



<b>R E P O R T</b>	<b>TO</b>	Peter Thom; Group Manager Planning and Environmental Services
	<b>FROM</b>	D Burton (Consulting Planner – AECOM)
	<b>FILE REF</b>	202.2016.544.002
	<b>DATE</b>	20 July 2017
	<b>SUBJECT</b>	Notification and Planner's Report ( s42A ) re Application to Change Conditions of Consent of LUSE 202.2016.544.001; SUPA Underground Mine land use consent

## **DETAILS OF APPLICATION**

**Date Received: 6 July 2017**

**Further Info Requested: 6 July 2017**

**Further Info Received: 6 July 2017**

**Submitted By: Oceana Gold New Zealand Limited**

**Applicant: Oceana Gold New Zealand Limited**

**Address: SUPA Underground Mine, Waihi**

**Zoning: Martha Mineral Zone (majority) and part Residential Zone**

**Rules: NA**

**Application: Discretionary activity to change conditions of consent of SUPA land use consent**

**Recommendation: (i) Application be processed non-notified: (ii) the application be granted**

## 1. BACKGROUND

Oceana Gold (New Zealand) Limited (OGNZL) owns and operates a number of precious metal mines in the Waihi vicinity. These include the Martha Open Pit (currently not operating), the Correnso and SUPA underground mines and several other underground mines that are non-operational. A processing plant, tailings storage facility, water treatment plan and other support facilities are also provided.

The current application seeks to change some of the conditions of consent applying to the SUPA underground mine. Changes to the Void Management Plan that are required as a condition of the SUPA consent are also sought – these are partially consequential changes that arise should the changes to the consent conditions as sought be approved.

## 2. THE PROPOSAL

On 21 October 2016 the Hauraki District Council (HDC) granted a land use consent to OGNZL for the development and operation of the Slevin Underground Project Area (SUPA) which is an underground mine which effectively forms an extension to the Correnso Underground Mine. The area covered by the SUPA consent is located adjacent and to the South West of the Correnso consent area and is between the Correnso Mine and the Martha Open Pit. Work at the SUPA Underground Mine is currently underway.

OGNZL has lodged an application with the HDC to make changes to two of the SUPA consent conditions and to the Advice Note that follows condition 8.

In addition, OGNZL has sought approval of consequential changes to the Void Management Plan (VMP) which is a requirement of condition 17. The approval of changes to the VMP can be given only after the proposed changes to the conditions as sought are granted.

The changes to conditions sought are as set out below.

### 2.1 Advice Note to Condition 8

**“Advice Note:**

*“There shall be no more than three blast events per day from within CEPPA, ~~and~~ SUPA and the Martha Drill Drive Project “MDDP” combined. For condition 8c the average and 95 percentiles will be calculated for vibration from blasting within ~~both~~ SUPA, ~~and~~ CEPPA and MDDP combined.”*

The change to the Advice Note to condition 8 is needed to recognise that the development blast vibrations from the recently consented Martha Drill Drive Project (MDDP) are to be included with those from the SUPA and CEPPA mines in determining the averages and 95th percentiles (for the SUPA and the MDDP consents). All blasting is to be undertaken during the same three “windows” (blast events are restricted to three per day within all three mines) and the averages and percentiles are to be calculated in a combined manner (vibrations from all operations are included). The conditions for the MDDP are structured in this way (refer condition 13 MDDP consent). As the blast vibrations from MDDP works will be recorded along with those from SUPA and CEPPA in determining compliance with the SUPA consent conditions, the reference to MDDP is necessary in the SUPA condition 8 Advice Note to avoid possible technical non-compliance.

It is neither practical nor necessary to isolate vibrations originating at say MDDP from those generated from the other nearby underground workings. Indeed, it is not clear that the Blast Hub regime can differentiate between the different locations of blasts. This latter matter needs to be addressed for possible future mining works in the vicinity.

The change proposed to the Advice Note to condition 8 is required solely to ensure that, with the consenting of the MDDP project, meeting the requirements of condition 8 of the SUPA

consent does not become technically not possible and a non-compliance results. This change has no adverse environmental effects. Measurement of blast induced vibrations in the CEPPA, SUPA and MDDP projects has all been taken on a combined project basis.

## 2.2 Changes to Condition 16 and 17

"16 Unless otherwise approved by the Council, the following stand-off distances shall apply for mining in the vicinity of historical development and stoping:

<b>Planned Mining</b>	<b>Historical Mining</b>	<b>Proposed Stand Off Distances</b>
Development Drives <u>and AVOCA stopes</u>	Development, rises and access drives	Historical development shall <del>not</del> <u>only</u> be intentionally intersected <u>where required for ensuring mine stability, or where required for effective mining operations.</u>
Development Drives	Unfilled portions of Stopes	Development drives shall have a minimum standoff distance of 10 m to unfilled portions of historical stopes.
AVOCA Stopes	Unfilled portions of Stopes	Stoping shall not occur within 25 m of unfilled portions of historical stopes
AVOCA Stopes	Crown pillars	Standoff distance shall be increased to 30m, unless mitigation measures can be put in place. Mitigation measures include monitoring with laser scanning devices such as CAL-S, or filling of the unfilled void. via one or more boreholes from a location outside the standoff zone.

17 Prior to the first exercise of this consent as provided for by condition 4, the consent holder shall provide to the Council for its written approval a Void Management Plan. The objective of this Plan is to confirm the location and shape of old unfilled and filled mine voids potentially affected by the activities authorised by this consent, and to identify the risks and controls required to ensure ground surface stability. The Plan will include, but will not be limited to modelling, probe drilling, stand-off distances, remedial measures and procedures for intersecting historical development,— monitoring and operating procedures. The consent holder shall review and update the Plan as necessary including whenever there is any change to the methods or procedures used for void detection monitoring or operating procedures and shall provide the updated Plan to the Council for approval."

When the SUPA application was approved, the applicant considered that the locations of historical workings in the vicinity of the SUPA project were well known and were accurately recorded such that planned mining works would not intercept historic workings. The conditions of the SUPA consent include requirements for stand-off distances to apply for mining works in the vicinity of historic workings including that planned development drives are not to intentionally intersect with historic development, rises and access drives. Other provisions in condition 16 specify specific stand-off distances to apply between old workings and planned mining.

In the current application to change the consent conditions, the applicant advises that recently they had a situation where a historic tunnel was found to be 4-5 m below a section of planned development and concerns were raised regarding the stability of the planned

workings. Here it was considered that it would possibly be preferable to intentionally intersect the old workings and backfill that section to avoid possible stability issues.

The applicant also advises that since the SUPA consent was granted, model updates and interpretations have indicated there are other areas where it will be necessary to intersect historic tunnels for effective mining operations.

The applicant therefore is seeking a change to condition 16 to allow planned mining (development drives and AVOCCA stopes) to intentionally intersect with historic tunnels where necessary for ensuring mine stability and where required for effective mining operations.

It is pointed out that the change requested does not seek authority to intersect historic stopes – only tunnels (development, rises and access drives). These tunnels are relatively small (generally less than 2 m wide and 2 m high).

The amendments proposed for condition 18 are consequential changes. Condition 18 requires that a Void Management Plan (VMP) is submitted to the HDC for approval. The general purpose of this VMP is to set out measures to be adopted in locating old workings and to identify risks and controls to ensure ground surface stability. The amendments to condition 18 involve the inclusion of measures to be adopted where intentionally intersecting historic workings.

The changes sought to the VMP are consequential to the changes to the consent conditions being amended. These principally relate to the inclusion of reference to the Martha Drill Drive Project (MDDP) which is a project involving the construction of exploration tunnels from the SUPA workings towards the open pit. Consent for the MDDP project was granted by the Council on 13 July 2017. The amendments to the VMP also include references to the intentional intersecting of historic workings as provided for by the changes to the SUPA consent which are the subject of this application. The amendments include consideration of local instability issues that may arise with the intersection of old workings and potential strategies that may be adopted to address any such issues. A Standard Operating Procedure (SOP) is also introduced for Planned Mining and Development Breakthroughs Into Old Workings (new Appendix 4).

Any approval given by the Council to the amended VMP must be granted following approval of the MDDP consent (already granted but objections or appeals may be made) and this current application to change conditions of the SUPA consent.

### **3. THE SITE AND LOCALITY**

Most of the consented SUPA area is zoned Martha Mineral Zone in the Hauraki District Plan with a smaller section being zoned Residential. The applicant advises that all land within the SUPA consent boundary is now owned by the Company except the roads which are owned by HDC. A number of the houses which are owned by OGNZL are tenanted. The majority of the SUPA site is vacant but there are several houses in the Roycroft Street area which, as noted, are owned by the applicant

### **4. STATUS OF THE APPLICATION**

The application is to be assessed a discretionary activity (refer s 127 RMA).

### **5. CONSULTATION AND AFFECTED PERSONS APPROVALS**

At section 9.1 of the application AEE, OGNZL sets out its view that no consultation is considered to be necessary regarding this application on the basis that:

- The applicant owns all the land subject of the application (other than roads which are owned by the council).
- When the SUPA application was processed, written approvals had been provided from Ngati Hako and Ngati Tamatera Runanga, and this is not necessary with the current application to change conditions because there will be no change in the scale or nature of effects generated.

The applicant also notes that the SUPA Notification Report concluded that, notwithstanding that affected persons approvals had been received, the effects were nevertheless less than minor (thereby allowing a non- notified processing approach to be adopted).

It is agreed that the effects resulting from the changes to conditions sought will be less than minor (see Section 8.1) and that no consultation is necessary in this case.

## 6. STATUTORY REQUIREMENTS FOR NOTIFICATION

A consent authority has the discretion whether or not to publicly notify an application unless, in accordance with section 95A(3)(a) of the Resource Management Act (1991), a rule or National Environmental Standard (NES) precludes public notification (in which case the consent authority must not publicly notify – not applicable to the current application), or section 95A(2) applies, which states that an application **must be** publicly notified if:

- (a) the activity will have, or is likely to have, adverse effects on the environment that are more than minor – (refer discussion below);
- (b) the applicant requests public notification of the application (not requested in this case);  
or
- (c) a rule in a plan or a national environment standard requires public notification (again not applicable in this case).

Section 95D requires that in determining whether an activity will have, or is likely to have, adverse effects on the environment that are *more than minor*, the consent authority *must disregard* the following matters:

- Effects on persons who own and occupy the land in, on or over which the application relates, or land adjacent to that land.
- Any effect on a person who has given written approval to the application.
- Trade competition and the effects of trade competition.

The consent authority may also disregard an adverse effect of the activity on the environment if a District Plan rule or National Environmental Standard permits an activity with that effect.

Where full public notification of an application is not required, the option of limited notification is available where a proposal may have effects that are more than minor for properties within or immediately adjacent to the site of the application.

Notwithstanding all the above, a consent authority has the discretion to publicly notify an application if it decides there are “special circumstances” in relation to the application (s 95A (4)).

### 6.1 Notification Assessment

In the current application, the key matter to consider in determining whether notification is required is whether the effects on the environment resulting from the change to conditions of the SUPA consent will be “less than minor”.

The proposed changes to the SUPA consent conditions involve allowing the consent holder to intentionally intersect old workings where necessary for ensuring mine stability or where required for effective mining operations.

This change has been considered necessary as it has been found that the location of all historic workings is not as accurately known as had been thought to be when the SUPA consent was applied for.

The environmental effects of the changes to conditions sought are discussed in Section 8.1 below and relate to possible instability resulting from the deliberate intersection of old workings. In this regard, the focus of the consideration must be on potential effects on the stability of the land surface above the underground mine. Other matters such as mine safety are considered to be a matter for WorkSafe NZ rather than the RMA. Likewise efficient and effective mine operations are primarily a matter that the mine operator must address.

The applicant has provided a geotechnical assessment from Entech that concludes that any instability issues arising from stoping old tunnel intersections will only be localised and considered to be an operational matter.

This assessment has been reviewed by Council geotechnical engineering adviser Dr Peter Fuller of Mining One Consultants (refer report – Appendix A).

Dr Fuller confirms that the Entech Report provides an adequate assessment of the stability impacts of the proposed change to consent conditions and he agrees that stoping through these old workings (tunnels) will not affect the surface stability and induce any surface settlement.

Dr Fuller also considers that the amendments to the VMP being proposed are appropriate as these relate to the intersection of historic tunnels etc.

Based on the conclusions reached by Dr Fuller, it is concluded that the effects on the environment that will arise as a result of the adoption of the changes sought to the SUPA conditions will be minimal or non-existent --- and certainly "less than minor".

On this basis there is no requirement or justification that the application be publicly notified nor made subject of limited notification as the effects on all parties are less than minor.

Further, I do not consider that there are any "special circumstances" associated with or arising from the application to warrant public notification.

## 6.2 Notification Recommendation

The application **need not be limited notified or publicly notified** in accordance with sections 95A and 95B of the Resource Management Act 1991.

**Decision: That the above recommendation be adopted.**

Delegated Officer: \_\_\_\_\_



Delegated Officer (Authorised for final approval): \_\_\_\_\_



Peter Thom, Group Manager - Planning & Environmental Services

Date: \_\_\_\_\_

24/07/17

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## **7. ASSESSMENT OF RESOURCE CONSENT APPLICATION UNDER SECTION 104 OF THE RESOURCE MANAGEMENT ACT 1991**

Having determined that the application should be processed on a non-notified basis, the proposal is now assessed under s104 of the RMA for a decision on whether it is to be granted. The application is assessed as a discretionary activity (refer s 127 RMA).

In accordance with section 104(1) of the RMA (1991), and subject to Part 2, when considering an application for resource consent, a Council must have regard to:

- any actual and potential effects on the environment of allowing the activity;
- any relevant provisions of a National Environmental Standard, other regulations, National Policy Statement, a New Zealand Coastal Policy Statement; a Regional Policy Statement or proposed Regional Policy Statement; a Plan or proposed Plan; and
- any other matter a council considers relevant and reasonably necessary to determine the application.

## **8. ASSESSMENT OF THE PROPOSAL**

The following assessment has been carried out with regard to those matters listed above as being assessment criteria for discretionary activity applications well as any other matter that is considered relevant.

### **8.1 Actual and Potential effects on the Environment**

The application seeks to change conditions 16 and 17 of the SUPA land use consent to allow OGNZL to intentionally intersect historic development, rises and tunnels when constructing development drives and stopes as part of the SUPA underground Mine. The SUPA Underground Mine is constructed in an area where old workings are present and the conditions require that stand-off distances from the old workings are adopted (refer condition 16).

The location of the historic workings is well known from old survey information but this information has not always been found to be entirely accurate. Hence, the SUPA consent requires that various measures are adopted to confirm the location of old workings relative to planned mining. Probe drilling ahead of workings is one such measure to be conducted. The conditions require that a Void Management Plan is prepared for Council approval the objective of which is to confirm the location and shape of old unfilled and filled mine voids and to identify the risks and controls required to ensure ground surface stability. Monthly reporting is required which includes quantification of probe drilling conducted (condition 20).

While the consent as granted specifically precluded the intentional intersection of historic development, drives and tunnels (not stopes) by planned development, the consent holder has found that in some situations, the best course of action is to intersect the old workings largely because the actual location of the old workings has been found to be not accurately recorded on the old surveys and the most effective mining approach is to intersect these and back fill them.

The effect of such intentional intersection of old workings is potential instability. The applicant's assessment of this aspect has been reviewed by Dr Peter Fuller and his report is attached as Appendix A.

Dr Fuller concludes that, at the planned mining depths (around 300 m from the surface) intentional intersection of old tunnels will not affect surface stability or induce any surface settlement.

A further potential implication of intersecting old workings is the safety of the workforce. In this regard, the applicant has confirmed that the intentional intersection of historic development will be fully compliant with the relevant Regulations relating to inundation and inrush in mining and quarrying activities. These Regulations are administered by WorkSafe NZ. That agency has confirmed that it has no objection to the high risk activity of working within inrush control zones and drilling provided that specified information is submitted to WorkSafe NZ as it becomes available. The applicant advises that it has submitted the required information and will continue to do so (refer section 7, AEE).

It is considered that worker safety is primarily a responsibility of WorkSafe NZ (and the mine operator) rather than a matter for the RMA. As such, meeting the requirements of WorkSafe NZ is considered to adequately address any effects for worker safety and no specific consideration is required under the RMA for the purposes of this application.

Finally, as noted in Section 2.1, the change to the Advice Note to condition 8 has no adverse effect on the environment. The change is simply to ensure that, with the consenting of the MDDP project and its requirement that vibration for the purpose of that consent is measured in combination with the CEPPA and SUPA consents, this does not result in the SUPA consent condition regarding blasting vibrations becoming technically non-compliant.

## **8.2 Objectives and Policies of the Relevant Statutory Documents**

The application to change the conditions of the SUPA consent must be considered in terms of the objectives and policies of the relevant statutory documents.

Specific consideration of the current application to change the conditions of the SUPA consent in terms of the statutory documents follows.

The key statutory documents in terms of which this application needs to be considered are:

- Waikato Regional Policy Statement (RPS)
- Hauraki District Plan (HDP).

The Waikato Regional Plan is of limited relevance in that this project does not require any consents from the Waikato Regional Council.

Here it is noted that the overall SUPA project was recently subject of the same test when the application for that project was considered in the latter part of 2016 (i.e. quite recently). The s42A report for the SUPA application concluded:

*For these reasons the SUPA proposal is consistent with the objectives and policies of the WRP and the HDP.*

In considering the application in terms of the RPS and the HDP, the application AEE includes a review of these matters at section 8.4 and section 8.6 (HDP).

The AEE correctly notes that the RPS recognises the potential benefits of the further development of the region's mineral resources. I agree and adopt this assessment (refer s42A (1A) and (1B)). The RPS includes broad policy direction about addressing adverse effects of development. Such potential adverse effects in the case of the changes proposed to the SUPA proposal are land use related and refer to potential ground surface stability matters. The relevant instrument that deals with such effects is the HDP.

The AEE includes a thorough review of the relevant objectives and Policies of the HDP. I agree with and adopt the assessments in these documents. In particular, I note and support the assessment made in the above sections of the application AEE and in particular note as follows:

The SUPA consent area is zoned Martha Mineral Zone (most part) and Residential (smaller proportion). The Martha Mineral Zone provides for mining activities – that is its purpose. In



the Residential Zone, mining activity is again provided for but only where conducted underground and then as a discretionary activity.

The key relevant objectives, policies and assessment criteria to be considered in this application relate to:

- **The recognition and management of hazards**  
In this regard, the change to the consent conditions to provide for the intentional intersection of historic development, rises and tunnels will have no effects for ground surface stability or surface settlement. Further there are a number of other conditions (not subject of this application to change conditions) which address issues of surface stability maintenance.
- **The effects of mining activities on the environment and character of localities**  
The assessment of the environmental effects of the proposal in Section 8.1 concludes that the effects on the environment of the proposed changes to the conditions of the SUPA consent will be minimal or none at all.

For these reasons the proposal to change the conditions of the SUPA consent is consistent with the objectives and policies of the WRP and the HDP.

### **8.3 Relevant National Policy Statement / National Environmental Standards (NES)**

Of these documents, in my view only the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health is of relevance to this proposal. This NES is addressed in the AEE at section 8. I agree with and adopt this assessment. In particular I agree with the conclusions reached that the NES is not triggered by this application particularly given the depth at which the exploration tunnels will be located.

### **8.4 Hauraki Gulf Marine Park Act 2000**

Section 9(4) requires a consent authority, when considering an application for a resource consent for the catchments of the Hauraki Gulf, to have regard to sections 7 and 8 of the Act.

- Recognition of national significance of Hauraki Gulf
- Management of Hauraki Gulf – objectives to recognise the national significance of the Gulf, its islands and catchments.

The effects of the proposal will be less than minor on the Hauraki Gulf and its environs, or on the relationship of tangata whenua with the Hauraki Gulf. There will be no additional water related consents required to implement the changes sought to the SUPA land use consent and the intentional intersection of old workings will have no effects on the Hauraki Gulf water quality or other features.

## **9. PART 2 ASSESSMENT**

Part 2 outlines the purpose and principles of the Act. The overall purpose of the Act as outlined in section 5 is to promote the sustainable management of natural and physical resources. Sustainable management is defined as meaning:

*“In this Act, “sustainable management” means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while:-*

- (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) *Safeguarding the life supporting capacity of air, water, soil and ecosystems; and*
- (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.”*

In a recent decision (*R J Davidson Family Trust v Marlborough District Council* [2017]) the High Court rejected an appeal against the decline of a resource consent application, finding that (except in limited circumstances) there is no need (or ability) to refer back to Part 2 of the RMA when determining a resource consent application under section 104 of the Act. The presiding High Court Judge<sup>[1]</sup> concluded on this point that:

*I find that the reasoning in King Salmon does apply to s 104(1) because the relevant provisions of the planning documents, which include the NZCPS, have already given substance to the principles in Part 2. Where, however, as the Supreme Court held, there has been invalidity, incomplete coverage or uncertainty of meaning within the planning documents, resort to Part 2 should then occur.*

*... I accept Council's submissions that it would be inconsistent with the Scheme of the RMA and King Salmon to allow Regional or District Plans to be rendered ineffective by general recourse to Part 2 in deciding resource consent applications.*

This application seeks to change conditions of the SUPA consent. The SUPA consent area is located mainly in the Martha Mineral Zone and with a smaller area in the Residential Zone. The relevant provisions of the Hauraki District Plan which became operative September 2014 (i.e. relatively recently) with regard to the Martha Mineral Zone and the Residential Zone have been developed and tested through the RMA First Schedule process. That process requires public participation through the consultation and submission process, and imports the tests of section 32 of the RMA. Section 32 requires (amongst other things) an examination of whether the objectives for a plan are the most appropriate way to achieve the purpose of the RMA, an assessment of the efficiency and effectiveness of the plan provisions to achieve the objectives, and identification and assessment of the economic, cultural, social, and environmental effects anticipated from the plan provisions.

With regard to the application to change the SUPA conditions, applying the tests set out by the Supreme Court in *King Salmon*:

- the District Plan provisions relevant to the application are not invalid (i.e. they are lawful),
- are complete in their coverage of matters relevant to the proposal to change the conditions (including tangata whenua and Treaty of Waitangi matters),
- and are clear and direct in their meaning.

The consistency of the proposed activity with the relevant objectives and policies of the Hauraki District Plan that give effect to Part II of the RMA has been set out in Section 8.2 of this report.

As a result, granting consent to the changes to the conditions of the SUPA consent would achieve the purpose of the RMA and no further recourse to Part II RMA provisions is necessary.

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<sup>[1]</sup> Her Honour Justice Cull

## 10. CONCLUSION

Overall, the proposed land use consent application meets the requirements of the Hauraki District Plan and the Resource Management Act 1991.

Subject to conditions of consent the effects on the environment would be less than minor as a result of granting the consent.

## 11. RECOMMENDATION

That pursuant to Sections 104, 104B of the Resource Management Act 1991, the Hauraki District Council **grants consent** to this non-notified, application to change conditions 16 and 17, and the Advice Note to condition 8, of the SUPA landuse consent for the following reasons:

- (i) The potential adverse effects on surface stability of the change to conditions to allow intersections of current development drives and AVOCA stopes with old workings are avoided due to the geology and depth below the surface at which the works will occur.
- (ii) There will be no potential adverse effects from the change to the Advice Note to condition 8, which is a consequential amendment to ensure administrative efficiency between the SUPA landuse consent conditions and the MDDP landuse consent conditions in terms of measuring vibrations from blasting.
- (iii) The changes to conditions sought do not result in inconsistency with Hauraki District Plan objectives and policies.

Reported and Recommended by:

**Decision: That the above recommendation is adopted.**

*Peer Review:*



**Mark Buttimore / Strategic Planning  
Projects Manager**

Date: 24 JULY 2017

*Delegated Officer:*



**Peter Thom / Group Manager Planning and  
Environmental Services**

Date: 24/07/17.

Decision No. 2017/18 - 11

## **12. AMENDMENTS TO VOID MANAGEMENT PLAN (VMP)**

Should the Council grant the application to change the conditions as requested, there are a number of consequential changes required to be made to the VMP (refer condition 17).

The revised VMP has been provided to the Council as a track change version at the same time as the application to change the conditions of consent was lodged.

The amended VMP has been reviewed by Dr Fuller who concludes as follows:

*The first of the two amendments to the VMP has been included to limit the requirement to confirm the location of old workings to only those that will be directly affected when intersected by new stoping. In the circumstances, this is appropriate and given the limited amount of new development proposed, it would not be feasible for other more remote parts of the network of old tunnels in SUPA to be accurately located.*

*The second amendment is the requirement to list the possible additional measures that may be implemented to manage the local stability around areas of stope – old tunnel intersections. This was a request from the HDC and the proposed wording in the amended Condition 17 is considered appropriate.*

On the basis of these conclusions it is recommended that the amended VMP be approved by the Council.

Once the decision to grant the application to change the conditions of the SUPA consent has been made, the council should advise OGNZL that the amendments to the VMP are accepted and that a signed, clean version of the amended VMP should be referred to the Council for formal signature by an officer of the Council with the appropriate delegated authority.

Prepared by Dave Burton, Technical Director – Planning, AECOM Hamilton.

**APPENDIX A – REPORT BY DR P. FULLER**



## **SUPA APPLICATION**

### **VARIATION OF CONDITIONS 16 AND 17, AND ADVICE NOTE TO CONDITION 8 –**

### **REVIEW OF GEOTECHNICAL ISSUES RELATING TO SURFACE STABILITY AND SETTLEMENT**

For

**HAURAKI DISTRICT COUNCIL (HDC)**

Job No. 2217\_G  
Doc No. 5066v1 .doc  
Date: July 2017  
Prepared by: P G Fuller

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Quality  
ISO 9001

SAI GLOBAL

FINAL REPORT



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## 1 CONTEXT

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Oceana Gold (New Zealand) Ltd (OGNZL) has submitted an Application to vary Consent Conditions 16 and 17 and advice note 8 of the SUPA resource consent to the Hauraki District Council (HDC). I, Dr Peter Fuller have been requested to review the ground stability and surface settlement implications of that Application.

I have worked as a consulting engineer in the mining industry since 1980 in the areas of geotechnical input to mine design, mine stability assessment and ground control in mining. I have previously advised the HDC on ground stability following the Barry Road collapse and Applications for the Martha East Layback, mining of the Trio deposit, the Martha Exploration project and mining in the Golden Link project area (Area L) which was later reduced in size to become the Correnso Extended Project Area (CEPA). I have also advised the HDC on this aspect of the original SUPA Application. Since mining in CEPA was approved, I have provided on-going technical advice to the HDC on ground stability and surface settlement resulting from mining to date in the Correnso, Daybreak and Christina orebodies.

### 1.1 Documents Reviewed

Documents reviewed in relation to the SUPA consent variation Application are:

Various drafts and the final version of the Application for variation of Consent Conditions 16 and 17 and advice note 8.

This prompted a request from the HDC for further pictorial information of the current planned mining within SUPA showing the location and orientation of the old access tunnels to be intersected by stoping. Two additional figures were provided in response to this request and these have also been reviewed.

### 1.2 Brief for the Review

The following brief was provided by Mr Dave Burton in an email dated 5 July 2017:

*.....please prepare a brief review of the application to change the consent conditions and the request to amend to the Void Management Plan. The matters that you should address in the report include the following:*

- *Adequacy of information provided to enable the effects of the proposed change to conditions to be assessed*
- *Consideration of the effects proposed changes to conditions will have for the stability of the SUPA mine and the ground surface*
- *Are the amendments to the Void Management Plan appropriate and will they address any potential stability issues that may result from the changes to the conditions*
- *Any other relevant matters from a ground stability perspective*

## **2 REVIEW OF GROUND STABILITY AND SURFACE SETTLEMENT**

The information provided in the Application together with the additional Figures 1 and 2 is adequate for the effects of the proposed changes to Conditions 16 and 17 on mine and surface stability in SUPA to be assessed. Similarly the proposed changes to the requirements of the Void Management Plan (VMP) in Condition 17 are adequate as they include the additional measures which may be used to manage local stability.

### **2.1 SUPA Mine and Ground Surface Stability Assessment**

The updated geology across the SUPA area and the current mining plans presented in the Entech technical assessment report confirm an increased cover of the Lower Andesite unit above the extended mineable Christina orebody. This will increase the regional stability of that area. Since this is also where there will be a number of intersections of new stopes with the now accurately located old tunnels, there will be a reduced risk of local instability developing around those intersections due to the rock type.

The assessment in the Entech report is qualitative but in the circumstances this is adequate. The conclusion that any stability issues arising from stope – old tunnel intersections will only be localised is endorsed. Any voids which may form around such intersections due to ground failure will have a very small volume and will not be able to propagate more than a few metres before becoming filled with failure debris and completely choked. Therefore, at the planned mining depths, it is agreed that stoping through these old tunnels will not affect the surface stability and induce any surface settlement.

### **2.2 Amendments to the Void Management Plan (VMP)**

The first of the two amendments to the VMP has been included to limit the requirement to confirm the location of old workings to only those that will be directly affected when intersected by new stoping. In the circumstances, this is appropriate and given the limited amount of new development proposed, it would not be feasible for other more remote parts of the network of old tunnels in SUPA to be accurately located.

The second amendment is the requirement to list the possible additional measures that may be implemented to manage the local stability around areas of stope – old tunnel intersections. This was a request from the HDC and the proposed wording in the amended Condition 17 is considered appropriate.

### **2.3 Other Relevant Matters**

There are no other matters or stability concerns in the Application.

Yours sincerely

A handwritten signature in black ink, appearing to read "Peter Fuller".

**Peter Fuller**

Consultant Geotechnical Engineer

**MINING ONE PTY LTD**