextual values in relation to the development of the Waihi Gold Mine and Waihi Town. The discovery of gold at Martha Hill in 1878, early on in the New Zealand goldmining industry, is significant. The Martha Mine went on to be the largest and most profitable goldmine in New Zealand. However, the extent to which the underground workings reflect these historical aspects, past events and associations with important people/companies, is probably limited by the inaccessible nature of the site and fragmentary survival of the remains themselves.

The Cambridge Rd Villa (T13/928)

- 33 Overall, I consider T13/928 to have moderate historic heritage / archaeological value based on the criteria discussed in the Part 2 Report. Although villas are relatively common site types nationally and regionally, locally they are representative of the early development of Waihi as a township and together they form a group of places representing this theme. The villa has potential to provide information on early inhabitants of the town through archaeological study of the building, associated subsurface features or artefacts that may be present. When compared to other places already included in the Hauraki District Plan heritage inventory, and without further information as to historical associations, the villa might be equivalent to a Category C item but is unlikely to reach the threshold for higher categories.

Assessment of effects on archaeological and historic heritage values

The Martha Pit

- 34 Today the Martha Mine is an open pit; however, historically most of the mining was underground. The above ground works for the Phase 4 Cutback will involve limited lateral expansion of the existing pit rim on the north wall and cutting down in this area to stabilise the slope and mine the ore. No above ground historic heritage sites were identified during the site visit to be affected by the pit expansion. The underground workings of the Martha Mine were not physically inspected for reasons of accessibility and health and safety.
- 35 The Martha Underground Mine will not affect any properties at the surface. In the area of the Martha Underground Mine there are previously unmined ore blocks, as well as remnant mining blocks from the old Martha Mine under the existing pit, comprising either backfilled stopes or skins on unfilled voids. The Martha Underground Mine involves the extraction of ore from both the virgin stopes and the remnant stopes (remnant ore skins and historical backfill) from under the existing Martha Pit and land to the south east.

- 36 There was thought to be a possibility of encountering underground archaeological remains associated with the old Martha Mine workings (T13/926) as part of the Martha Underground Mine, so further research and modelling was carried out by C. Buxton-Blue, Resource Development Geologist, OGNZL to determine the likely extent of pre-1900 underground workings.
- 37 According to Buxton-Blue's analysis, the majority of the pre-1900 historical workings have already been taken out by the current pit. The Martha Underground Mine will not intersect the pre-1900 historic workings and therefore is not likely to affect pre-1900 historical workings. However, there will be some interaction as part of the Phase 4 Cutback where further cutting back of the pit edge will further impact on historical mining levels that have already been intersected on the current pit walls, although this largely relates to one historic level which has been largely destroyed at the existing north wall.

Residential Properties

- 38 Detailed historic research was carried out on three residential properties (with early beginnings) that were thought likely to be affected by redesign of the road network adjacent to the Martha Pit: 12 Cambridge Road (dwelling c.1900), 77 Bulltown Road (c.1902, but dwelling moved or demolished) and 85 William Street (c.1900, but now moved or demolished).
- 39 Of these properties, only 85 William Street falls entirely within the area affected by the Phase 4 Cutback. The standing structures on 85 William Street appear to be of late 20th century date and not likely to have any historic heritage value. However, there may be associated archaeological remains relating to the turn of the century (c.1900), although this potential is considered to be low.
- 40 The other two residential properties – 12 Cambridge Road (c.1900) recorded as archaeological site T13/928 and 77 Bulltown Road – will be affected by the road realignment required for the Phase 4 Cutback. Of the two, only 12 Cambridge Rd has any significant heritage values. The road itself has long since lost its heritage character with 2 Cambridge Road containing the only other historical house on the street.
- 41 The intention is to relocate the house at 12 Cambridge Road rather than demolish it, which will retain the heritage values of the house itself, but there may be associated subsurface remains which could be affected by the road realignment, and which have the potential to contribute to our understanding of the property and early township.

Unidentified Sites

- 42 Other, so far unidentified, subsurface or near surface features relating to mining activities are likely to be present within areas of undergrowth or topsoil and may be exposed as part of Project Martha. However, as most of the significant sites and features within the project area have already been identified, any such remains are unlikely to be extensive or to make more than a moderate contribution to our overall understanding of the mine and its historic operation.
- 43 Similarly, any subsurface remains associated with 19th century domestic activities within the properties identified (77 Bulltown Road and 85 William Street) are unlikely to be extensive but could contribute moderately to our understanding of the development of Waihi town/ settlement.

Summary Assessment of Effects on Archaeological and Historic Heritage Values

- 44 The historical research and site survey established that Project Martha will impact on the following recorded historic heritage places:
- (a) Possible pre-1900 dwelling identified at 12 Cambridge Road (Lot 1 DP 88853, part of Section 279 (previously Section 101) BLK XV Ohinemuri SD); and,
 - (b) Underground historical workings from the original Martha and Grand Junction Mines (T13/926); and
 - (c) Possible destruction or modification of unrecorded 19th century subsurface archaeological remains relating to settlement/domestic dwellings and mining activities arising from land disturbance.

Proposed management and mitigation of effects

- 45 As no scheduled historic heritage places will be affected, and an authority will be required for the modification of archaeological sites under the Heritage New Zealand Pouhere Taonga Act 2014, the detailed mitigation of effects on archaeology can be appropriately managed and mitigated under the archaeological provisions of that Act.
- 46 The following management and mitigation measures are proposed (and these have been accepted by OGNZL):
- (a) Any consent granted should, as a condition of resource consent, include accidental discovery protocols and an advice note advising OGNZL of its obligations under the Heritage New Zealand Pouhere Taonga Act 2014 with regards to archaeology. The condition should no longer apply once an authority from Heritage NZ is in place;

- (b) Since the proposal may involve the destruction of archaeological remains associated with a pre-1900 building at 12 Cambridge Road, and destruction of 19th century underground mining workings, an authority must be applied for under Section 44(a) of the HNZPTA (and granted by Heritage NZ prior to the start of any works that will affect them). This is a legal requirement that sits outside the RMA;
- (c) The building at 12 Cambridge Road should be relocated within Waihi Township rather than demolished to retain its historic heritage values (if it were to be demolished detailed investigation and recording would be required under the conditions of the Authority).
- (d) The conditions of the Authority should include investigation and recording of any pre-1900 archaeological remains affected by project works, which will aid our understanding of early mining activities at Martha and residential settlement within Waihi Township. This excludes the old pre-1900 workings which will be largely inaccessible,
- (e) The conditions of the Authority should include remote investigation and research using modern survey techniques to recover information about the underground mining workings.
- (f) The Authority should include all earthworks within the MP4 area as a precaution so that potential delays can be avoided should other sites be exposed.
- (g) Detailed recommendations for archaeological investigation and recording should be set out in the Archaeological Management Plan (AMP) that will accompany an application for an Authority to modify an archaeological site.
- (h) Permanent or temporary interpretative material, which is visible to the public, and explains the history of the Waihi Mine if access is limited to the pit rim walk during works, should be provided.
- (i) Information on the history of the site and any outcomes from the archaeological investigations should be made available to the public, including on the Oceana Gold website

47 Provided these measures are adopted, I consider the adverse effects of Project Martha on historic heritage to be minor.

Response to submissions

48 The two submissions relating to historic heritage are by Heritage NZ and Waihi Heritage Vision. Both are neutral submissions which seek to ensure that appropriate heritage management procedures are in place.

- 49 The Heritage NZ submission notes that the archaeological assessment appropriately identifies and addresses potential effects on recorded and unrecorded archaeology, and that OGNZL has undertaken to apply for an Authority under the Heritage New Zealand Pouhere Taonga Act 2014 in relation to the proposed works. The submission seeks an Accidental Discovery condition applying to any areas not covered by the Authority, a condition requiring relocation of the heritage villa at 12 Cambridge Road to a suitable location in Waihi, and an advice note regarding the provisions of the Heritage New Zealand Pouhere Taonga Act 2014. I support all these requests.
- 50 I note that Waihi Heritage Vision has requested in its submission that a video/survey record of the miners' cottages is completed prior to any underground mining commencing. I understand that the OGNZL will be offering the owners of these properties a pre-condition survey which I consider appropriate. Response to section 42A report
- 51 The Officers Report concludes (16.5.4, 16.9) that the adverse effects on the environment would be less than minor. With respect to heritage the report notes (16.5.3, p.56) that there are no scheduled Heritage Features or Items within the application area, and acknowledges the submissions from Heritage NZ and Waihi Heritage Vision regarding the need for appropriate heritage management procedures to be put in place. The report considers that the recommended conditions, along with the advice note requested by Heritage NZ, should satisfy both submissions. The Condition 115 in Appendix 8 requires laser scanning to identify the extent of old mine workings.
- 52 Condition 114 of the HDC Officers Report includes a requirement to maintain a photographic record of any pre-1900 workings encountered as part of mining activities authorised by the consent. In my view, the word 'representative' should be inserted i.e. 'The consent holder shall maintain a representative photographic record....' This is on the basis that photography of all of these workings is not required from an archaeological perspective and that investigations and recording under Heritage NZ authorities are usually based on representative sampling.
- 53 I am aware that Mr Burton (S42 Officer for HDC) has proposed an Accidental Discovery Protocol, as well as an advice note regarding archaeological requirements under the Heritage New Zealand Pouhere Taonga Act 2014.
- 54 I support the Accidental Discovery Protocol but would emphasise that this would not apply where an Authority from Heritage New Zealand was in place.
- 55 I note there is a condition regarding relocation of the villa currently at 12 Cambridge Road (HDC, Appendix 8b, Subdivision Consent condition #32).

56 I consider that these conditions, in combination with the conditions of the Authority that will be obtained from Heritage NZ, will ensure that any minor adverse effects on archaeology are appropriately managed and mitigated.

Conclusion

57 Based on the surveys and assessments undertaken for the Project, two archaeological sites will be affected: subsurface remains relating to a possible pre-1900 dwelling identified at 12 Cambridge Road (R13/928), which is to be relocated, and pre-1900 underground historical workings from the original Martha and Grand Junction Mines (T13/926).

58 It is also possible that unrecorded 19th century subsurface archaeological remains relating to settlement/domestic dwellings and mining activities may be exposed and affected by project works.

59 The adverse effects can be appropriately mitigated through archaeological investigation, recording and information recovery under the provisions of the Heritage New Zealand Pouhere Taonga Act 2014.

60 Overall, the adverse effects of the proposed Project Martha on historic heritage are likely to be minor subject to the management and mitigation measures outlined above.

A handwritten signature in black ink, appearing to read 'R Clough', with a stylized, cursive script.

Rod Clough

(26 October, 2018)