Bendigo-Ophir Gold Project

Statement of Matthew Sole (Archaeology and Heritage)

31 March 2026

Introduction

1. My name is Matthew James Sole.

2. I have a Diploma of Horticulture from Lincoln University and an Advanced Certificate in Apiculture from Telford College.

3. I am a self-employed Archaeological Consultant for Kopuwai Consultancy based in Central Otago. I am a Section 45 approved archaeologist under the Heritage New Zealand Pouhere Taonga Act 2014 (**HNZPT Act**) and have been practicing since 2008.

4. I have been asked by Sustainable Tarras Inc to prepare archaeology evidence in relation to the Bendigo-Ophir Gold Project (**Project**).

Experience

5. My experience includes:

    a. Eighteen years (Central Otago based) private consultancy experience in archaeological heritage survey, recording for the preparation of archaeological assessments and heritage impact assessments.

    b. Worked under Dr Jill Hamel, Dr Matt Schmidt and collegiately with Otago Archaeologists, Dr Dawn Cropper, Dr Peter Petchey, Benjamin Teele; the late Peter Bristow, the late Chris Jacomb, the late Angela Middleton.

    c. Archaeological survey, assessment, authority for Central Otago Queenstown Trail Trust for Lake Dunstan Trail-Clyde via Bannockburn to Cromwell.

    d. Archaeological surveys, assessments and authorities for Queenstown Trail Trust – Coronet Faces Water Race Track & Coronet Rear Faces Trail via Green Gate, Deep Creek and Eight Mile, Arrowtown to Lower Shotover.

    e. Various Archaeological surveys, assessments and authorities for the Department of Conservation (**DOC**) – Skippers, Bendigo Historic Reserve, Flat Top Hill, Pomahaka Junction. Gabriel's Gully Historic Reserve, Golden Point Historic Reserve. At the request of Matt Schmidt (DOC), I recently spent 3 days at Rakiura, Port Pegasus undertaking archaeological condition surveys on a 1827 Shipbuilding site, Tin mining settlement, tramway and mining system features.

f. Project managed Bendigo Historic Reserve Come in Time Battery restoration project including archaeological excavation 2002 -2003 with support from Otago Goldfields Heritage Trust (**OGHT**).

g. Various Archaeological surveys, assessments and authorities for Central Otago District Council (**CODC**) and Queenstown Lakes District Council.

h. Worked as part of team on the Water Race Hill subdivision project since 2015 which has gone through two resource consents and Environment Court mediation to a successful compromise outcome working to fit a subdivision sensitively within a heritage system and landscape in Bannockburn.

i. Appeared in resource consent hearings and submitted evidence to the environment court in relation to archaeology.

j. Assisted in largely voluntary capacity in Otago Goldfields Heritage Site review – Ophir, St Bathans, Tinkers, Clyde, Kawarau Gorge.

k. Presented public talks on heritage and led various heritage field trips to sites within Central Otago.

l. Heritage and trail site interpretation signage, way finding brochures & information services relating to heritage, recreation and Central Otago endemic flora & fauna.

m. Survey and manage track design and construction through archaeological sites via archaeological authority process for Clutha Gold Trail Charitable Trust.

n. Developed feasibility study for the Roxburgh to Lawrence cycle and walking trail with CODC District Development team.

o. Drafted an Outdoor recreation strategy for Central Otago.

p. I was the DOC Recreation and Historic programme manager for Central Otago for 10 years.

q. I have submitted on statutory heritage, water and biodiversity consultation to District, Regional and National policy levels.

r. I have organised and led numerous volunteer holidays on historic huts and site in maintenance and restoration in the Nevis Valley, Potters, Bains Block, Serpentine, Golden Progress.

My involvement with the Project site

6. In 2022, I was subcontracted by New Zealand Heritage Properties Ltd (**NZHP**) to undertake three area surveys for avoidance of above ground archaeological sites and features in upper Shepherds, Jean and Rise & Shine catchments and in the upper Thomson Creek. This involved four days of foot and vehicle surveying, with three days spent at the upper Shepherds Creek, Jean Creek and the eastern flanks of Rise & Shine. Project Areas J011054 & J011057 combined with over 40 points of interest surveyed.

7. I was expressly instructed that the surveys were intended to identify, by use of photos and waypoints, the presence of archaeological features so that they could be avoided when constructing drilling platforms and access tracking to service the drilling platforms. During these three days of survey, I observed, located, and photographed likely camp sites; early boundary fence lines incorporated into more recent rabbit proof fencing upgrade; prospecting and tailings features; and pack track and water race features.

8. During a third survey I accessed the mid Shepherds Creek survey area by walking up from lower Shepherds Creek valley floor and up via the remnant constructed carriageway G41/728. I was disappointed to see damage from mine prospecting, road access construction and drilling to what would have been an intact, as constructed, late 1890's early 1900's 1.4km schist riveted and schist culverted hand-built carriage/roadway. I have since submitted a report to Heritage New Zealand (**HNZ**) on damage to the Heritage Carriageway and Pack Track & 1898 survey pegs above Shepherds Creek G41/782. Site G41/728 is discussed later in my evidence.

9. Since then, with the project shift to a full-scale open pit and unground mining project with associated processing plant, overburden landfills, dam and chemical tailing impoundment with aligned haul roads, I have been involved with 18 site visits on behalf of other entities and in my personal capacity. During these visits I continue to explore and increase my understanding of the rich and significant values this site holds, where public access permits.

10. Finally, in November 2025, I provided two days of archaeological survey assistance to Dr Matthew Schmidt and Neville Ritchie from DOC with follow-up sharing of geo referenced images and GPX track and waypoint files as a result of archaeological surveys in the mid and upper Rise and Shine.

Code of Conduct

11. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. This statement has been prepared in compliance with that Code. 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 I express.

12. In my personal capacity, I am the secretary and co-chair of the Central Otago Environmental Society. I was formerly a life member (since rescinded) of OGHT. I acknowledge the potential for my broader interests to affect my opinions, but I have been careful to ensure that the opinions I express in this statement are objective and based on appropriate methodology and evidence.

My assessment methodology

13. In preparing archaeological assessments I adopt the HNZ Guidelines for Writing Archaeological Assessments[1] and apply the criteria for inclusion on the New Zealand Heritage List under HNZPT Act.[2]

[1] Heritage New Zealand Pouhere Taonga "Archaeological Guidelines Series No. 2: Writing Archaeological Assessments" (July 2019) available here
[2] Heritage New Zealand Pouhere Taonga Act 2014, s 66(3)

14. I consider the condition of the site in terms of the following:

    a. Is the site unusual, rare or unique, or notable in any other way in comparison to other sites of its kind?

    b. Does the site possess contextual value? Context or group value arises when the site is part of a group of sites which, when taken together as a whole, contribute to the wider values of the group or archaeological, historic or cultural landscape.

    c. What current research questions or areas of interest could be addressed with information from the site? This is known as the 'information potential' of the site. Archaeological evaluations should consider current national and international research interests.

    d. What is the amenity value of the site (e.g. educational, visual, landscape)? Does the site have potential for public interpretation and education?

    e. Does the site have any special cultural associations for communities or groups, e.g. Māori, European, Chinese?

15. I adopt and apply the above assessment criteria on a heritage systems basis, spatially engaging and interpreting the tapestry of heritage layers and values at the overall landscape scale. I consider endemic biodiversity and geological landforms, followed by the human cultural tapestries of mana whenua travel, mahinga kai and occupation, early survey, pastoral, early settlement, transport, gold mining and all its iterations, hard rock mining to industrial dredging through into the twentieth century with intensive agriculture, horticulture, viticulture and lifestyle subdivision and industrial mining.

16. An unhelpful development in archaeological practice has been the focus on individual buildings and structures, often to the detriment of the associated heritage systems and the fabric with which the buildings and structures are constructed and aligned to. New Zealand does not have a classification model specifically developed for heritage landscapes. I consider a more interdisciplinary methodology of spatial analysis using connectivities between superimposed layers of history is helpful in this regard.[3]

17. I use desktop research and spatial mapping to identify pre-survey points of interest to prioritise and guide ground surveys. Early survey plans, retro lens aerial imagery spatially plotted with more recent LINZ aerial imagery and lidar imagery (where available) plus heritage documentation inform the field survey, with GPS ground truthing with photographs and augmented with drone aerial photography where permitted. Images are all geo-referenced and able to populate GIS mapping along field survey GPS waypoints (**Figure 1**). This provides a powerful landscape-wide navigation, survey and interrogation visual assessment tool. In collaboration with a landscape architect, this makes for a powerful interactive assessment, project design and mitigation planning tool.

[3] For example, the methodology adopted in Janet Stephenson, Heather Bauchop and Peter Petchey *Bannockburn Heritage Landscape Study* (Department of Conservation, Science for Conservation 244, September 2004), available here

Figure 1: Geo referenced survey images overlaid on Google Earth Mid & Lower Rise & Shine. This is an example of the survey techniques I use, with data collected over two days of field work. Compare with HPNZ's assessment, which has only 9 photos for the same area.

18. When evaluating effects on a heritage landscapes and the heritage systems encompassing them, it is important to recognise that individual historic assets, including archaeological remains and historic buildings, contribute to historic landscape character, and the key assets should be identified together with an analysis of their contribution to the character of the unit.[4] The value of individual historical or archaeological elements is not necessarily the determinant of the value of the historic landscape character unit to which they contribute. The presence of a scheduled monument (archaeologically 'high value'), for instance, does not necessarily confer great value to the historic landscape character unit in which it is found; and conversely, revetted schist wall ruins ('low value', say, in historic building terms) may be crucial in a 'high value' historic landscape.

19. In my opinion, when assessing heritage landscapes and systems the relevant factors to consider include:

    a. local character and local distinctiveness including local residents' perceptions;

    b. time-depth, rarity, special interest or typicality, as judged by local, regional and national standards;

[4] Adapted from: *Design Manual for Roads and Bridges*, Volume 11 Environmental Assessment, Section 3 Environmental Topics, Part 2 HA 208/07 Cultural Heritage, available here

c. legibility, including the complexity of the elements, parcels and components and the completeness or articulation of the historic landscape, association of features, either of the same period or not;

d. fragility or robustness, including history of change, sensitivity to change, and capacity to absorb change;

e. cultural associations, including historical events, personages, literary or artistic connections, views;

f. research potential including the anticipation of further evidence.

20. In adopting methodologies for assessing the role of a heritage asset's setting, the archaeologist should bear in mind the principles summarised below:

a. an asset's setting is its relevant surroundings;

b. settings have physical factors which can be changed by a scheme, but it is the effect these changes have on the perception of the asset that is assessed;

c. context is an aspect of setting where a relevant aspect of knowledge, belief or relationships may not be visible (or audible) at the site;

d. settings are experienced by people as contributing to the understanding or appreciation of heritage assets;

e. professional judgement is required, using criteria measured against the scheme's Cultural Heritage Design Objectives.

21. Impacts on many similar, possibly minor, historic elements may be cumulative, but for historic landscape character units such impacts may best be assessed as the totality of their impact on the historic landscape character unit. The assessment of such multiple impacts is not simply a matter of aggregating scores; it requires professional judgement to assess how these changes actually affect the character of the historic landscape unit.

Problems with the Applicant's assessment methodology

22. The basis for NZHP's archaeological assessment survey work associated with the Project has been for the avoidance of *prospecting* effects, including from the construction of drilling platforms, site earthworks and access earthworks to drilling platforms.

23. This is based on my brief for the three survey areas I was subcontracted to undertake for NZHP, and was reiterated in the briefing and oversight I experienced from Matakanui Gold staff and the subsequent review of my survey results.

24. On observing some new unrecorded archaeological features which needed recording, I was advised that as they were not intending to prospect drill nearby, I did not need to survey and record anything. This appears to be corroborated by the absence of any acknowledgement of mining being recorded as a threat to any of the subsequent updated site records by NZHP. Given

the Project's stated move to open cast and underground mining, subsequent survey and recording practices have not appeared to adjust accordingly.

25. There appears to be little acknowledgement of mining as a potential heritage threat or impact to archaeological sites within the project footprint in updating New Zealand Archaeological Site Records (**ArchSite**) associated with existing sites when there is now potential for disturbance and destruction. Noted threats in the site record updates currently only reference stock and fossicking.

26. The assessments rely on past photographic records with very little new photographic site condition updates lodged on ArchSite. Given some of the extensive landscape-scale extents of several sites, and to provide wider heritage landscape context, drone photography and GIS spatial mapping should have been utilised and incorporated to a greater degree. GIS spatial mapping has been used to show project footprint over various historic plans and maps along with some specific archaeological sites but has not been utilised to provided landscape scale perspectives or overview context of the heritage sites and system values under threat.

27. The bulk of the survey work and site record updating effort has been confined largely to the known recorded sites and features with their inherent narrower focus on buildings and structures. The effort made to survey the wider heritage systems archaeology appears light compared to the number of yet unrecorded significant heritage system features that I have observed and noted in my site visits (which have been confined to assessing public access within and associated with the project area). These new sites and features include pack tracks, water races, 1898 survey pegs, chimney and hut floor sites, dams. As such, the new NZHP finds and records are very limited and have missed significant heritage system features and the opportunity to take a heritage system approach has been lost, compromising the recording and deeper understanding of the heritage systems within and bordering the Project.

28. The Applicant's assessment fails to provide due weight, in considering the wider contribution and significance of these sites and features, to their collective heritage systems contribution and to the wider heritage landscape. The assessment of significance tends to be confined to the project area and individual recorded sites as opposed their cumulative heritage systems and heritage landscape contribution and relationships both within and outside the project area to wider Bendigo area. This has the effect of compartmentalising and minimising the significance of heritage values and their relationship and value as components of heritage systems.

29. The Macraes gold mine is a good example of the effects of such an approach. Previously a significant site in set in its natural tussock covered high country basin, the site is now compromised by the open cast mine and haul road activities such that the original context for remaining heritage features and sites when mining is completed has been significantly degraded.

Gaps in the assessment

30. The assessment is detailed in respect of the archaeological sites and history sequences consisting of mana whenua and gold mining within the project footprint but largely fails to acknowledge the collective value of the Rise & Shine heritage systems and its relationship and its significant contribution to wider Bendigo Basin and Dunstan Range heritage landscapes. As noted in HNZ's s

51 Report, the HPNZ assessment has evaluated each individual site discretely, rather than recognising them as part of archaeological complexes that form an archaeological landscape.[5]

31. This is in contrast with other statutory bodies' value determinations of the significance of the heritage landscape. As noted by HNZ, previous assessments and surveys recognise that the high value and importance of the sites lie in the close association they have with other sites within the landscape, and the intactness of the landscape as a whole. The HNZ listing (List No. 9097) recognises the site for its role as the premier quartz with adjacent alluvial mining area in the region during the 1860s gold rush,[6] and the site's classification as part of an outstanding natural landscape in the District Plan is also indicative of its importance at the landscape scale.

32. The heritage protections provided under the Conservation Covenant are also significant. The Covenant requires the maintenance of the historic values of the land as referred to in "The Rich Fields of Bendigo". That publication describes the significant array of transport related features, and historic alluvial and hard rock mining systems with associated occupation in the Rise & Shine Valley area (all of which are within the Covenanted area proposed to be revoked). Professor Lloyd Carpenters Thesis[7] and associated published papers illuminates further the significance of the Rise & Shine, Bendigo Creek gold mining and their values and contribution to the Rich Fields of Bendigo.

33. While NZHP have appeared to have assessed some of these sites, it is only as individual sites and features and not in relation to their connection and contribution to wider heritage systems and heritage landscapes. In context, and associated with the heritage system, there are significant components that will be lost. NZHP's assessment is very understated in context, contribution and significance of loss.

34. A good example is recorded site G41/277 (**Figure 2**) which at face value appears to be one site, but in fact is a complex system covering alluvial mining by Rise and Shine Syndicate, hard rock prospecting and mining by five syndicates (Rise and Shine, Eureka, Jubilee, Bendigo Rise and Shine, and Shine Again) and features foundation structures relating to three stamper batteries with associated hard rock shafts (recently discovered), pits, adits (tunnels), mullock heaps, tramway & three water races dating from the 1870s to 1930's with direct connection to the Alta and Come in Time hard rock mining systems downstream. In the context of their associated heritage systems these are significant components of the overall landscape that give context to the Battery Hill landmark above. NZHP's survey is shallow, and the assessment misrepresents and understates the values, contribution and significant of the over lapping mining systems, phases and features of respective mine syndicate endeavours and the site's direct association with mining at Come and Time and Alta and Eureka.

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[5] Heritage New Zealand Pouhere Taonga "Section 51(2)(d) Fast-track Approvals Act Report: Bendigo-Ophir Gold Project, FTAA-2507-1089" available here, at [13]-[15]

[6] Heritage New Zealand Pouhere Taonga "Bendigo Quartz Reefs Historic Area", List No. 9097, available here

[7] Lloyd Carpenter "Rich in Myth, Gold and Narrative: Aspects of the Central Otago Gold Rush, 1862-2012 (PhD thesis, University of Canterbury, 2013)

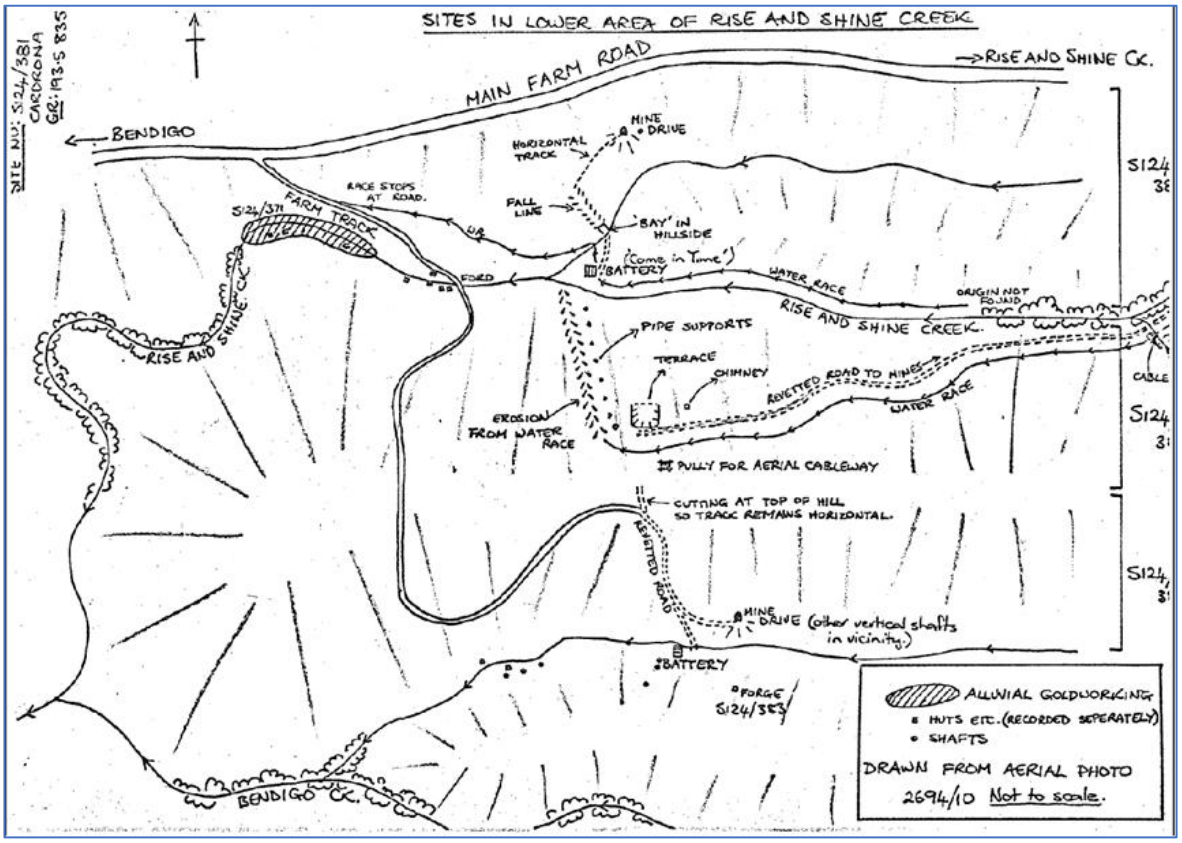

Figure 2: Figure 19 from Rich Fields of Bendigo - overview of lower Rise & Shine from 1980 survey showing relationship of three main battery sites Eureka, Come In Time & adits, shafts and water infrastructure, tramway, aerial cableway and associated settlements

35. NZHP's assessment is light in its recognition, survey and assessment of pastoral farming heritage and likewise with early transport. There are significant heritage features that have not been recorded and assessed, like the boundary fences up on the saddle which incorporate historic 5-wire fencing likely pre-dating the 1900s, and the connection and association between the Rabbiters' Hut and the Morven Hills Woolshed site G41/8 off Ardgour Road.

36. In relation to early transport, two sequences of pack track exist but remain un-surveyed and are not recorded:

    a. a 3km section associated with the early carriageway formation and 1898 surveyed Bendigo Matakanui Road G41/782 discussed later in this evidence (**Figure 9**); and

    b. a near 1km section leading from Rise & Shine valley up to near the Saddle summit which would have linked to the wagon track built by the Rise & Shine syndicate to service supplies from Bendigo Creek O'Donnell's Store and Butchery built in 1866 and Goodall's Hotel which catered for the needs of miners and locals right on up to 1907, long after hard rock mining towns Welsh Town and Logan Town had ceased (**Figure 3**).

Figure 3: Unrecorded Pack Track Rise & Shine

37. The pack track is significant because it evidences very early use, before dray roads and wagon tracks. It would have enabled some of the earliest use of saddle pass area. It's omission from the report is a significant oversight.

38. Similarly, the NZHP report has a fragment G41/783 recorded but fails to reconcile it with early survey plans showing early tracks (**Figures 4** & **5**). The remnant G41/783 is a separate site record for a remnant of a dray road built by the Rise & Shine syndicate families to more easily restock supplies from Bendigo Goods Store and Butchery (DOC historic reserve G41/325 & 324) at Bendigo Creek. In my opinion the current Thomson Gorge Road largely followed the historic dray track alignment. Early survey plans (for example Figures 4 & 5) show trails from Wakefield Town, ferry via Bendigo Creek up over Thomson Saddle via both Shepherds and Rise & Shine Creeks and down into Thomsons Creeks.

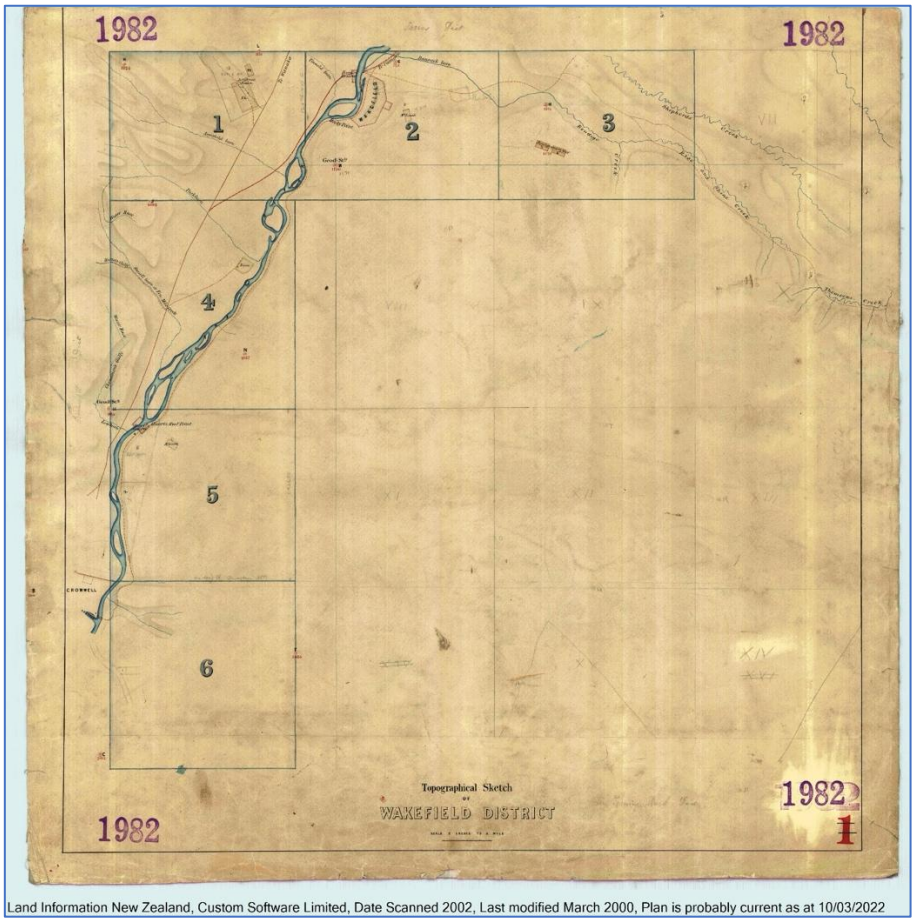

Figure 4: SO_1982 Wakefield to _Rise & Shine & Shepherds Creek - tracks

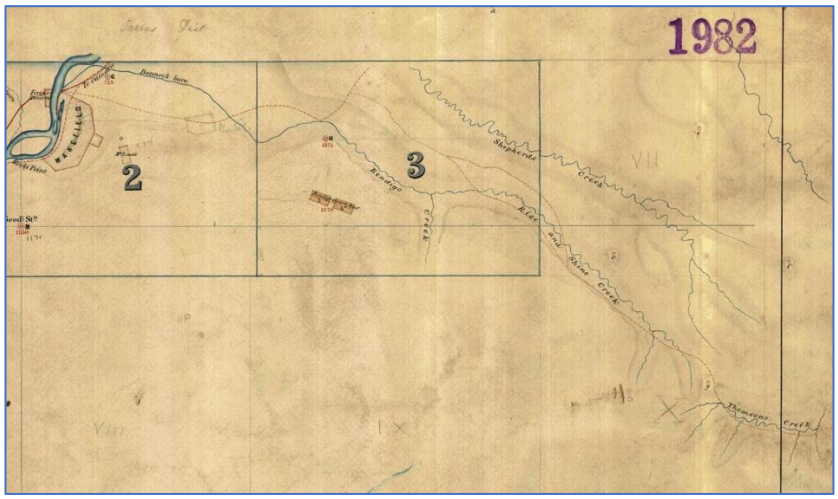

Figure 5: Cropped SO_1982_ Wakefield to _Rise & Shine & Shepherds Creek - tracks

39. There appears to be limited or no archaeological assessment in relation to willow tree mitigation project where there are a numerous recorded mining features and mining huts along Bendigo Creek which will require an archaeological survey and site record updating along with an archaeological assessment to inform an archaeological authority application to HNZ for willow control. Willow control whether mechanically or by spray will damage and potentially destroy standing recorded mining huts and aligned mining fabric.

40. There appears to be no complete archaeological survey and assessment in relation to the Bendigo rehabilitation site or in relation to the bore monitoring sites in Bendigo Creek below the Come In Time site. In my opinion, the G41/256 complex appears to be within the rehabilitation footprint and is incomplete as it is physically associated with the G41/258 chimney site, G41/259 gold workings and G41/260 and likely, as J Hamel states, to be an earlier alluvial mining system with water supplied from the Rise & Shine syndicate water race (**Figure 6**).

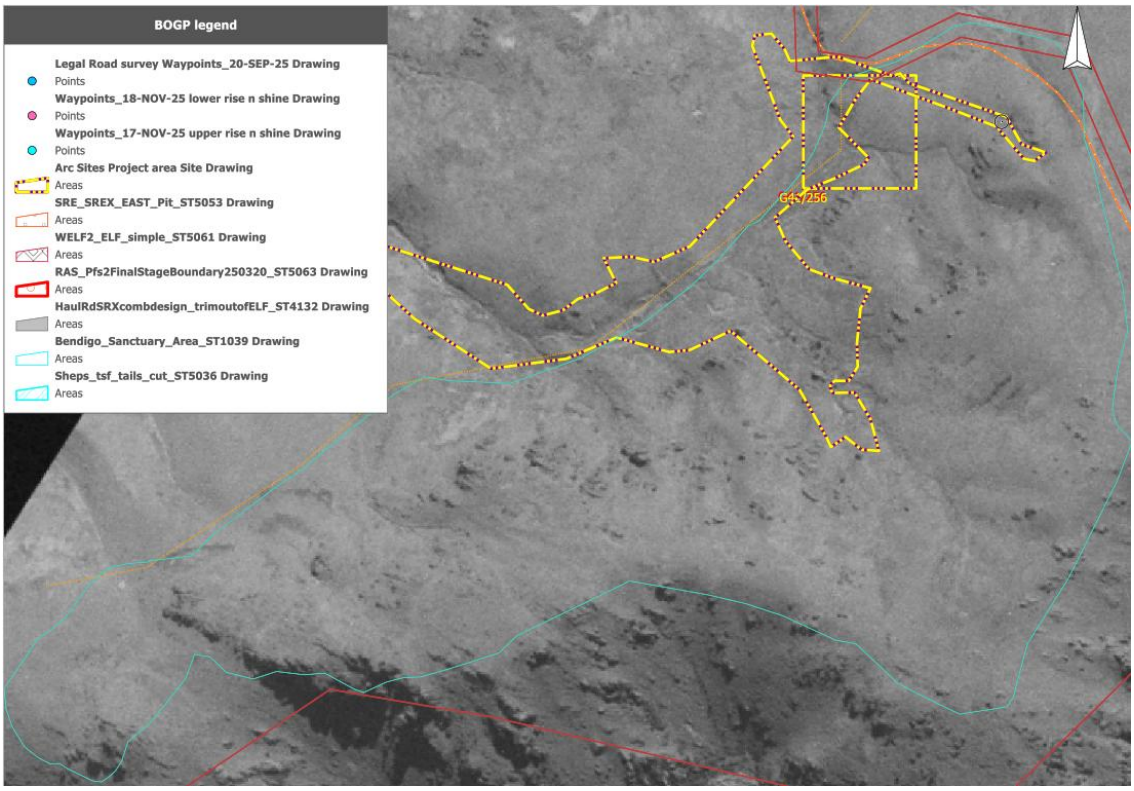

Figure 6: Early ground sluice workings recorded site G41/256 within Bendigo Sanctuary.

41. Finally, several other features and sites have not been recorded, for example the chimney and floor site shown in Figure 7 below. Situated in Shepherds Creek, this site is significant because it indicates there was mining activity in that area and that Shepherds Creek has been exposed to historic alluvial mining in the valley floor as recorded in 1907 Geological Map of Wakefield Survey District (**Figure 8**). Yet the HPNZ assessment does not acknowledge this.

42. Overall, the extent of the gaps in the recording and assessment could be indicative of poor application of survey techniques and methodology or possibly more about commitment to survey effort and reading the granular physical clues on the ground, giving rise to questions about what else has been potentially missed and therefore not recorded and assessed. The survey has been compromised by the original survey brief of avoidance for prospecting, and archaeological field practise has not been adjusted to match the project change to mining with the associated destruction, damage and disturbance industrial-scale mining can impact on heritage.

Figure 7: Shepherds Creek – unrecorded chimney & floor site

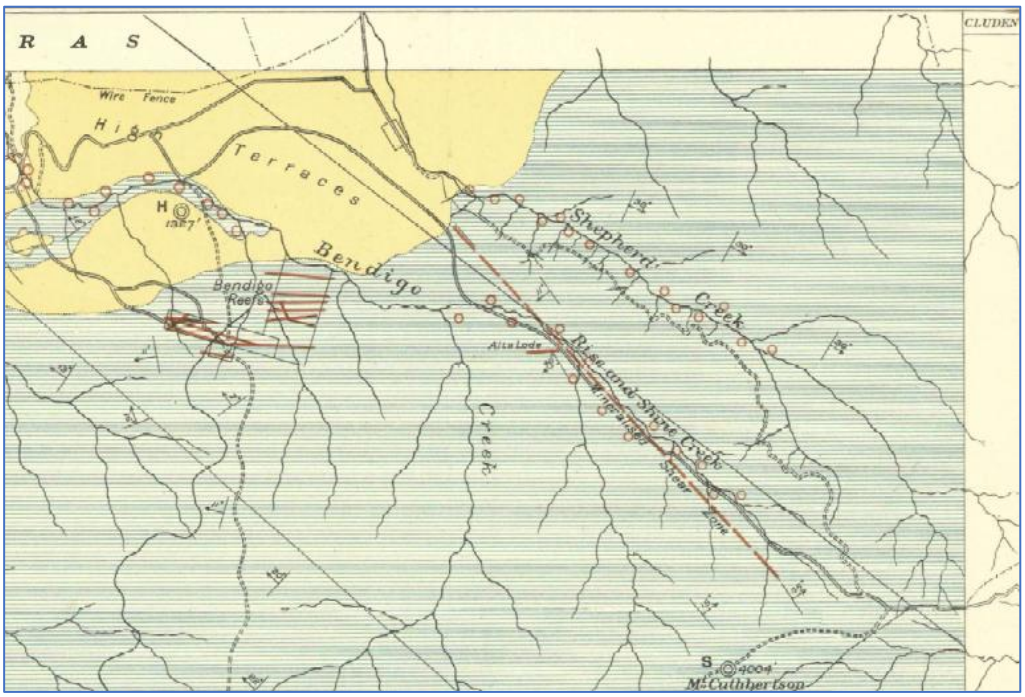

Figure 8: extract from Jame Park 1907 Geological Map of Wakefield Survey District plotting old gold working along the Shepherds Creek

Adverse effects and proposed mitigation

43. The Applicant's assessment acknowledges independent site-based assessments and extensive research documenting designating the significant contribution of the mana whenua, transport, pastoral and gold mining with their summary of effects on archaeological sites in Table 10-1.

44. However, there is an unresolved tension where the Application states high heritage value overall and major impacts from the project and yet downplays "destruction", emphasises low individual site value, stresses better examples elsewhere, or highlights high-value areas outside the footprint.

45. In my opinion, the impacts on heritage will be significant, considering:

    a. The complete destruction of sites and values within the mining footprint;

    b. The work proposed to repurpose or change sites and values outside the mining footprint; and

    c. The impacts of the above on the heritage values of the area at a landscape-scale.

46. In relation to point (a) above, the Applicant downplays the effects by stating there are other more accessible examples elsewhere in the region. This is overly simplistic in my opinion. The Project site has different features, unique values and provides an experience not found elsewhere.

47. For example, the syndicate reservoir G41/269 shown in Figure 9 is unique, because of its terraced construction. I am not aware of any other dam built like this anywhere else in the region. In alluvial sluicing terms, the dam would have been used to store a day's worth of water which would then be used by miners for a day's worth of mining. It was the engine room of the mining operation, equivalent to a 10t excavator in today's terms. As a result of the Project, this feature will be destroyed, alongside the entire alluvial workings in which its set. Although this is somewhat acknowledged by the Applicant, the effect is downplayed on the claim that there are other features like the dam and associated alluvial workings elsewhere. The Applicant has failed to recognise that those other features are dissimilar both because they do not have similar terraced construction and because other alluvial gold workings associated with Quartz Reef Bendigo are not publicly accessible. Nor do they have significant historical discourse as researched and recorded by Lloyd Carpenter.

Figure 9: Drone photo of Rise & Shine Syndicate Reservoir G41/269

48. The Project site also provides a unique experience for visitors. Unlike other more well-traversed and sign-posted sites, via formed and unformed legal roads and the Rise & Shine covenanted sections 11 & 12, the heritage systems and landscape can be discovered for yourself. It is a totally different experience. That experience is valued not just in the archaeology community but also by the public, as evidenced by the vehicle access and use data, including by mountain bike and foot. Recreational use in terms vehicle counts and Strava heat mapping show the whole Bendigo scenic and heritage landscape is popular and has a steadily increasing use, and while longer in distance the Rise & Shine heritage landscape is also accessible in dry conditions by two-wheel drive for exploration. Apart from the Come in Time battery site, it is currently not signed or interpretated which provides a wander-at-will heritage landscape exploration and discovery experience in contrast the Welshtown and Logantown interpretive tracked visitor experience. The 8-kilometre return walk via the Bendigo Creek will be a demanding effort and time consuming compared the current vehicle access with short walk and is therefore not like for like. The existing vehicle access from Thomson Gorge Road down to Clearwater Creek could be formalised by easement with access up the historic benched dray track to the Come In Time.

49. In relation to point (b) of paragraph 45, a good example is G41/04 McLean's PR Musters Hut, which listed in the NZHP summary of effects on archaeological site within BOGP Table 10-1 as no impact and protection to be put in place to enable future adaptive re-use. This site is integrally associated with G41/5 schist stacked yards. It is not clear whether the adaptive reuse is related to the Project, but as a significant early pastoral archaeological site it needs an archaeological survey and assessment with subsequent application for an archaeological authority to HNZ for any adaptive reuse to occur.

50. In relation to point (c) of paragraph 45, for the reasons discussed above, the HPNZ assessment does not assess the impacts in the context of the heritage values of the area at a landscape scale, which in my opinion are significant regionally and nationally.

51. In respect of mitigation, there appears to be little evidence of NZHP having attempted to influenced project redesign and or more substantive alternative mitigation in relation to the various heritage systems and aligned landscapes affected by the mining project. The mitigation appears rather to have been directed by the applicant's mining intentions.

52. Mitigation is light weight and is reliant on recording prior to destruction, which is a statutory requirement, with no real attempt at project redesign for protection and preservation of significant heritage systems and sites. As noted, the reliance on existing site records based on older building and structure focussed surveying and recording methodology is incomplete for recording and documenting respective heritage systems within and adjacent to the project in the historic reserve, conservation land and the Bendigo Conservation Covenant.

53. On site and boundary effects on heritage from mining heavy machinery use, blasting, dust etc had not appeared to be considered in the earlier 2025 assessment. The Applicant has since considered[8] these effects but has not required any compliance monitoring on adjacent or nearby sites/features for mitigation. There are large number of heritage sites consisting of mortared dry stacked schist along with adits and shafts that could be affected by prolonged repetitive blasting and or heavy machinery operation nearby.

54. For example, the Come in Time ore crushing and battery ore supply embankment are unstable with sections subsiding and there is evidence of adit wall rock fretting potentially from the projects drilling and heavy machinery movements and road earthworks. The adit in the past could be accessed to NE end shaft outlet but has since been backfilled.

55. The blasting report provides a very high-level management approach that it says will allow the mining operation to proceed while appropriately managing the risk of cosmetic damage to heritage structures. I would caution and recommend that vibration criteria applicable to an agreed selection heritage structures within and buffering the blasting sites is applied and assessments are made on how blasting activities at the Bendigo-Ophir Gold Project can comply with limits. Monitoring and dilapidation surveys should be incorporated into the assessment recommendation and archaeological management plan for operation of heavy machinery and blasting in the vicinity of archaeological sites and features. A traffic light approach needs to be prepared and implemented on the ground for archaeological sites based on staged distance from mining project identified threats to heritage site and feature survival and longer-term preservation.

The G41/782 site

56. G41/782 (**Figure 10**) is a 1.5km section of benched, stone culverted and schist retained revetment carriage which up until Matakanui Gold Limited's prospecting was in its near complete state. In my opinion this a very significant as-built early transport feature, distinguished by its

[8] Substantive Application: K.06 – Marshall Day Acoustics – BOGP Blasting Vibration Effects on Heritage Structures (10 March 2026), available here

intact as-built state. This is compared to most similar early transport recorded examples being disturbed, modified, and damaged by ongoing use through to the present day.[9] To date, following registering of documented reports to HNZ with photos and GPS waypoints, there has been no archaeological authority application or HNZ consent for the modification and damage to this rare and significant carriage with original surveys pegs remaining, impressive hand built locally quarried carriageway with adjacent pack track benching.

57. G41/782 as a recorded archaeological site with 1898 survey pegs and aligned pack track has been extensively modified in its conversion to mine prospecting access track along with associated prospecting drilling platform sites. The grading and metalling have seen new upslope batters cut along with side cast material over stone bridge/culverts, and schist revetted causeway. This has been exacerbated further by sediment run off from uphill prosecting access tracks and drilling platforms combining to infill the hand-crafted schist box culverts. These activities are occurring on Central Otago District Council Road reserve, without any archaeological assessment and supporting archaeological authority application.

Figure 10: View into a section G41/782 historic carriageway - damaged by conversion to mine access.

[9] For example: Skippers, Danseys Pass, Conroy's, Crawford Hills, Macetown, and Nevis roads.

My Overall Assessment

58. In my opinion there are significant omissions with NZHP's respective surveys such as:

    a. early pack/bridle trail features clearly visible in the current landscape un-recorded

    b. hard rock mining shafts, adits & nearby water races G41/277 - un recorded

    c. various hut floor sites un-recorded

    d. mining hut site features - damage from 1990's Rabbit and Land management root raking and rabbit fencing un-recorded

    e. pastoral boundary fence line remnants – unrecorded – not acknowledged

    f. water races - from Clearwater creek supplementing supply to G41/264; unrecorded, not assessed, and the incomplete logging of water races G41/586 from Rise n Shine Creek on true right appearing to service Come In Time and workings beyond servicing G41/257 and G41/604

    g. lack of acknowledgement of Battery Hill and the six associated batteries and hard rock shafts and adits with associated remains – restored Come In Time; original foundations for Alta, Eureka, Jubilee, Rise & Shine, and Rise Again, – not acknowledged compared to the two Matilda and Auroa sites associated with Logantown and Welshtown.

    h. Bendigo Matakanui road 1898 survey pegs – unrecorded – not assessed.

    i. Extensive modification and damage to Historic 1898 carriageway formation and associated pack track with survey pegs without any monitoring of effects and archaeological authority.

    j. Incomplete survey of alluvial workings G41/256 and its connectivity to site and features G4/258, G41/259 & G41/269 and unassessed impacts from the Bendigo Sanctuary proposal.

    k. Lack of acknowledgement and mitigation for subsurface archaeological values.

59. Recommended Mitigation and management should include:

    a. higher degree of heritage systems recording to guide preservation, inform legibility and interpretation of heritage systems especially in relation to interpreting the remaining heritage and truncated heritage fabric as past whole complete systems;

    b. Avoid and preserve sites G41/264, G41/584, G41/277, G41/605, Bendigo Creek mining hut and gold working features.

    c. protection buffers for adjacent and proximate heritage features, with Dilapidation surveys and test blasting with agreed ongoing monitoring, with mitigation measures;

    d. ongoing active heritage site/feature management for remaining sites and features;

    e. retained heritage covenant mechanism – to DOC for heritage, biodiversity and landscape

f. stabilise and actively manage sites G41/271, G41/272 and avoid associated features G41/606, 273, 275,

g. create new site record for historic Rise & Shine dray road between Rise & Shine and Bendigo Creek to access Goods store, butchery and hotel,

h. revise accordingly archaeological authority and management plan.

i. Record and protect unrecorded chimney and hut floor site Shepherds Creek

j. Create public easements from Thomson Gorge Road via Clearwater/Rise & Shine creek to Come In Time, Alta & Eureka mine and battery sites

Matt Sole

Dated: 31 March 2026