RESOURCE SOLUTIONS WEST COAST

Southwest Energy Limited

Application for Resource Consent – Mining Permit MP53355, McLeods Road, Mikonui

Phil McKinnel

February 2015

Introduction

Southwest Energy Ltd hold Mining Permit MP53355 that covers an area of land at Mikonui that encompasses areas of Department of Conservation Land, McLeod's Road and associated road reserve as well as a number of privately owned land parcels.

This application seeks to authorise physical mining activities on private land owned by Mr H Dillion and McLeod's Road adjacent to this freehold land.

The application also includes provisions to realign McLeod's Road to the West and this new alignment will remain on a permanent basis.

The applicant currently hold resource consents with the Westland District and West Coast Regional Councils that authorise gold mining and associated activities within Mining Permits MP50125 and MP41446 that are adjacent to MP53355.

These consents authorise the use of a gold wash plant and associated water take and discharge. This wash plant is located on DOC land and has been the subject of significant investment in relation to water management infrastructure. Given the performance of the wash plant and existing water management infrastructure it has been determined that this location is best for the wash plant and gold bearing wash from the private land and McLeod's Road that is the subject of this application will be trucked to this plant for processing.

The applicant has commenced consultation with the Department of Conservation, Westland District Council Operations Department, Westland District Property Company Ltd and the Hende Family Trust.

This application includes a detailed mine plan that will form the basis for any annual work programme that may be required by any resource consent that may be granted as a result of this application.

The applicant has also engaged Simon Ferrick Landscape Architects to provide an assessment of the actual and potential landscape effects as a result of this mining operation.

In relation to any potential effects on heritage or archaeological sites, the applicant is unaware of any known sites within the application area, however the applicant is seeking advice from an archaeologist in this regard.

It is the applicant's position that this proposed activity will not cause adverse environmental effects of a more than minor nature and this application should be processed on a non notified basis.

S.88 Letter 11 February 2015.

The applicant first lodged this application on 9 February 2015, however due to the following reasons it was returned as incomplete:

- Confirmation of the boundary of the application

The S.88 letter that was received requested the applicant confirm the boundaries of the application due to discrepancies between the mine plan and the site plan.

This discrepancy is due to the fact that 'physical' mining activities are limited to the boundaries of the free hold land described in this application document and therefore the technical mine plan is limited to this area.

The site plan includes McLeods Road and the area of Mining Permit MP41446 that currently holds the applicant's wash plant and existing water management infrastructure that is proposed to be used as part of this overall activity.

- Archaeological Assessment

No archaeological assessment was including with the previous application. Underground Overground Archaeology has since completed an assessment and the associated report is attached to this application.

Resource Management Amendment Act (2013) – Other Matters

This section will deal with the other matters required to be addressed by Schedule 4 of the Resource Management Act (1991) but not included in the relevant application form completed below.

Schedule 4

Clause 3 Additional Information Required in some Applications.

An application must also include any of the following that apply

(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):

The proposed mining operation will be using parts of the West Coast Regional Council's Land and Water Plan and the Westland District Plan in relation to permitted activities. The relevant permitted activities are outlined below.

Manager: Planning and Regulatory
Westland District Council
36 Weld Street
Private Bag 704
HOKITIKA 7842
☏ 03 756 9010
Fax: 03 756 9045

Resource Consent Application Form and Assessment of Environmental Effects (Land Use Mining)

All actual and reasonable costs incurred by the Council will be charged to the applicant at the conclusion of the processing of the application. A full record will be kept of all expenses incurred in processing applications.

Please note, further information can be given on additional pages if need be.

Applications for resource consents are public documents and information within this application may be supplied to members of the public.

_____

OFFICE USE ONLY

Date Received: _____
Deposit Paid: _____
Receipt No: _____
Valuation No: _____

_____

Resource Consent Application Form
(under the Resource Management Act 1991)

Full name/s of applicant/s:

Southwest Energy Ltd
[Note: An application can be made in the name of an individual/ couple/partnership/business, etc.]

Applicant's Address for service: C/- Resource Solutions West Coast Ltd
PO Box 257
Greymouth 7840

Business ☎: 03 768 9978
Private ☎: 021 849 978
Email: phil@rswc.co.nz
[Note: This is the address Council will communicate with.]

Property owner's name: (if not the applicant)

There are 3 separate property owners involved in this application.

Harry John Aldiss Dillon
C/- Barry MacDonell
5 Orchard Grove
East Taieri
Dunedin
E: bmacdonell@xtra.co.nz

Westland District Property Company
P: 03 755 8497
E: mark@westlanddistrictproperty.co.nz

Department of Conservation
P: 03 756 9100
E: permissionshokitika@doc.govt.nz

Location of activity and/or property address: McLeods Road, Mikonui

Map Reference (if relevant): At or about E1418319 N5246951 (NZTM)

CT No.: WS8C/1007

Legal description of site: Lot 3 DP3858 (active mining area), Section 2 SO 455415 (Department of Conservation Estate), Westland District Council Road Reserve & McLeods Road
(From rates notice, valuation notice or Certificate of Title.)

Are you applying for any resource consents in addition to the mining activity ?

No ✔ Yes ☐ What is the consent for?

National Environmental Standard for Assessing Contaminants in Soil to Protect Human Health (NES): Please complete and sign form RC001 *(attached to the back of this form)* or provide a statement that no activity associated with MFE's Hazardous Activities and Industries list has been undertaken on site in accordance with the National Environmental Standard for Managing Contaminants in Soil to Protect Human Health.

WEST COAST REGIONAL COUNCIL APPLICATIONS

Do you hold any consents for this activity? Yes ✔ No ☐

If yes, will these require variation or cancellation? Yes ✔ No ☐

Do you require additional resource consents from the West Coast Regional Council in relation to this proposal, e.g., for mining, discharge or diversion ? No ☐ Yes ✔

If yes, have these consents been applied for? No ☐ Yes ✔

What consent is being sought from the Regional Council

- Land Use
- Discharge Permit

If one or both of these consent proceed to limited or public notification, do you wish these consents to be processed together? No ☐ Yes ✔

PERMIT INFORMATION

Have you applied for a Crown Minerals Permit? No ☐ Yes ✔

If yes, what term has been granted? 15 years

What is your Crown Minerals Permit number? Minerals Mining Permit MP53355

Does this application seek to mine the entirety of the permit? No ✔ Yes ☐

If not, please ensure the areas that are proposed to be mined are clearly depicted on the plan.

MINING OF LEGAL ROAD

Does this application seek to mine any sections of Legal Road? No ☐ Yes ✔

If so, does this application also constitute an application for Local Government Act approval? No ☐ Yes ✔

Is the part of road proposed to be mined formed as an access? No ☐ Yes ✔

If yes, please indicate the alternative access provided during the time of mining of the road and the standard that the road will be rehabilitated to at the completion of mining.

The applicant has consulted with the Westland District Council Operations Department and Westland District Property Company Ltd in relation to the proposed mining and relocation of McLeods Road.

It is proposed that the current alignment of McLeods Road be shifted to the south to border the boundary of the existing road reserve. This road will be finished to mirror the existing width (6 m) and include a further 6 m buffer and edge protection in the form of a safety bund between the road and mining operations.

The applicant has also discussed the status of the McLeods Road with the Operations Department and will be making an application to classify this road as a construction zone to allow the transport of heavy vehicles to the processing site.

This work will be completed under Part 6.2(c)(i) of the Westland District Plan.

Please note that the Local Government Act approval will be issued separately to any resource consent and may contain additional conditions separate to any resource consent, such as conditions relating to payment of royalties, provision of temporary roading, or reinstatement.

CHECKLIST OF DOCUMENTS

Have you remembered to?

✔

- ✔ Attach a completed Assessment of Environmental Effects
- ☐ Attach a copy of current Certificate of Title for the site

  Or, Council can search a copy of the title for you (at a cost of $10 per title) ✔
- ✔ A site plan including all the information requested on page 8 of this application.
- ✔ Supply an aerial photograph *(if relevant)*
- ✔ Attach affected party approval forms *(if obtained)*
- ✔ Enclose the deposit. (note that this is a deposit and full cost recovery will occur with any additional amount invoiced upon issuing of the decision) .
- ✔ Indicate if you wish to view draft consent conditions prior to the issuing of the consent decision. By ticking this box, you agree to the extension of processing times under section 37 of the Resource Management Act in order to accommodate this request.

I hereby certify that, to the best of my knowledge and belief, the information given in this application and the accompanying Assessment of Environmental Effects is true and correct. I undertake to pay all actual and reasonable application costs incurred by the Westland District Council.

I understand that information provided on this form is public and consent to its distribution and display for consent purposes.

Signature of applicant:  .Date: 30 March 2015

(or person authorised to sign on behalf of applicant)

Name:(in BLOCK CAPITALS) Phil McKinnel

Land Use Activities
Assessment of Environmental Effects

Please answer all questions fully. You can discuss your application with Council officers before completing this form or seek expert advice.

Please note: Your proposed activity could have a range of effects (both positive and negative, temporary and permanent) on the environment. Completing this form will help you to identify the effects.

'Effects on the environment' means: any effects on the surrounding area and includes possible effects on people, plants and animals.

PROPOSED ACTIVITY

1. Please specify the area, in hectares, that will be subject to mining and associated activities:

The application area as shown on 'Annexure One: Application Area' covers approximately 8 hectares across 3 land parcels.

Physical mining activities will be limited to the land owned by Mr Dilllon and part of the Westland District Council Road Reserve.

The auriferous gravels will be transported along McLeods Road using mine trucks and stockpiled at the existing wash plant used by Southwest Energy on MP41446. The decision to use this area to process the gold bearing gravels and stockpile tailings has been made due to the work undertaken by Southwest Energy Ltd in constructing the water management infrastructure in this location. The existing water management infrastructure is operating effectively and can provide for treatment of process water generated as a result of washing of the gold bearing gravels.

Southwest Energy Ltd currently hold the following resource consents that authorise gold mining and associated activities:

Westland District Council

Resource Consent RC130083 – Gold Mining and Associated Activities within Mining Permit MP50125
Resource Consent RC100049 – Gold Mining and Associated Activities within Mining Permit MP41446
Resource Consent RC140001 – Vegetation Clearance on land within Mining Permit MP53355.

West Coast Regional Council
Resource Consent RC10109 – Gold Mining and Associated Activities within Mining Permit MP41446
Resource Consent RC10188 – Works in the bed of Redman Creek, Water Take and Discharge from Redman Creek

Resource Consent RC13149 – Gold Mining and Associated Activities within Mining Permit MP50125.

These resource consents currently authorise the operation of the gold wash plant and associated discharge of mine process water post treatment.

The applicant has invested significantly in this wash plant and associated water management infrastructure. Therefore it has been determined that the continued use of the existing plant and infrastructure will provide the best option for the applicant and allow a continuation of the management of potential adverse environmental effects.

The applicant is currently working through the necessary processes with the Department of Conservation who administer the land on which the water management infrastructure and wash plant is located.

2. Please explain the mining method proposed: *please include how many vehicles and what type will be used….*
Mining will commence at point approximately half way along the land owned by Mr Dillon, at approximately E1418301 N5246819 (NZTM). Mining will progress in a northerly direction. A haul road will ramp down on the western extent of the workings. This will allow the systematic backfilling of tailings to occur while avoiding any sterilisation of payable gravel.

It is proposed to install peripheral drainage along the eastern boundary of the freehold land. There is a known water race in this location and an assessment of the archaeological and historic values is currently being undertaken.

It is initially planned to clean out this water race and use it to capture clean storm water above the mining activities. This water will be directed into natural storm water flow paths in the area. This water will flow through the natural catchment and eventually end up into the Mikonui River or tributaries.

Mining will require the permanent relocation of the current alignment of McLeods Road to the West. There is a significant portion of road reserve available in this area.

It is proposed to relocate the existing road to the western boundary of the road reserve parcel. A 6 m buffer with edge protection will be constructed to provide a buffer with the mining operations.

This new alignment will be constructed prior to the existing alignment being used in the proposed mining activities. Therefore access will be maintained for users of this road.

The access ramp will be constructed at the southern boundary and dug to an elevation of 5 m. Turnouts to the east will occur at the 15 m and 10 m benches will be constructed where advanced sampling warrants this. The overall slope angle on the eastern side (bush) will be 60^0 while the overall slope angle at the western (McLeod Road) side will be 45^0.

This is shown in Figure One.

Mining will progress to the north with the eastern extent backfilled with tailings and overburden immediately to stabilise the steeper slope angles in this area. It is proposed to initially stockpile

material on the land owned by Mr Dillon and use this in backfilling. Tailings from the gold bearing gravels will be transported back to this pit backloads from the gold screen as necessary.

Some stockpiling of material will be required at the wash plant. This will consist of both wash to allow for processing to occur while mine development works are occurring and tailings to be stored while waiting for works to allow for backfilling to occur.

Should further exploration and testing works show increased grades to the west this area will also be mined with an increase slope angle to allow for effective mining works to be completed.

Figure Two illustrates the typical pit cross section that will be developed through this proposed mining activity.

Mining Methodology

Following on from the detailed description of mine development and plans outlined above, this section will further develop the mining methodology to be employed as part of this proposed mining operation.

Initial works have involved the removal of existing vegetation from the proposed mining area. This involved the removal of some regenerating native species and established gorse.

The next steps will involve the construction of the access ramp and realignment of McLeods Road. Following this the excavation and storage of overburden with commence.

This material will stockpiled on the freehold land where practicable and be used in backfilling and rehabilitation activities.

Excavation of gold bearing wash will then commence. This material will be transported to the existing wash plant located within MP41446 at Squatters Creek via dump trucks along McLeods Road.

In addition to the realignment of McLeods Road adjacent to the land owned by Mr Dillion it is proposed to widen McLeods Road to the extent of the road reserve to allow safe passage of vehicles and mine machinery.

Gold bearing gravels will be washed at the existing wash plant site and tailings will either be stockpiled or transported back to the mine area for backfilling.

Further sampling of gravels will be undertaken during mine development which may lead to further mining works within the land owned by Mr Dillon.

This consent seeks to authorise mining works over the entire property parcel and include the adjoining legal road.

Rehabilitation will include the backfilling and levelling of tailings and overburden. This will then be contoured to achieve natural drainage patterns and allow livestock grazing if required by the landowner.

The applicant has undertaken consultation with the Westland District Council Operations Department and Westland District Property Company Ltd in regard to the final alignment of McLeods Road. It has been agreed through this consultation that the new alignment of McLeods Road will remain as the final alignment to reduce any potential adverse of ongoing realignment of this road.

Mining Equipment

Mining activities will be undertaken using the following machinery:

- 3 Articulated dump trucks
- 2 hydraulic excavators
- 1 bulldozer
- 1 grader
- Various pumps and hoses
- Wash Plant

Figure One: Conceptual Mine Plan including ramp and McLeoads Road.

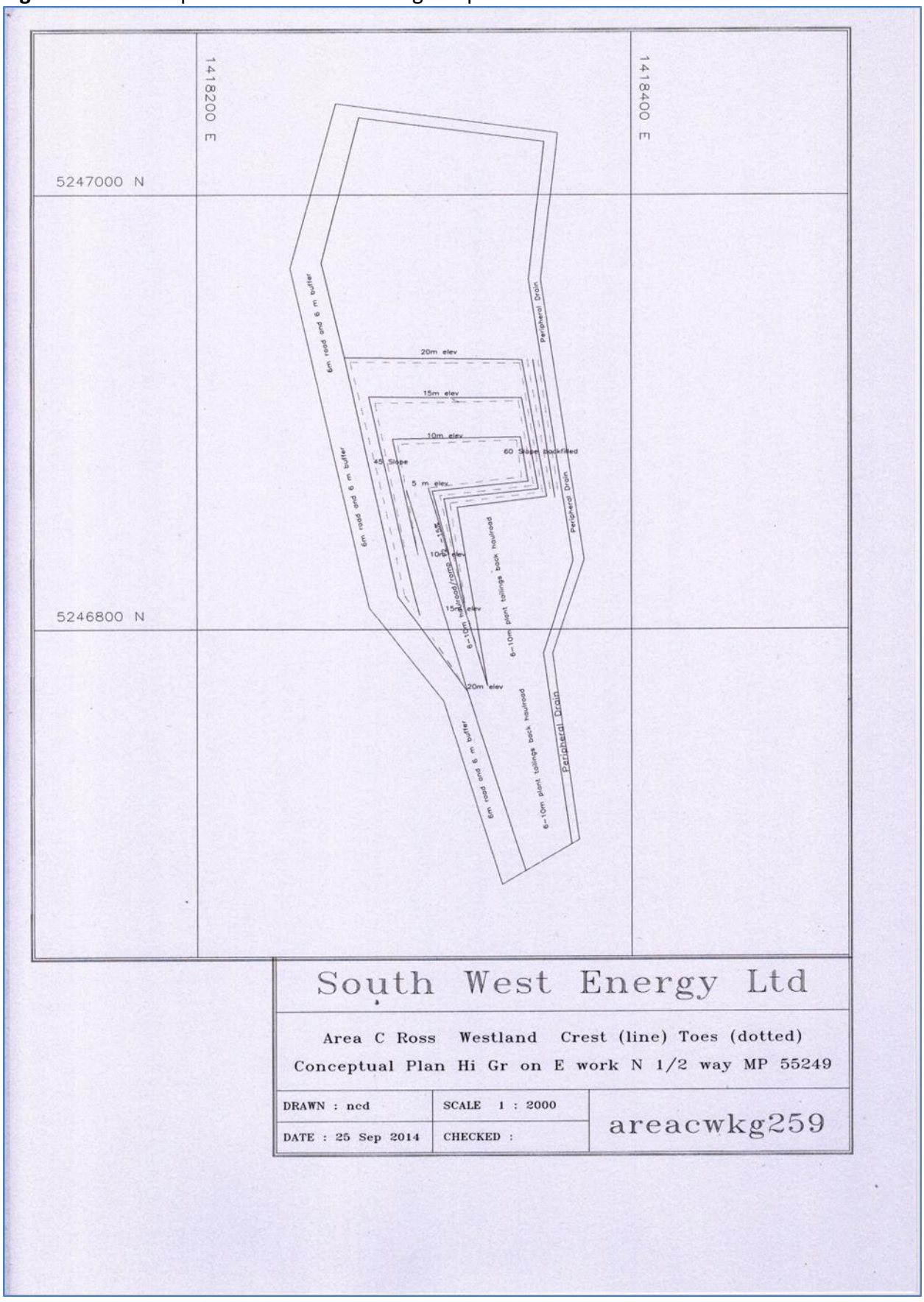
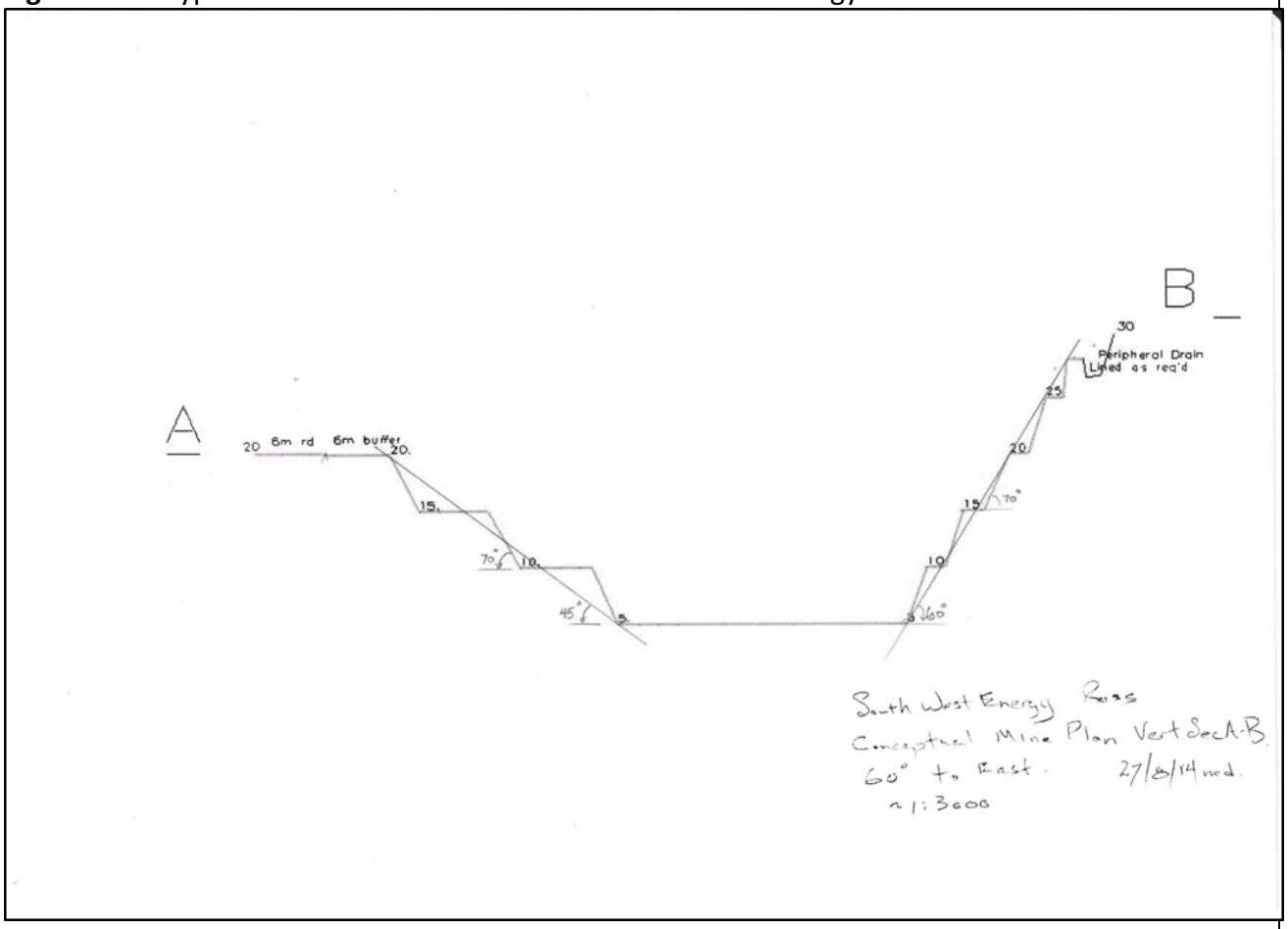


Figure Two: Typical Pit Cross Section – MP53355 Southwest Energy Ltd



3. What are the proposed hours of operation. Please differentiate between winter and summer if applicable, and state if some time will be utilised for maintenance only.

Work is proposed to occur between 0700 – 1900, 7 days a week.

4.What is the proposed duration of the mining?

Based on the current information held by the applicant, it is expected that the known mineral resource will be mined out within 12 months. However, there is scope for further exploration to be undertaken during mining activities. This in turn may extend the expected mining duration.

Given the above and the nature of the extractive industry, the term requested for any consent that is granted as a result of this application is 5 years.

5. Will it be necessary to run any machinery for 24 hours (eg water pumps)

No.

6. Describe the topography of the site and whether this will be altered during and after mining is completed

Mining Permit MP53355 lies to the south west of Flagstaff Hill. The permit area ranges from native forest dominated hillsides and gullies to land suitable for grazing. The permit also captures part of McLeods Road and associated road reserve.

The land that is the subject of this application is relatively flat and sits at the toe of Flagstaff Hill. The area is shown on the attached Annexure One – Application Area. The existing topography of the site is generally flat with a small gully towards the southern end.

Mining will involve the excavation and removal of overburden and gold bearing gravels. This material will then be backfilled, levelled and contoured. Contouring will be completed with a view to replicating the natural drainage patterns of the land once mining and rehabilitation have been completed.

Typically mining results in a rise in ground level due to the swell caused by disturbing the natural gravels. This will result in a slight rise of the application area. However it is not anticipated that this rise will result in significant changes to the topography of the application area.

7. How deep is the resource expected to be? Does this vary across the site?
Auriferous gravels are expected to be encountered up to 20 m in depth from surface. This is based on a best estimate and what is known from previous exploration works in the area.

8. Is a batter strip or setback proposed from adjoining boundaries or roads? Please specify what these will be? *Please refer to your site plan which should indicate any roads, property boundaries and setbacks proposed*

Setbacks are proposed to occur from the new alignment of McLeods Road. As previously described the alignment of this road is proposed to change from its current location to 1 m back from the road reserve boundary. This 1 m set back will be used to construct a water table to capture run off from the road itself.

Figure Three shows the typical cross section of the proposed road construction.

The new alignment will be constructed to allow for a 6 m width of the road which replicates the current standard. A further 6 m buffer will be constructed with edge protection between the road and mining operations.

A 1 m buffer will be observed from the existing water race to the east. As previously discussed it is proposed to clean this water race out and use it as a peripheral drain to capture stormwater before it enters the site,

9. Please discuss whether the mining will affect stability or erosion of land and if mining methods will be used to reduce these potential effects.

Mining activities have the potential to cause or exacerbate erosion through the disturbance of soils and excavation of gravels. Land stability could also be adversely effected by mining activities if not managed appropriately.

The applicant has previous engaged Field Technical Services to complete an assessment and develop a mine plan to mitigate against potential adverse effects. This plan is attached to this application and the mining methodology will follow this plan. This plan is attached to this application as Annexure Two.

It is important to note that the Mine Plan allows for some variations to the proposed pit design and slope angles to deal with any issues as they may arise during mining activities. Any variations made will be done with the view to improving site management and reducing or mitigating effects of the mining operation on land stability.

LANDSCAPE & AMENITY

10. Describe the surrounding area with reference to the closest occupied sites.

Mining Permit MP53355 encompasses approximately 89 hectares of land to the south of Ross. This permit covers a variety of land including native bush, pasture and formed road (McLeods Road). The permit borders a number of other active mining permits including Mining Permits MP50125, MP41446, MP53078 and MP51686.

Annexure Three : 'Closest Occupied Sites' shows the location of the nearest residential sites.

There are a number of other active mining and exploration activities occurring the local area including Birchfield's Ross Mining, Southwest Energy Ltd, NZG Limited and McKay Mining Ltd.

The closest occupied sites lie to the north of the proposed mining area and are used as residential dwellings.

The nearest property is owned by the Hende Family Trust and is occupied on an intermittent basis. This property is approximately 85 m from the closest boundary of the property to be mined. The topography and existing vegetation will act as a buffer to any landscape and amenity effects. The applicant is currently consulting with the landowner in regard to any further required visual screening. This may include a planted earth bund to screen mining operations.

Should consultation with this landowner require this the applicant will include details in any annual work programme that may be required by any resource consent that is granted as a result of this application.

The next closest occupied site is at the corner of McLeods Road and is owned by B. M Anderson.

There is existing vegetation in place between this residence and mining operations and there will be no mining visible from this residence.

A further occupied site is located between these two properties mentioned above and is occupied by S. Breeze. The applicant has undertaken a title search and cannot find a title for this property nor evidence of ownership.

Nevertheless, the mining operation will occur some 400 m away from this location and will not be visible.

The applicant has previously engaged Landscape Architects Simon Ferrick Ltd to assess the site and proposed mining operations in relation to landscape and amenity. The report produced as a result of this assessment is attached to this application as Annexure Four.

This report find that the main landscape and visual issues associated with this proposed mining operation relate to the views from the State Highway and by the users of McLeods Road.

Overall, the effects of the proposed mining operation are considered to be no more than minor for the following reasons:

- The site has been cleared of vegetation under an existing resource consent (Westland District Council RC140001) and no further vegetation removal is proposed.
- The mining activities will have a limited viewing audience.
- The main viewing audience is some distance away.
- The activities of mining are visually prominent with neighbouring landscapes.

Overall, the report concludes:

"*The overall character of the area will not be compromised by the proposal. The greatest potential for the site to be seen is from some distance away by the users of State Highway 6. Due to the distance between the viewer and the site, the mining operation will have minimal effect visually. The areas that have been cleared of vegetation can be seen from some locations along State Highway 6, but this is in context within the foreground where the Mikonui River banks are steep and dominate the visual catchment also being void of vegetative cover.*"

11. How will rehabilitation of the sites be undertaken and over what time period will this occur?

Rehabilitation will occur once there has been sufficient mining undertaken to allow for backfilling to occur. Tailings will be backfilled into the mine pit as appropriate.

After the tailings have been backfilled the overburden and any growing material will placed on top. This material will then be levelled and contoured in anticipation of use for livestock grazing or other land use that the landowner deems appropriate.

The applicant intends to the leave the realigned McLeods Road where it is post mining. There is no operational or safety concerns with leaving the new alignment in place therefore it has been decided to reduce any unnecessary work by leaving the new alignment as permanent.

The safety bunds will be removed as once the mine pit is filled, there will be no further safety considerations requiring these bunds to be in place.

The screening location on MP41446 will be rehabilitated as per the conditions of the DOC access arrangement and concession and is likely to be used for further mining activities if deemed appropriate. The haul road will remain in place as will be crossing of Squatters Creek to facilitate further mining activities within MP53355 and MP41446.

12. Will the mining activities be visible from other sites?

Yes, mining will be visible from parts of McLeods Road and the property owned by C. Hende. Some aspects of the initial operation may also be visible from the grazing land owned by Mikonui Family Trust and from some parts of State Highway 6.

The landscape assessment previously referenced in this application deals with the potential effects of this proposed mining operation on surrounding sites.

Please refer to Annexure Four for further information in relation to site visibility.

13. Is any natural screening in place, or is any proposed?

Yes, there is existing vegetation between the mining operation and neighbouring properties.

During the application process the applicant reviewed the existing QEII Trust covenants currently registered on the West Coast. It was found that the area of bush that screens the Anderson property from the mining operation is covered by a QEII Covenant. This provides for a high level of protection for this vegetation and the screen that this vegetation provides can be relied upon to remain in place, further reducing visual intrusion from the proposed mining activity and this property. The location of this covenant is shown on Annexure Three – Closest Occupied Sites.

The applicant is currently engaged in consultation with the Hende's and will construct an earth bund to provide screening at the boundary if required.

A safety bund will be constructed at the boundary of the new alignment of McLeods Road and the mine pit. While this is safety focused this will also provide screening of the mining operation from the road.

14. Will any buildings be needed on site? Where will these be located and will they be removed at the completion of mining?

No buildings are required as a result of this activity.

ACCESS & TRAFFIC EFFECTS

What are the proposed vehicle movements to and from the site each day?

There will be no increase in light vehicle movements along McLeods Road as a result of this mining operation. At present there is up to 8 vehicle movement a day associated with the mining operation at Squatters Creek.

This will be continued with this proposed mining activity.

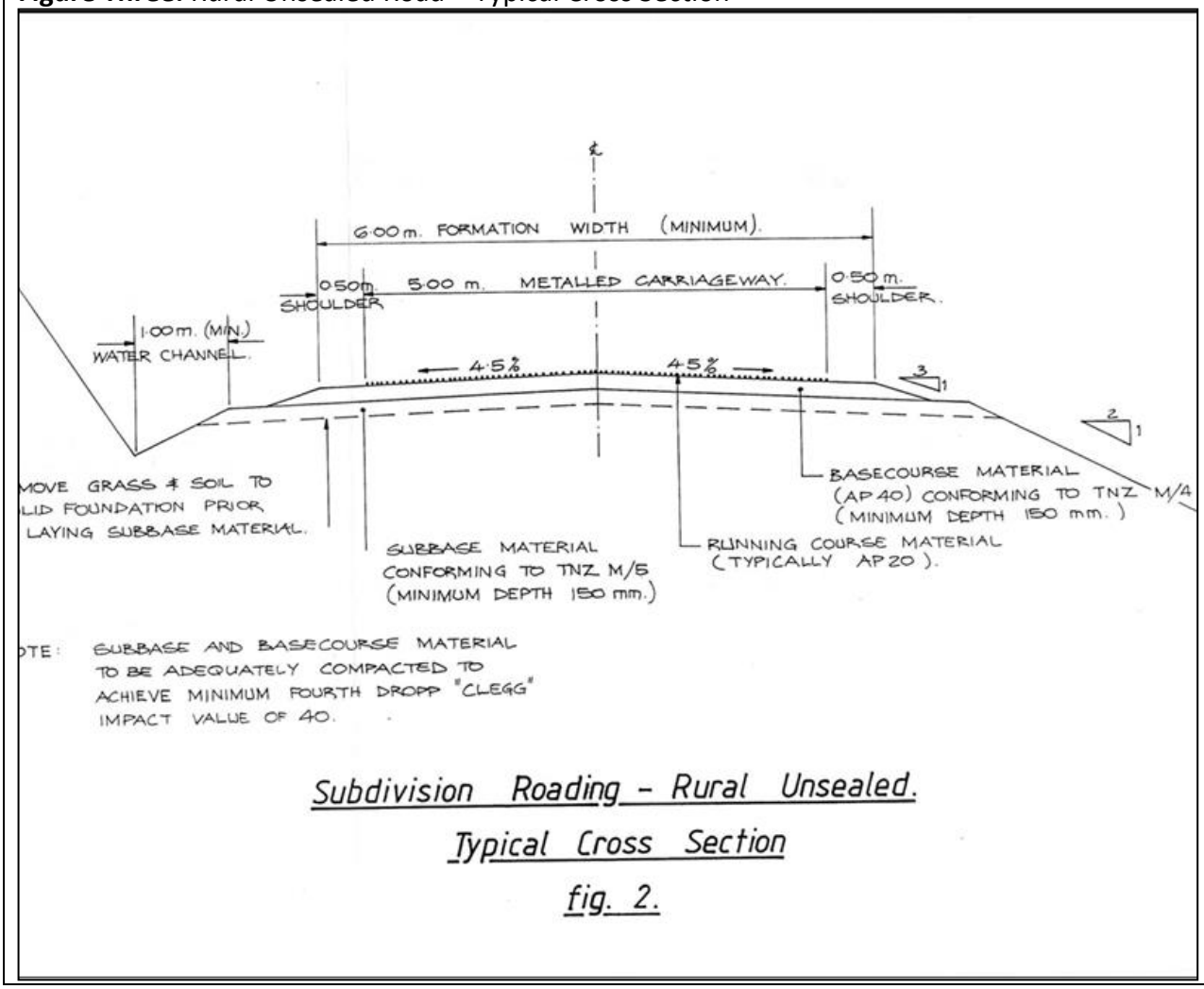
Due to the proposed mining methodology and location of the gold recovery plant, there will be an increase in heavy vehicle movements along McLeods Road.

For this reason the applicant has applied to have this section of McLeods Road from the mining area to Squatters Creek classified as a Construction Zone. This allows for the use of heavy vehicles along this road.

The applicant has also committed to widening this road in places as and when required.

The standard design criteria for a rural unsealed road will be used in the construction of the new alignment and any widening aspect. This is shown in Figure Three below:

Figure Three: Rural Unsealed Road – Typical Cross Section



Previous applications for mining related resource consents have resulted in concerns being raised by McLeods Road residents about the access to McLeods Road from State Highway 6.

This application is not seeking to increase the traffic movements through this intersection and a number of improvements have been made to the approach to McLeods Road. A restricted speed limit of 30 kilometers per hour has been imposed, a warning sign requiring road users to turn lights on and a safety mirror has been installed to provide greater visibility for drivers along the section of road close to the residences.

The proposed production scheduling will involve up to 160 mine vehicle movements per day along McLeods Road.

Are the accessways or roads used to access the mine site, existing or proposed to be formed?

Access to the mine site will be via an existing access way. This access will be further developed through the construction of a ramp to gain access to the auriferous gravels as per the details outlined in the attached mine plan (Annexure Two).

McLeods Road will be realigned within the boundaries of the road reserve to further facilitate mining activities and the efficient mining of the permit area.

If the access if off the State Highway, it will be likely that Council will find NZTA affected and you are encouraged to consult and obtain NZTA approval prior to lodgement.

ARCHEAELOGICAL AND HERITAGE EFFECTS

Please list any heritage features on site that are listed in the District Plan, or listed by the New Zealand Archaeological Association as an archaeological site (available on http://nzaa.eaglegis.co.nz/NZAAPublic/). If there are heritage features on site, it is likely that the approval of the New Zealand Historic Places Trust will be required. Similarly, an archaeological assessment will be required to understand the effects on the heritage values.

Please discuss any mitigation measures in relation to heritage values on site (ie, exclusion areas, or documentation approving the modification of a heritage item)

There are no known Archaeological or Historic Sites within the proposed mining. However the applicant has initiated discussions with Underground Overground Archaeology in relation to archaeological issues.

NOISE

The noise limits within the rural zone are:

(d)	**Noise** (all activities except forestry, and agricultural activities) ▪ 0700 - 2100 hrs Mon - Fri ▪ 0700 - 1800 hrs Saturday	55dBA L_{10} at any point within the notional boundary of a residential activity	55dBA L_{10} at any point within the notional boundary of a residential activity
	▪ all other times including public holidays	45dBA L_{10} at any point within the notional boundary of a residential activity	45dBA L_{10} at any point within the notional boundary of a residential activity

If your proposal is sited in the vicinity of residential allotments, it is likely that a noise assessment by a suitably qualified person will be required to be provided. It is expected that this assessment will address the noise generated by the activity, and make an assessment of who may be affected by the proposal.

Will your proposed activity produce any noise that will be heard at the boundary of the site? Please describe potential noise effects caused by the activity, and any measures proposed to reduce these:

The applicant has undertaken an assessment of the noise generated from the proposed mining machinery.

An assessment was also undertaken in relation to sensitive receivers in the vicinity of the proposed mining operation.

There are 3 residential dwellings on McLeods Road:

1. Hende Family Trust
2. S. Breeze
3. Mikonui Family Trust

The Hende Family Trust property is approximately 85 m distant from the closest point of mining operation. When mining occurs in this area it will be within the mine pit that has been developed as mining has progressed through the freehold property.

It is also proposed that a noise reducing bund is constructed on the boundary of the land owned by Mr Dillon that of the Hende Family Trust to further reduce noise.

The Breeze residence is the next closest being some 300 m distant from the proposed mining area. This residence is sheltered by existing vegetation and topography and it is not anticipated that noise generated as a result of this mining operation will be within the parameters outlined in the Westland District Plan at this location.

Further to this, the applicant has undertaken a review of property parcel ownership available through Land Information New Zealand and can find no evidence of a property allotment in this location.

The third and last residential dwelling is owned by Mikonui Family Trust is located some 400 m distant from the proposed mining operation.

The topography and existing vegetation will serve to reduce any noise effects from the proposed mining operation on this property.

There is a documented QEII Trust Covenant on the land owned by the Mikonui Family Trust. This will provide further protection of the existing vegetation and act as a further noise reducing buffer.

It has previously been accepted through neighbouring mining related resource consent applications that the ambient noise levels within the rural zone in the Westland District on a fine calm day are between 30 – 40 dB.

It is also important to consider the permitted baseline of noise within the vicinity of the proposed mining operation.

The Westland District Plan and the West Coast Regional Council provide for a number of activities to be undertaken within proposed mining area, without resource consent.

These activities include agricultural activities (humping and hollowing, pasture development) forestry, advanced exploration activities (drilling, test pitting) and earthworks.

The applicant also holds an existing resource consent from the Westland District Council that authorises the removal of vegetation from the land owned by Mr Dillon. This work has been completed using similar machinery to what will be employed as part of this proposed mining activity, it is therefore the applicant's position that the proposed mining activity does not represent a significant increase in machinery used than would be used in the above activities as a permitted activity.

The applicant has undertaken noise testing on similarly rated machinery at another operating site using a Lutron SL-4030 Sound Meter (a copy of the specifications of this meter has been included as Annexure Eight. This assessment resulted in a noise level of 42 dBa being recorded at a distance of 250 m across open, level ground with no natural noise buffers.

As described previously in this section, there is natural vegetation in place between the nearest residential dwellings and the proposed mining activity. Coupled with this is the natural topography and the increasing depth at which mining will be completed, the applicant considers the Hende property the only property likely to be affected by noise generated from the proposed mining operation.

As discussed previously, the applicant will construct an earth bund at the boundary of the Dillon and Hende property to further mitigate noise effects on this property.

HAZARDOUS SUBSTANCES

Will refuelling occur on site? What methods will be used to ensure substances do not enter waterways or the ground?

Yes, refuelling will occur on site. This will be completed under the direct supervision of the machine operator to ensure that any risk of spillage is reduced. Refuelling will occur away from waterways to ensure that if a spill does occur any risk of water contamination is avoided.

Fuel will be stored in the existing bunded fuel cells on site. This will not exceed 2000 L.

Excavators and miscellaneous mining equipment will be refuelled via a mobile fuel cell. This will stored at the processing site.

Will any other hazardous substances be stored or used on site? If so, please describe any effects on the environment and how this will be managed

No other hazardous substances will be stored on site.

EFFECT ON WATERBODIES AND RIPARIAN MARGINS

Will the mining occur adjacent to or in the vicinity of waterbodies? No ☐ Yes ✔

Physical mining activities will not occur adjacent to or in the vicinity of waterbodies, however the upgraded access to the processing area will require a crossing to be installed over the bed of Squatters Creek.

This crossing will be constructed with either a bridge or culvert in line with West Coast Regional Council's Land and Water Plan Rule 23 Culverts, Fords and Bridges. A copy of this rule is attached as Annexure Five.

The processing of gold bearing gravels will mean that sediment laden process water will be produced in quantities that will require treatment before this water could be discharged off site. The applicant currently holds resource consents with the West Coast Regional and Westland District Councils that authorise the gold mining activities and associated discharges within Mining Permit MP50125 and MP41446.

This proposed mining activity seeks to continue the use of the existing processing plant and associated water management infrastructure.

The existing site has been the subject of a number of reports in regard to water management practices and is operating effectively in a range of weather conditions. As mining works are completed on MP50125 and MP41446 and the ground is rehabilitated the existing water management ponds will become oversized in relation to the settling capacity required for the processing plant. These will provide for effective treatment of process water before discharge.

If yes, will any riparian margins be retained? What distance will the closest mining activity be from the waterway? Please indicate these on the site plan.

Aside from the disturbance of the riparian margin of Squatters Creek associated with the construction of the crossing described above, riparian margins will be retained.

The disturbance of the riparian margin of Squatters Creek will be undertaken under the provisions of Rule 2 of the West Coast Regional Councils Land and Water Plan. A copy of this rule has been attached to this application as Annexure Six.

How will effects on the water way be managed?

The construction of a vehicle crossing point will avoid damage to the bed and banks of Squatters Creek as a result of vehicle crossings. It will also avoid unnecessary release or introduction of sediment to this waterbody.

The applications to the West Coast Regional Council will deal with the effects of discharges from the mining operation to receiving water bodies.

Will natural drainage of the surrounding area be affected?

Yes, the construction and excavation of the mine pit will alter the existing natural drainage pattern of the site.

The realignment of McLeods Road will also alter the existing drainage patterns of the road side drains and water tables.

These effects will be no more than minor as the catchment area will not change, nor will the rate of run off change significantly.

The existing drainage discharges will remain as the route for discharges that eventually reach the Mikonui River.

SITE PLAN

Please enclose a site plan which depicts the proposed mining.
Please show the areas that are proposed to be mined, the areas that will not be disturbed, the access to the site, the location of the screen(s), the location and size of any stockpiles and settling ponds, define any setbacks from boundaries and buffer zones.
On the same plan, or a different sheet, please show any waterways, areas of indigenous vegetation, dwellings, or items of interest such as archaeological sites.

Please refer to Annexure Seven for a detailed site plan.

VEGETATION CLEARANCE

If your mining will involve the clearance of indigenous vegetation, you will need to include this in your application and answer the questions below. Council may require a report from a suitably qualified expert to address the ecological effects of this clearance. Please provide as full an assessment as possible.

Does your mining involve clearance of indigenous vegetation? Yes ☐ No ✔ *if no, please skip this section.*

The applicant has previously undertaken the removal of indigenous vegetation within the mining area under Westland District Council Resource Consent RC140001.

What is the area of the proposed clearance?

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What is the overall area and type of vegetation cover on the property?

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Has the proposed clearance area been previously modified by human activity? If Yes, How was it modified? When was it modified? And what proportion of the area has been modified?

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What are the main vegetation species within the proposed clearance area?

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Is the vegetation in the proposed clearance area similar to vegetation in surrounding areas? If not, what are the main vegetation species in the surrounding area?

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Does the proposed clearance area provide an important link to other vegetation in the vicinity?

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To what extent are weeds/exotic plants present in the proposed clearance area?

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Does the proposed clearance area contain indigenous species/habitat that are unusual, rare or unique to that area? If Yes, what are they?

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Is there a covenant or New Zealand statue on the proposed clearance area? If Yes, what are the details of this?

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Please provide an assessment of the proposed activity against the relevant provisions of:

- National Environmental Standards
- Other regulations
- National Policy Statements
- New Zealand Coastal Policy Statement
- Regional Policy Statement or proposed Regional Policy Statement
- Plan or proposed plan

Please pay particular attention to the Objectives and Policies which are set out in Parts 3 & 4 of the Westland District Plan, and also the rules relating to this application. The Westland District Plan is available on our website at www.westlanddc.govt.nz.

New Schedule 4 Requirements

As of 3 March 2015 the new requirements associated with Schedule 4 of the Resource Management Act (1991) have come into force.

This section of the application document seeks to address these new requirements in addition to what is required in the consent application form.

The information required to be included in consent applications pursuant to Schedule 4 Clause 2 (1) a – f is included in the application form completed within this document.

Further to this information an assessment of the application against any relevant document provided for in S.104(1)(b) is required.

The applicant recognises that the following documents require assessment:

- West Coast Regional Policy Statement
- West Coast Regional Council Land and Water Plan
- Westland District Plan

This section will provide an assessment of these documents.

West Coast Regional Policy Statement

The West Coast Regional Council is required under S.60 of the Resource Management Act (1991) to prepare a regional policy statement (RPS). This RPS sets out the objectives and policies for managing the resource management issues within the West Coast Region.

The key resource management issues are set out in separate chapters of the RPS and where relevant to this application have been set out below.

- Chapter 6 – Heritage

Chapter 6 of the RPS sets out the issues, objectives, policies and methods for managing heritage effects under the RMA.

The key issues are:

ISSUES:
6.1 Adverse effects of resource use and development on heritage values.
6.2 The loss of heritage values and archaeological sites.

The following objective is set out to deal with the issues identified above:

OBJECTIVE 6: To avoid, remedy or mitigate actual or potential adverse effects of resource use, development or protection on heritage and archaeological sites and values that contribute to the West Coast's distinctive character and sense of identity.

The following policy will be implemented to meet the above objective:

HERITAGE POLICY 6

POLICY 6.1 Promote the identification and protection of heritage values of the region, which include the following:

a) Archaeological sites;
b) Places or areas of special historical, cultural or architectural interest or significance;
c) Places or areas of intrinsic, recreational or amenity value or of visual appeal.

Matters to be considered when assessing heritage places or sites include:

a) The extent to which the place reflects important or representative aspects of New Zealand history;
b) The level of association of the place with events, persons, or ideas of importance in the history of the (district/region);
c) The importance of the place to Poutini Ngai Tahu;
d) The level of community association with, or public esteem for, the place;
e) The potential of the place for public education;
f) The level of technical accomplishment or value, or design of the place including the rarity of technical accomplishment or design;
g) The symbolic or commemorative value of the place;
h) Whether it is an historic place known to date from early periods of the district's settlement i.e., such items are likely to be included in the schedule;
i) The rarity of the type of historic place; and
j) The extent to which the place forms a key part of a wider historical and cultural complex or historical and cultural landscape.

This application has given effect to the heritage issues, objectives and policies through the completion of an archaeological assessment by Underground Overground Archaeology Ltd in relation to the possible historic sites within the application area.

This report provides the consent authorities with the required information to assess the values of the sites with the policy outlined above.

The heritage effects are further outlined within the application document.
Chapter 7 deals with the resource management issues associated with the use of soils and rivers. The relevant issues when considering this application are:

ISSUE 7.1 Losses of the life supporting capacity of soils as a result of erosion and land use.

ISSUE 7.2 Adverse effects of activities and natural processes on river beds and banks including undermining of structures, increased erosion and damage to aquatic ecosystems.

Given the above issues the following objective is provided to deal with these:

OBJECTIVE 7.1 The sustainable management of soil to meet a range of uses, including the reasonably foreseeable needs of future generations and the prevention of further long-term degradation of the soil resource; and to maintain or restore the soil quality factors that contribute to its life supporting capacity including:
a) Soil depth, structure and fertility;
b) Soil fauna;
c) Organic matter;
and to retain soils of ecological, scientific or cultural value.

OBJECTIVE 7.2 To avoid, remedy or mitigate degradation of water resources and aquatic ecosystems resulting from the instability, or use or development, of the beds and banks of rivers.

In order to achieve the above objectives the following policy is provided:

SOILS AND RIVERS POLICY

POLICY 7. ***To sustain the potential of the soil and water to meet the reasonably foreseeable needs of future generations, activities will be managed so that adverse effects are avoided, remedied or mitigated, including those effects caused by:***

(a) Erosion, soil loss or the potential for soil loss;
(b) Instability of river channels, land and structures;
(c) Contamination of soil, groundwater and surface water;
(d) Long term decline in life supporting capacity of soil and land;
(e) Decline in the quality of aquatic ecosystems and other instream values;
(e) Damage to the relationship of Poutini Ngai Tahu and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;
(f) Damage to ecosystems, including the quality of aquatic ecosystems and other instream values, landscapes and habitats;
(g) Increased flooding and runoff.

This application sets out the site management practices that will be undertaken to meet the above policy. These are set out throughout the application document and include land preparation including the managed stripping and stockpiling of soil and overburden and the associated rehabilitation that will return the site to a state similar to what was present before mining activities commence.

The water management practices that are to be used on site are also provided in some detail and when coupled with the existing resource consents that govern the quality of the water discharged from site also meet the required objectives in relation aquatic ecosystems.

Chapter 8 then goes on to deal with the issues associated with surface water quality and the following issue is identified:

ISSUE 8.2

Surface and groundwater quality.

Point and non point source discharges into water, interference with waterways and land use practices can affect water quality, causing adverse environmental effects which include one or more of the following:

a) Human health risk;

b) Conspicuous change in colour or clarity;
c) Objectionable odours;
d) Destruction of aquatic ecosystems and habitats;
e) Consequent loss of ecological, cultural, aesthetic, fishery, amenity and recreational values; and
f) Impacts on the relationship between Poutini Ngai Tahu and their culture and traditions associated with ancestral waters.

The following objective is provided for in relation to the above issue:

OBJECTIVE 8.2.1 To maintain, and where water quality is degraded, enhance the quality of the region's surface, ground and coastal water resources by:

a) Recognising and providing for the relationship of Poutini Ngai Tahu and their culture and tradition with their ancestral water;
b) Ensuring that land and water resources are used and managed so that their life supporting capacity, intrinsic, amenity, recreational and cultural values are maintained or enhanced by :
(i) Sufficient flow or levels in natural water bodies to achieve desired water quality; and
(ii) Avoid, remedy or mitigate the adverse effects of soil loss, erosion and the contamination of water bodies with chemicals, sediment, bacteria or nutrients.

The following water policies are then outlined to meet the objectives outlined above:

WATER POLICIES 8.2

POLICY 8.2.1 Avoid, remedy or mitigate the adverse effects of discharges into surface, coastal and ground water particularly where these cause or are likely to cause:

a) Risks to human health;
b) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
c) Any conspicuous change in the colour or visual clarity;
d) Any emission of objectionable odours;
e) The rendering of fresh water unsuitable for consumption by farm animals;
f) Any significant adverse effects on aquatic life;
g) Loss of ecological, cultural, aesthetic, fishery, amenity and recreational values; and
h) The relationship of Poutini Ngai Tahu and their culture and traditions with ancestral water and other taonga to be compromised.

Policy 8.2.1 corresponds with Water Policy 8.3.2

POLICY 8.2.2 To maintain, enhance or restore water quality in surface, coastal and ground water, taking into account:

a) The public uses of water resources;
b) The sensitivity of the receiving waters to adverse effects;
c) The current state of technical knowledge and treatment and disposal options for discharges;
d) Existing lawful discharges;
e) The relationship of Poutini Ngai Tahu and their culture and traditions with ancestral water; and
f) The setting of progressively higher water quality standards water bodies that are unacceptably degraded.

Policy 8.2.2 corresponds with Coastal Environment Policy 10.5.1.

POLICY 8.2.3 To promote, where appropriate, well-vegetated riparian margins while considering the need to reduce threats caused by flooding and erosion.

POLICY 8.2.4 To manage land use practices in order to avoid, remedy or mitigate the entry of soil, silt and other contaminants into the region's water bodies.

As discussed previously the applicant currently holds resource consents that authorise the discharge of treated process water from the mining operation into Squatters and Black Creeks. These resource consents impose water quality conditions on the discharged water and provide protection for the receiving environment.

This proposed activity will not increase the effects associated with this consented discharge and is therefore considered consistent with the RPS in relation to water issues.

Chapter 9 then deals with Habitats and Landscapes within the West Coast Region. To this end the applicant has commissioned a landscape assessment from Landscape Architects Simon Ferrick. The associated report concluded that the proposed mining activities would not have a more than minor effect on landscape or amenity.

Therefore this proposed activity is consistent with this section of the RPS.

Chapter 16 deals with the mineral resource within the West Coast Region and recognises the importance of the minerals industry to West Coast communities in terms of providing for their wellbeing. There are two resource management issues that are identified within this chapter which are:

ISSUE 16.1 Reduction in the ability to evaluate, use and develop mineral resources as a result of land uses above or in close proximity to mineral deposits.
ISSUE 16.2 Adverse effects of the use and development of mineral resources on other natural and physical resources.

The following objectives are outlined in relation to the above issues:

OBJECTIVE 16.1 Options for the evaluation, use and development of mineral resources are not unecessarily hindered while other natural and physical resources are sustainably managed.
OBJECTIVE 16.2 The ability to evaluate mineral resources is protected.

Chapter 8 then goes on to outline the policies that will be implemented to meet the objectives outlined above:

MINERALS POLICIES

POLICY 16.1 Recognise known mineral resources and have regard to the effects of changes in land use patterns on potential options to extract them when making resource management decisions.

POLICY 16.2 Recognise that the extraction of mineral resources may be incompatible with other land uses and vice versa.

POLICY 16.3 Ensure that the adverse effects of the extraction of mineral resources are managed in a manner that is consistent with objectives, policies and other provisions elsewhere in this RPS.

This application has given effect to the actual and potential adverse effects that may be caused by the proposed mining activity. The application further sets out the measures that will be implemented to avoid remedy or mitigate these effects during the course of the activity to a point where the actual or potential adverse effects are considered to be no more than minor.

West Coast Regional Council Land and Water Plan

The West Coast Regional Council's Land and Water Plan sets out the objectives, policies and rules that will be used to assess and control the activities on land, in lake and riverbeds and that can affect water within the West Coast Region.

The following objectives and policies are provided for within Chapter 4 of this plan and are relevant to this application:

Objective:

4.2.1 To avoid remedy or mitigate adverse effects from land disturbance so that the region's water and soil resources are sustainably managed.

Policies:

4.3.1 To manage the disturbance of land and vegetation in order to avoid remedy or mitigate any adverse effects on:

- **(a) The stability of land (e.g. slumping, subsidence, or erosion), river banks, and riverbeds and coastal margins;**
- **(b) Water quality, including clarity, turbidity, and temperature changes, and in stream values;**
- **(c) Changes in water level including water table;**
- **(d) Public access to rivers, lakes, and their margins and the coast;**
- **(e) Natural character, and aquatic ecosystems;**
- **(f) Soil depth and soil fertility;**
- **(g) The integrity of property, structures, or effects upon the operation or maintenance of regionally significant infrastructure;**
- **(h) Cultural and recreational values; and**
- **(i) Significant indigenous vegetation and significant habitats of indigenous fauna.**

This application is consistent with this policy and information will be provided within the application to demonstrate management practices that will meet the requirements of this policy including a detailed mine plan, water management practices, site preparation and rehabilitation.

4.3.3 To manage the disturbance of riparian margins to:

- **(a) Maintain or enhance water quality (including clarity, turbidity, and temperature), and in-stream values, (including aquatic ecosystems);**
- **(b) Promote soil conservation;**
- **(c) Ensure that existing public access to water bodies is maintained or enhanced;**
- **(d) Protect the natural character of the coastal environment, wetlands, and lakes and rivers and their margins, from inappropriate use and development;**
- **(e) Enable the maintenance and safe operation of regionally significant infrastructure.**

Any riparian disturbance will be undertaken within the parameters of permitted activity rules that will be expanded upon in a following section of this document.

4.3.4 To manage the maintenance of existing land drainage activity to avoid, remedy, or mitigate adverse effects on receiving water bodies or property.

The mine plan previously referenced outlines the development of the mining operation and provides for land management techniques to avoid significant changes to drainage and impacts upon neighbouring properties.

The application also contains information relating to the management of stormwater within the site that will avoid any adverse effects on neighbouring properties.

Chapter 8 of the Land and Water Plan deals with surface water quality and outlines the following relevant objectives and policies:

8.2 Objectives

8.2.1 To maintain or enhance the quality of the West Coast's water.

Policies:

8.3.5 When considering applications for resource consents to discharge contaminants to water to have regard to:

(a) The nature of the discharge and the sensitivity of the receiving environment to adverse effects;
(b) The financial implications, and the effects on the environment of the proposed method of discharge when compared with other options;
(c) The current environmental mitigation technology and the likelihood that the proposed method can be successfully applied;
(d) The cumulative effects of discharges of contaminants and the assimilative capacity of the water body and actual or potential effects in the coastal marine area; and
(e) Any relevant industry codes of practice or guidelines relating to the management of potential discharges.

8.3.6 Mixing zones will be required for the discharge of contaminants to water. These will be limited to the extent necessary to take account of:

(a) Water quality classes;
(b) The size and sensitivity of the receiving environment;
(c) The matters identified in Policy 3.3.1;
(d) The physical processes acting on the area of discharge; and
(e) The particular discharge, including contaminant type, concentration, and volume.

As discussed previously, there are existing resource consents that allow the discharge of treated mine water from the applicant's existing mining activities on MP41446 and MP50125 that are proposed to be used as part of this activity.

This activity will not increase the effects from the existing discharge permits. Therefore it is considered that this application is consistent with the above policies.

Westland District Plan

The Westland District Plan sets out a number of objectives and policies relating to the management of natural and physical resources within the Westland District. This section of the application document will assess the relevant objectives and policies against the proposed mining activity.

Part 3 of the Westland District Plan sets out the objectives the District has identified in relation to key resource management issues.

The following sections have been identified as being relevant in relation to this application:

Part 3.2 Sustainable Communities

Objective 3.2.1 To establish levels of environmental quality for Westland which enable people and communities to provide for their social, economic and cultural wellbeing, while meeting the principles of sustainable management of natural and physical resources.

Any resource consent that may be granted as a result of this application will have conditions imposed to deal with any adverse effects that may be considered to be more than minor, where possible the application has sought to avoid, remedy and mitigate any actual or potential adverse environmental effects to a point where they can be considered no more than minor.

The development of this mining operation will provide for employment and economic opportunities for the Westland District allowing the local community to continue to provide for their social and economic well being.

Part 3.3 Image of the District

Objective 3.3.1 To recognise and promote Westland's image as a clean, green District.

The Landscape Assessment attached to this application has identified that the actual and potential effects of this proposed mining operation do not have significant adverse effects on the existing landscape values. Therefore the application is consistent with this objective.

Part 3.5 Maori Perspective

Objective 3.5.1 To pursue a partnership of consultation and participation between the Council and Poutini Ngai Tahu relating to resource management.

Objective 3.5.2 To recognise and provide for the relationship, culture and traditions of tangata whenua with their ancestral lands, water, sites, waahi tapu and other taonga.

This application does not adversely affect any culturally significant site.

The applicant will also be undertaking consultation with local iwi to ensure that their concerns are addressed in relation to this mining proposal.

Part 3.6 Mineral Resources

Objective 3.6.1 To enable people and communities to provide for their economic and social wellbeing through the efficient utilisation and development of mineral resources.

Objective 3.6.2 To safeguard the life supporting capacity of air, water, solid and ecosystems and avoid, remedy or mitigate adverse effects from the use and development of mineral resources.

Objective 3.6.3 To avoid, remedy or mitigate mining's adverse effects on natural environments, landscapes and waterways.

This application represents a significant investment in the minerals industry of the West Coast Region and Westland District, the development of this mining operation will continue to provide benefits to both the region and district through employment opportunities both directly and indirectly.

The applicant has identified an economically viable mineral resource within the application area

that will be most efficiently used and developed in conjunction with their existing mining operations to the east at Squatters Creek.

The application has been compiled with the input of mine engineers, geologists, planners and landscape architects to provide for all of the relevant operational requirements while providing the best level of environmental protection through the avoidance, remediation and mitigation of actual and potential adverse effects.

The utilisation of the existing water management infrastructure is an important part of this consideration as the investment in improvements of this system has shown that it can service the wash plant in an effective and efficient manner.

Part 3.7 Natural Environment

Objective 3.7.1 To recognise and provide for the unique values and importance of natural environments and ecosystems in Westland.

Objective 3.7.2 To recognise that the people of the district can provide for their needs within the context of sustainable management.

Objective 3.7.3 To protect the integrity, functioning, and health of indigenous ecosystems and maintain the current diversity of indigenous flora and fauna.

This mining proposal has been shown not to adversely affect the existing natural environment. The mining area is located on previously cleared privately owned grazing land. This land area does not support a significant natural ecosystem so the mining operation will impact on an existing ecosystem.

Nor does the application seek to undertake clearance of significant indigenous vegetation.

Given the above this application is considered consistent with the above objectives.

Part 3.8 The Land Resource

Objective 3.8.1 To avoid, remedy or mitigate adverse effects of land use activities on land and water resources.

Objective 3.8.2 To protect and maintain the productive potential of the higher quality soils in Westland District.

The mining area does not represent a significan land resource and there are no water resources within the physical mining area that will be adversely affected as a result of the mining operation.

Where practicable topsoil will be stripped and stockpiled for use in rehabilitation activities during mine development. The quality and quantity of the topsoil varies across the mining area and until further advanced exploration activities so the exact quantities are unknown.

Part 3.10 Landscape

Objective 3.10.1 To ensure development does not impinge on the integrity of landscapes in Westland.

Objective 3.10.2 To maintain and protect the existing scenic and open and diverse character of Westland District, dominated by natural dynamic processes.

Objective 3.10.3 To ensure that land uses, buildings and development have regard to the natural landscapes in which they are located or seek to be located.

The Landscape Assessment supplied as part of this application demonstrates that the proposed mining activity will not cause more than minor adverse effects on the existing landscape values of the area.

Part 4 then goes on to develop the policies that will be implemented to achieve the objective set out in Part 3. The following policies within Part 4 of the Westland District Plan have been identified as being relevant to this application.

Part 4.4 Amenity

Policies

A. The effects of activities which can have significant adverse effects on amenities and the well being of residents shall generally be avoided, remedied or mitigated.

This application demonstrates that the mining operation can be managed so that the actual and potential affects that could cause significant adverse effects on the well being of residents. This includes the traffic effects, noise effects and landscape effects.

All of which have been demonstrated to be no more than minor.

The widening and realignment of McLeods Road within permitted activity guidelines will avoid traffic safety issues. The provision for noise reduction bunds will mitigate against any actual or potential noise effects and the location and design of the physical mining area has reduced the effects on landscape values.

D. The safe handling, management and disposal of hazardous substances in a manner which protects community well-being, road safety, and soil and water resources shall be encouraged.

Fuel will be stored in approved fuel cells that are bunded and secured. Refuelling of machinery will be completed under the direct supervision of machine operators to ensure that the chance of spills are avoided or reduced.

E. The effects of activities which can be seen as adversely affecting the overall environmental amenity of the District shall be avoided.

Gold mining is recognised as an important industry to the district and when appropriately managed does not cause more than minor adverse effects.

Part 4.5 Heritage

Policies

A. Buildings, places and items of significant historic, cultural or scientific interest and their relationship with places in Westland District should be preserved and maintained.

The applicant has commissioned an archaeological assessment of the application area that has been attached to this application.

This assessment identifies historical features that are to be impacted upon by the mining operation.

The main feature is the Prince of Wales Water Race. This application seeks to repair and use this feature as a stormwater cutoff drain. The applicant will be applying to Heritage New Zealand for an Archaeological Authority to complete this work.

The assessment provides an assessment of the values of this feature and overall the values are considered moderate – low given the historical modification and deterioration over time. Given the assessment and values associated with this feature it is considered that the activity is consistent with this policy.

Part 4.7 Land and Soil

Policies

B. Landuse activities in the rural area should avoid, mitigate and remedy their adverse effects on adjoining landuses, the community and ecosystems.

C. The establishment of activities which degrade, erode or contaminate high quality soils should be avoided to safeguard their productive capabilities and to protect human and animal health and safety.

Mining activities typically require the disturbance of land and soil to gain access to the minerals contained within.

In this instance the soil and land is not considered high quality and the proposed mining activity will not cause significant adverse effects on any high quality soils or adjoining landuses, communities and ecosystems.

Part 4.8 Landscape

Policies

A. The continuity of the mountains to sea landscape in Westland particularly in the south of the District and significant landscape elements shall be protected by ensuring development takes into account the landscape setting.

B. The contribution of indigenous vegetation to the landscape character of the district shall be recognised and its clearance controlled.

C. Council will protect significant landscape areas, including natural features, in the District.

The previously referenced Landscape Assessment provides evidence that this proposed activity will not significantly adversely affect the existing landscape values.

There is no vegetation clearance proposed as part of this application.

The proposed mining area is not considered to be a significant landscape or outstanding natural feature.

Part 4.13 Mineral Resource

A. The establishment of mineral related activities should incorporate, as an integral component, measures to protect water quality and ecosystems, and appropriate rehabilitation of disturbed areas.

B. To require active rehabilitation of areas disturbed by mining activity to generally their original condition or another suitable condition as approved by the Council.

C. Ensure that the life supporting capacity of ecosystems is safeguarded and adverse effects of mineral related activities and associated earthworks on natural features and landscapes, indigenous vegetation and habitat, the natural character of the coast, waterways and their margins, historic and cultural sites, public access and amenity values are avoided, remedied or mitigated.

This application has given effect to the policies identified above. The proposed mining operation has included the use of the existing wash plant and associated water management infrastructure to ensure that the actual and potential adverse effects from the use and discharge of water from the mining operation can be managed to a point where they are no more than minor.

Rehabilitation will be carried out the standards required by the landowner and to avoid any ongoing adverse environmental effects. Disturbed area will be kept to a minimum during mining activities to reduce the level of effects that could occur from this disturbed ground, including contamination of stormwater, erosion of topsoil and land stability issues. Rehabilitation will be carried out progressively as the mining operation develops.

EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

EFFECTS ON THE ENVIRONMENT (POSITIVE OR NEGATIVE)

Will your proposed activity have any social or economic effects on people, including yourself as applicant: (e.g., employment)?

Yes ✔ No ☐

Will there be any new signage erected either off-site or on-site?

Yes ☐ No ✔

Will there be any property shading of neighbours or any impact on the privacy of neighbours?

Yes ☐ No ✔

Will the proposed activity alter the current use of the land?

Yes ✔ No ☐

Will additional parking off site be required?

Yes ☐ No ✔

Will there be increased traffic movements because of your proposal?

Yes ✔ No ☐

Will there be any lighting effects or glare created off site?

Yes ☐ No ✔

Will there be any generation of wastes by the proposed activity?

Yes ✔ No ☐

Will your proposed activity have any impact on the recreational use of the area?

Yes ☐ No ✔

Assessment against Part Two of the Resource Management Act 1991

Will your proposed activity have any impact on the coastal environment?

Yes ☐ No ✔

Will your proposed activity have any effect on the surrounding landscape or the visual amenity (views)?

Yes ✔ No ☐

Will your proposal have any impact on indigenous vegetation or habitat (e.g., forest, wetland)?

Yes ☐ No ✔

Will your proposal limit public access to the coastal environment, lakes, or rivers?

Yes ☐ No ✔

Will there be any activity on the surface of water bodies (rivers and lakes)?

Yes ✔ No ☐

Will your proposal have any impact on indigenous wildlife (birds, animals, fish, etc)?
Yes ☐ No ✔

Will your proposed activity have any effect on historical or cultural value?
Yes ✔ No ☐

If you have ticked **yes** to any of the above questions then please describe the effects for any of the boxes you have ticked:
Please describe what steps you propose to reduce or avoid the adverse effects on the environment you have identified:

Social or Economic Effects

The proposed mining operation will have positive social and economic benefits at varying levels across the local, regional and national economies.

This mining operation represents a significant financial investment by the applicant. There has been significant work involved in applying for and gaining the existing mining permit.

The applicant has also spent the previous 3 years undertaking mining activities on neighbouring mining permits MP41446 and MP50125. This work has involved gaining resource consents from WDC and WCRC coupled with the relevant permissions from the Department of Conservation. It is estimated that the applicant has invested upwards of $ 2 million in the local economy as a result of these previous works.

The mining operation that is the subject of this application will result in the creation of 8 full time equivalent positions and the engagement of a number of contractors for related work.

The applicant estimates that the operation will require $100,000 / per month of expenditure to operate.

The majority of this expenditure will be spent locally on fuel, wages and maintenance.

Any gold that is won as a result of the mining operation is sold locally and represents a contribution to the Gross Domestic Product of New Zealand.

Alter Use of Land

The land under application is currently used for intermittent livestock grazing and has been the subject of mineral exploration and testing activities previously.

The proposed full scale mining operation will temporarily alter the use of the land from livestock grazing to mining.

This application and the corresponding application with the West Coast Regional Council set out the methods for reducing any actual or potential effects from this activity. This includes the mine

plan previously referenced in this application, the water management infrastructure already in place associated with the wash plant, noise mitigation measures and limited areas of disturbance.

It is also important to consider the temporary nature of the likely effects, with mining proposed to be completed within 5 years the effects will be short term.

Traffic Effects

Landscape and Visual Amenity

As previously discussed within this application, Simon Ferrick Landscape Architects have provided a report on the actual and potential effects of the proposed mining operation on the existing landscape.

The overall conclusion of the report is as follows:

"*The overall character of the area will not be compromised by the proposal. The greatest potential for the site to be seen is from some distance away by the users of State Highway 6. Due to the distance between the viewer and the site, the mining operation will have minimal effect visually. The areas that have been cleared of vegetation can be seen from some locations along State Highway 6, but this is in context within the foreground where the Mikonui River banks are steep and dominate the visual catchment also being void of vegetative cover.*"

The entire report has been attached to this application as Annexure Four.

Land Boundaries

The boundaries shown on the attached Site Plan are identifiable. These boundaries have been taken from the Land Information New Zealand online data base and the shapefiles created using the QGIS software programme.

These boundaries can be marked out on the ground if so required.

Waste Generation

Waste will be generated as a result of this activity. This waste will be collected on a regular basis and disposed of at either the Ross or Hokitika Transfer Stations.

It is not anticipated that significant amounts of waste or rubbish will be generated. The applicant will ensure that any waste is collected and stored appropriately before disposal.

Impacts on Indigenous Wildlife

The proposed mining operation is not anticipated to cause any adverse effects on indigenous wildlife.

The applicant has previously removed vegetation from the mining area, there are no diversions of water bodies or significant disturbance to riparian margins as a result of this proposed activity.

The application area does not provide habitat for indigenous wildlife and therefore the adverse effects will be less than minor.

Historic Sites

As previously discussed there are no known historic sites within the application area. However a potential water race has been identified at the boundary of the freehold and DOC land to the north east of the application area.

This potential water race has been identified as a suitable location for a clean water cut off drain and if permission can be gained from Heritage New Zealand in conjunction with advice from Underground Overground Archaeology.

Should this be determined as not achieved a 3 m buffer will be imposed on this potential water race and the cut off drain will be constructed against this buffer.

The applicant will also be applying to Heritage New Zealand for an Archaeological Authority to undertake this work.

A full assessment of historic values is provided in the report completed by Underground Overground Archaeology and is attached to this application as Annexure Nine.

SERVICING REQUIREMENTS

Will your proposal result in the need for new services (e.g. power, telecommunications, roads, water supply, etc)?

Yes ☐ No ✔

If yes, please describe what new services will be required:

……...

NATURAL HAZARDS

Is your site subject to flooding or inundation?

Yes ☐ No ✔

Is your site subject to landslides or land instability?

Yes ☐ No ✔

Is your site subject to erosion?

Yes ☐ No ✔

Is your site subject to contamination from any source?

Yes ☐ No ✔

If you have answered yes to any of the above questions, then what effects could the identified natural hazard/s have on your proposed activity?

……...

How do you propose to address the identified natural hazard/s?

……...

Will your proposed activity create or exacerbate a hazard on adjoining sites?

……...

[Note: If your site is subject to natural hazard/s and you are unsure of how to proceed, then advice can be sought from a Chartered Professional Engineer (CPEng).]

PROTECTED CUSTOMARY RIGHT AREA

Will your proposed activity have adverse effect on a protected customary right?

Yes ☐ No ✔

If yes, please describe alternative locations or methods for the proposed activity:

……...

……...

[Note: Protected customary rights are customary activities, uses and practices (for example the collection of hangi stones, or launching waka) within a particular part of the common marine and coastal area in accordance with tikanga.]

SCALE OF EFFECTS

Looking at all of the effects you have identified as a whole, what scale of effects will occur? *(tick one box)*

- ☐ Within the site only
- ✔ Restricted to the surrounding neighbours
- ☐ Affecting the whole settlement or town

Any comments about the overall nature of the effects?

The applicant considers that in general the overall effects of the proposed mining activity will be restricted to the immediately adjoining neighbours.

The effects considered in the statement above relate to the physical effects generated as a result of the mining operation namely noise and visual effects.

The applicant is confident that these effects can be avoided or mitigated against using a number of management practices.

The technical reports that have been included within this application support this position and the applicant will actively monitor the effects of the mining operation on an ongoing basis to ensure that the effects remain no more than minor.

CONSULTATION

You may have consulted other people or agencies about your proposal (eg Neighbours, DOC, Fish and Game NZ, Te Runanga o Makaawhio, Te Runanga o Ngati Waewae, New Zealand Historic Places Trust).

Please outline what consultation steps you have taken (if any):

Copies of this application have been provided to the relevant affected parties and consultation is currently progressing.

The applicant has entered into an access agreement with the Westland District Property Company Ltd to undertake mining activities within road reserve covered by Mining Permit MP53355 and has discussed the realignment of McLeods Road with Westland District Council.

What was the response?

This consultation process is ongoing, once consultation has been completed the results will be provided to the consent authority.

AFFECTED PARTIES

You will need to consider which people or agencies might be affected by your proposal. *(Consider the following as a guide and tick boxes below):*

- ✔ Neighbours (list details below)
- ✔ Department of Conservation
- ☐ Local community
- ☐ New Zealand Transport Agency
- ✔ Agency or other group (name them):

The applicant has also initiated consultation with the Operations Department of the Westland District Council and Westland District Property Company Ltd in relation to the inclusion of McLeods Road and associated road reserve.

[Also note that the Council rules on <u>who</u> is an affected party. You can seek the written approval of affected parties - please use the Council's Affected Party Approval form.
If you do not wish to approach parties for their approval, or you are unable to obtain the approval of a party that will be considered affected by Council, you can opt to proceed to limited notification.]

Please list the names and addresses of those you consider affected:

Department of Conservation
Westland District Council
Hende Family Trust
Te Runanga O Ngati Waewae
Te Runanga O Makaawhio

SUPPORTING INFORMATION – A CHECKLIST

You need to supply the following information to support your application *(tick relevant boxes)*:

- ✔
- ☐ Resource consent application form
- ☐ Completed Assessment of Effects on the Environment form (this form)
- ☐ Copy of the current Certificate of Title for the site
- ☐ Sketch of locality and access points and/or aerial photo
- ☐ Affected party approval forms *(if obtained)*
- ☐ Attach site plan showing total area of vegetation, proposed clearance area, all boundaries, water ways, proposed buffer zones and stands to be left.

Westland District Council
Hazardous Activities and Industries Checklist (RC001)

Prior to any changes in the use of land including constructing/altering buildings, creating foundations, undertaking earthworks, soil sampling or subdivision, the National Environmental Standard (NES) for Assessing Contaminants in Soil to Protect Human Health requires the land owner to identify whether or not any of the activities listed below have previously, currently or are going to be undertaken on the site.

Further information on the NES and the Ministry for the Environment's Hazardous Activities and Industries List (below) can be found at www.mfe.govt.nz.

Using information from the West Coast Regional Council, Westland District Council's property files, anecdotal evidence and any other reference, **read through the following list and please tick if the activity has previously occurred or will occur on the site.**

Hazardous Activities and Industries List (HAIL)

Chemical manufacture, application and bulk storage	**YES**
Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application	
Chemical manufacture, formulation or bulk storage	
Commercial analytical laboratory sites	
Corrosives including formulation or bulk storage	
Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents	
Fertiliser manufacture or bulk storage	
Gasworks including the manufacture of gas from coal or oil feedstocks	
Livestock dip or spray race operations	
Paint manufacture or formulation (excluding retail paint stores)	
Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds	
Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application	
Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides	
Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground	
Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges	
Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)	
Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products	
Storage tanks or drums for fuel, chemicals or liquid waste	
Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside	

Electrical and electronic works, power generation and transmission	**Yes**
Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores,	
Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment	
Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices	
Power stations, substations or switchyards	
Explosives and ordinances production, storage and use	**YES**
Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging	
Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors	
Training areas set aside exclusively or primarily for the detonation of explosive ammunition	
Metal extraction, refining and reprocessing, storage and use	**Yes**
Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material	
Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds	
Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds	
Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals	
Engineering workshops with metal fabrication	
Mineral extraction, refining and reprocessing, storage and use	**Yes**
Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	
Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)	
Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process	
Commercial concrete manufacture or commercial cement storage	
Coal or coke yards	
Hydrocarbon exploration or production including well sites or flare pits	
Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings	
Vehicle refuelling, service and repair	**Yes**
Airports including fuel storage, workshops, washdown areas, or fire practice areas	
Brake lining manufacturers, repairers or recyclers	
Engine reconditioning workshops	
Motor vehicle workshops	
Port activities including dry docks or marine vessel maintenance facilities	
Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas	
Service stations including retail or commercial refuelling facilities	
Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances	
Cemeteries and waste recycling, treatment and disposal	**Yes**
Cemeteries	
Drum or tank reconditioning or recycling	
Landfill sites	
Scrap yards including automotive dismantling, wrecking or scrap metal yards	
Waste disposal to land (excluding where biosolids have been used as soil conditioners)	
Waste recycling or waste or wastewater treatment	

Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment	
Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	

If you have answered yes to any of the above, the NES applies to the land. Please consult the NES and if you have any questions, contact the Planning Department.

Statement:
I hereby certify that to the best of my knowledge the information given is true and correct.

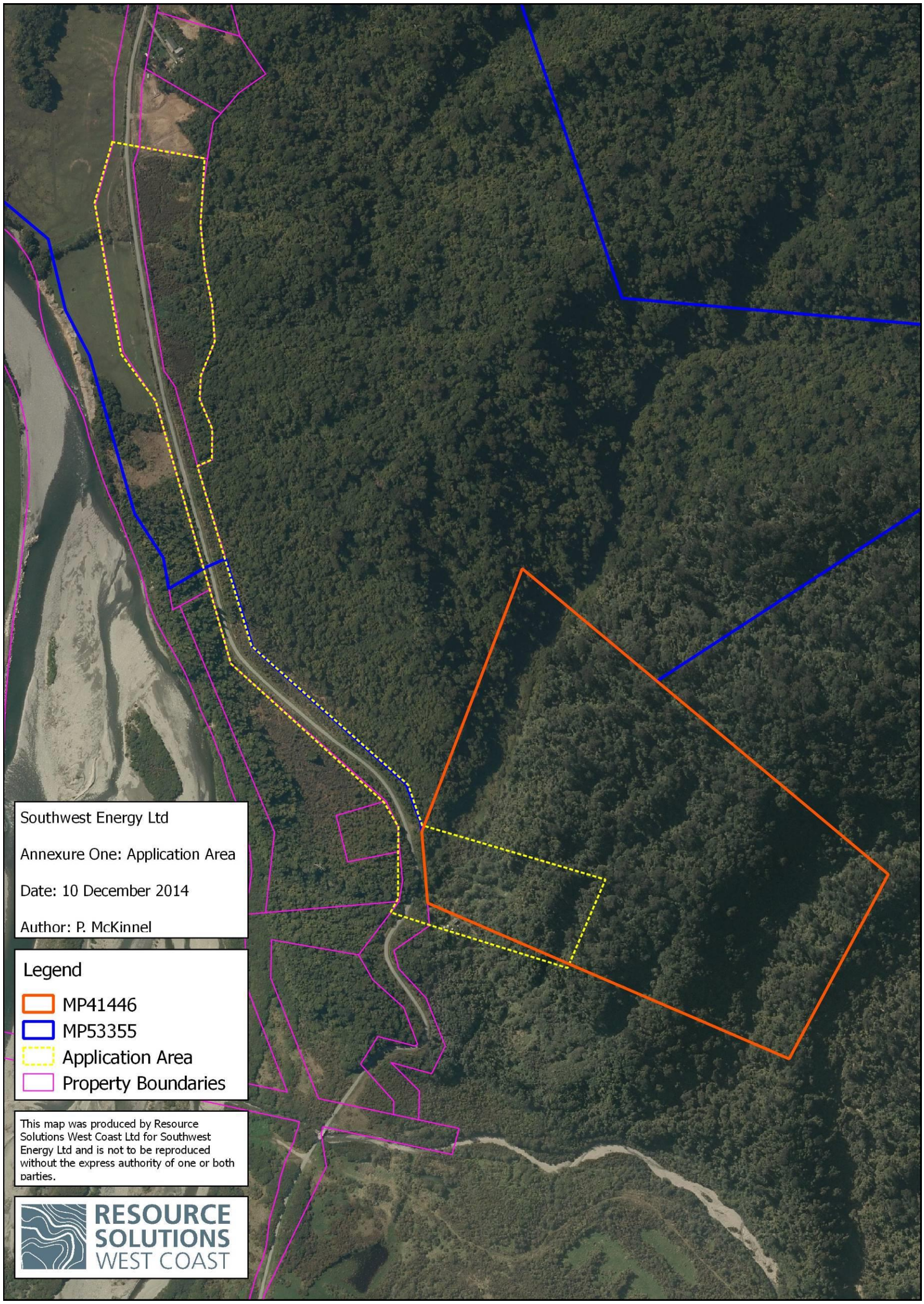
Name: Phil McKinnel

Signature: 

Date: 30 March 2015

Annexures

Annexure One: Application Area



Annexure Two: Mine Plan

MINE CONCEPT DESIGN FOR AREA C: MP 53355, SQUATTERS NORTH, MIKONUI VALLEY, WESTLAND

Preliminary Mining Plan prepared for South West Energy Limited

Field Technical Services Ltd,

Consulting Geologists,

Christchurch, N.Z.

22nd October 2014

1.0 INTRODUCTION

1.1 Purpose

This document has been prepared to describe a conceptual mine plan for a second small opencast alluvial gold mine operation at Squatters Creek, Mikonui Valley. It has been prepared as a preliminary design to assist consenting/permitting applications, in advance of more detailed production mine planning.

1.2 Location

The proposed excavation site lies on a raised terrace forming the true right bank of the Mikonui River, adjacent to a north-south oriented section of McLeods Road. This proposed work area lies to the north of the existing Squatters Creek mine site and processing plant, and is referred to as “Area C”.

Figure 1 is a photoplan showing the location and extent of the site, which exists as a extended rectangle of flat land lying between the Mikonui River and a partly-dissected eastern ridge that rises to a local high point of Flagstaff Hill, (at 225m asl). Area C is approximately 400 m long (north-south) and varies in width to 100 m (west-east). McLeods Road runs in a north-south line through the western half of the area and will require relocation to enable efficient mining of the contained gold resource.

1.3 Crown Minerals Permitting

The work site lies on the middle-western side of Mining Permit 55-355, held by South West Energy Ltd over an area of approximately 90 ha. The permit was granted on 21st September 2011 and expires in 2026.

From State Highway 6 in the north, the MP stretches south almost as far as the entrance to the existing Squatters Creek alluvial gold mine. Figure 2 shows the MP boundaries in red on the New Zealand Petroleum and Minerals (“NZPAM”) permit map, with a topographic underlay. Permit 55249, shown as a label near the south-west corner of Area C in Figure 1, relates to an Extension of Land to MP 53355, granted in September 2013.

2.0 SITE GEOLOGY

Figure 3 is part of a Sigma Resources geology map prepared by Bawden (1987). It shows the site as lying in late Pleistocene Loopline 2 glacial outwash gravels. These gold-bearing gravels are underlain by late Tertiary Old Man Gravels, the upper decomposed R8 conglomerates that rise east of the site to form the eastern bordering ridge. This ridge is eroded into by Terminal Gully in roughly the middle of the site and by Squatters Creek further south.

Figure 4 shows a relevant set of Sigma Resources geological cross-sections, two of which (A-A', B-B') run across Area C and show the gross sedimentary structure.

The Loopline outwash gravels contain the target alluvial gold leads. Locally, in the Redmans Creek and Mikonui River water systems, mining faces cut into these have been observed to stand at very steep excavation angles, being characterised as flat-lying imbricate gravels that are often extremely permeable.

Apart from the comparatively recent Sigma Resources exploration work and geology descriptions, unpublished L & M Mining reports from the 1980's and 1990's are known to have given thorough descriptions of the topography, geology and mining history of the Mikonui River area. More detailed descriptions of the area's alluvial gold-related strata can be found in the Ross Area report written by Gage (1945), using the now largely obsolete "R" series of rock type labels.

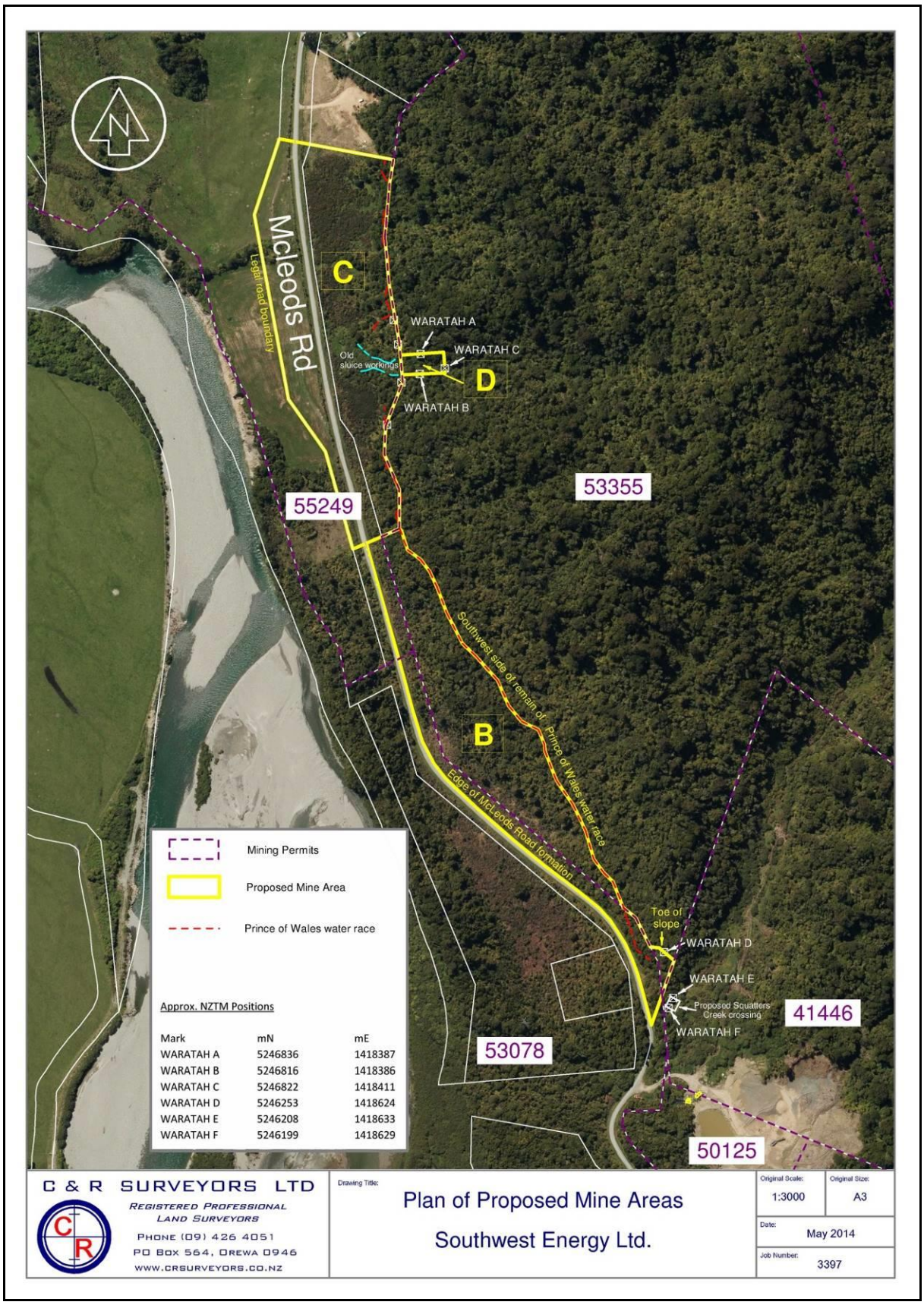


Figure 1 Site Location

Figure 2 NZPAM Permit Boundaries

Figure 3 Geology Map

Figure 4 Geological Cross-sections

3.0 BASIS FOR CONCEPT DESIGN

3.1 Preamble

Pit design parameters used for the Area C mining concept are based on local experience in the relevant rock types as previously excavated in nearby mine sites, as well as commonly-accepted geotechnical criteria for pit slopes.

By way of relevant background, given below (in smaller type) is a short extract from the current consultation draft of WorkSafe New Zealand's Best Practice Guidelines for "Health and Safety at Opencast Mines, Alluvial Mines and Quarries". While these guidelines have yet to be set in place, it would be reasonable to assume that the final guidelines will embrace the same mining pit face heights and angles specified in the draft document.

Ground or strata instability should be treated as a principal hazard and the excavation subject to a geotechnical assessment where:

a) In the case of weak rock or stronger rock, where (see Figure 3):
   i) The vertical height of any individual face is more than 15 m; or
   ii) The overall vertical height of any adequately benched face or slope, measured from toe to crest, is between 15 m and 30 m; and
   iii) the overall face angle is steeper than 1 horizontal to 1 vertical (45° to the horizontal);
   or

b) In the case of very weak rock and soils, where (see Figure 4):
   i) the vertical height of any part of an excavation is more than 7.5 metres; and
   ii) the overall face angle is steeper than 2 horizontal to 1 vertical (27° to the horizontal);
   or

c) The bottom of the excavation is more than 30 metres below any surrounding land within 30 metres of the perimeter of the excavation (i.e. the excavation is more than 30 metres deep, allowing for any nearby higher ground);
   or

d) Irrespective of the excavation face height, depth or angle, other factors, for example the geology, location or proximity of a tip, mean there is a significant hazard.

3.2 Adopted Design Parameters and Practices

Based on best pit practice and established parameters:-

- Overall batter angles; longer term 45°, short term 60° (backfilled immediately)
- Inter-bench batter angle; unweathered rock 70°, weathered rock 45°
- Crest to toe, off bench and peripheral drainage gradients ~1° (~2%)
- Haul ramp (15% gradient) crowned with ditches and edge protection
- Haul road in pit 10m – 6m wide with ditch/sumps to enlarged sump at intervals
- Pit floor is on barren/hard R8 (Old Man Gravels conglomerate) and constructed of tails or river gravels compacted/laid to good standard.
- Old tunnels surveyed locations noted; if encountered, sealed immediately.

3.3 Background Comments

Loopline gravels may occupy top 10m, then R8 conglomerate for 12m? (from Sigma Topo and Geology maps and McKay (1893) historic reference to 40 ft thickness of R8 sluiced locally).

Old workings, particularly tailings (Terminal Gully sluicing and Ferguson's operation) and tunnels need to be noted, surveyed and planned for possible water entry/egress.

Similarly, need careful planning for practicality of buffer capacity for Terminal Gully dam and possible lining of peripheral drainage ditch on east side.

Test pitting is probably the most reliable approach for further grade determination at this site and when applied to polygonal areas of influence should work acceptably for reserve estimates and grade control.

4.0 PROPOSED MINING METHODOLOGY

4.1 Schematic Plan for Progressive Mining

Figure 5 shows an example of a schematic plan for shallow opencast progressive mining.

The full cut to the maximum depth (down-dip) has taken place to the right and the system of stripping and mining out the coal moves to the left on an oblique face. This allows more flexibility for quality (grade) control, greater pit bottom work area and relies on moving the sump.

To follow this approach at Area C, it is assumed for conceptual planning that:

- Permission will be sought from Historic Places Trust to clean out and use the old Prince of Wales water race. If this is not an option, then the peripheral drain on the east will need to be constructed inside the boundary instead.
- The exact position of the relocated road on the west boundary has to be confirmed.
- Overall pit slope angle set at 45-60° depending on how quickly the slope can be stabilised.
- The pit floor dips to the west at about 10° at a depth of about 15m.

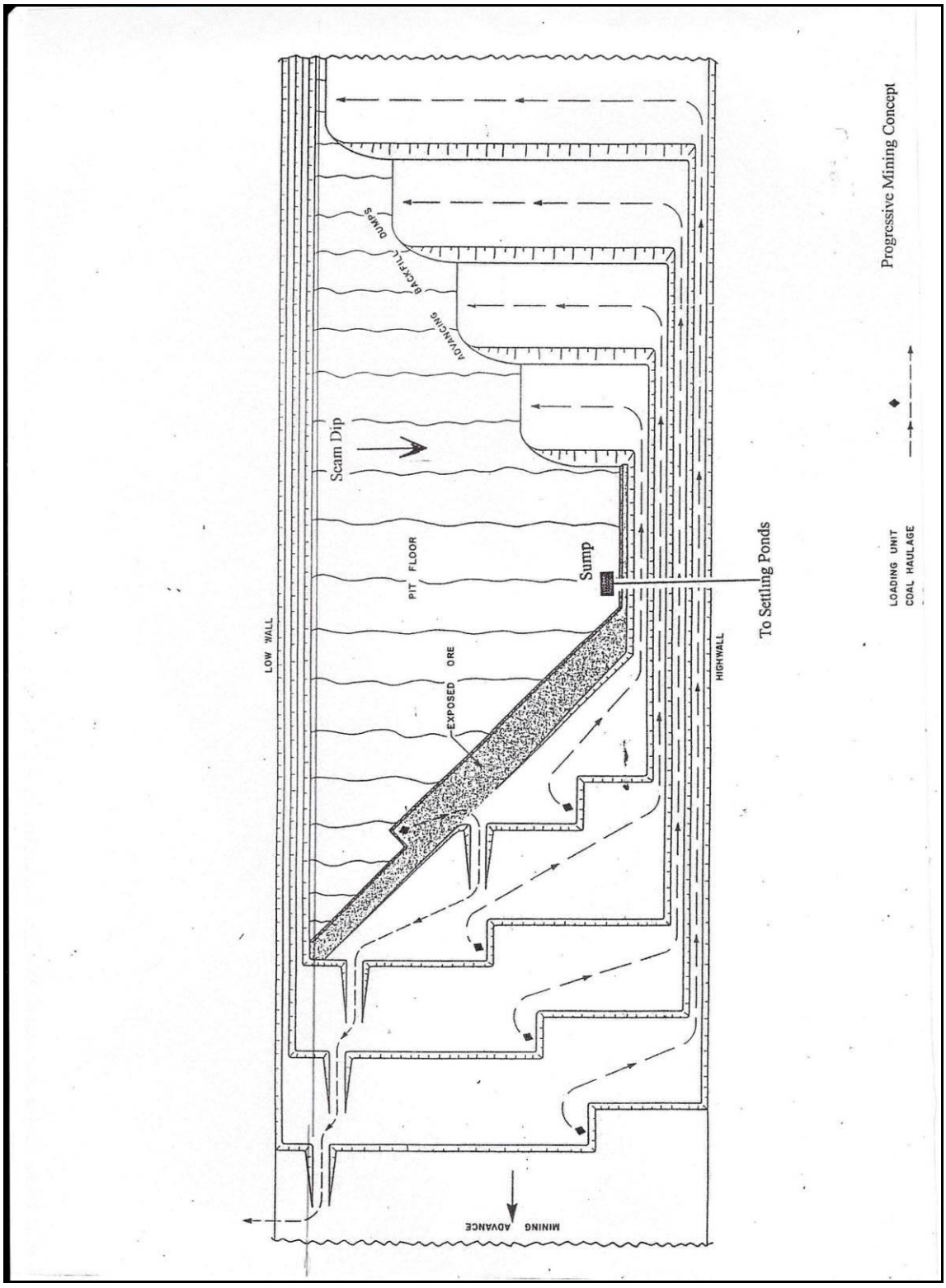


Figure 5 Progressive Mining Schematic

4.2 Mining Sequence

The following sequence assumes that mining would commence at a point half-way up Area C, i.e. approximately at northing 5246840 mN, (approx. at the “D” line at Waratah 1 in Figure 1). Working northwards, the haul road can ramp down on the western side, with pit bottom established at full depth. This would enable systematic backfilling to avoid sterilising payable gravel and to minimise rehandling.

Assuming the best grades occur to the east, the steeper slope (60°) is developed on this side and backfilled immediately.

Peripheral drainage is established on the east boundary with ditch lined and buffered where necessary. The existing road (6m width) is shifted to the west side, hard up against the boundary and finished to a semi-permanent standard with a 6m buffer (with edge protection) alongside on the east. (See typical required road construction cross-sections in Appendix 1).

Starting on the south boundary, the haul ramp is dug to 5m elevation with 45° overall slope on the west and 60° overall slope on the east. Turnouts to the east on 15m and 10m benches are driven where warranted by advance sampling.

Proceeding to the north, the eastern side of the area (~ 2/3 of total) is mined and backfilled with waste and tailings to stabilise the steeper east side to the northern extremity with excess backfill stored on top surface. The retreat from the north is mined along the west side only where warranted by steepening to 60° and backfilling immediately.

If plant throughput is of the order of 600 bm³/day, there could be a year’s work involved, so the backfill should be contoured and reclaimed to a showpiece standard. The permanent road location can be set on the boundary or shifted to the 6m buffer with final reclamation.

The concept mine plan in Figure 6 shows the corresponding pit road and bench layout in Area C. Figure 7 is an enlargement of the plan for the pit sector immediately north of 5246800 mN. Figure 8 is a generalised west-east cross-section sketch that shows typical pit dimensions resulting from this concept.

If better grades are determined on the west side the same pattern would focus on the west with a 60° slope on that side.

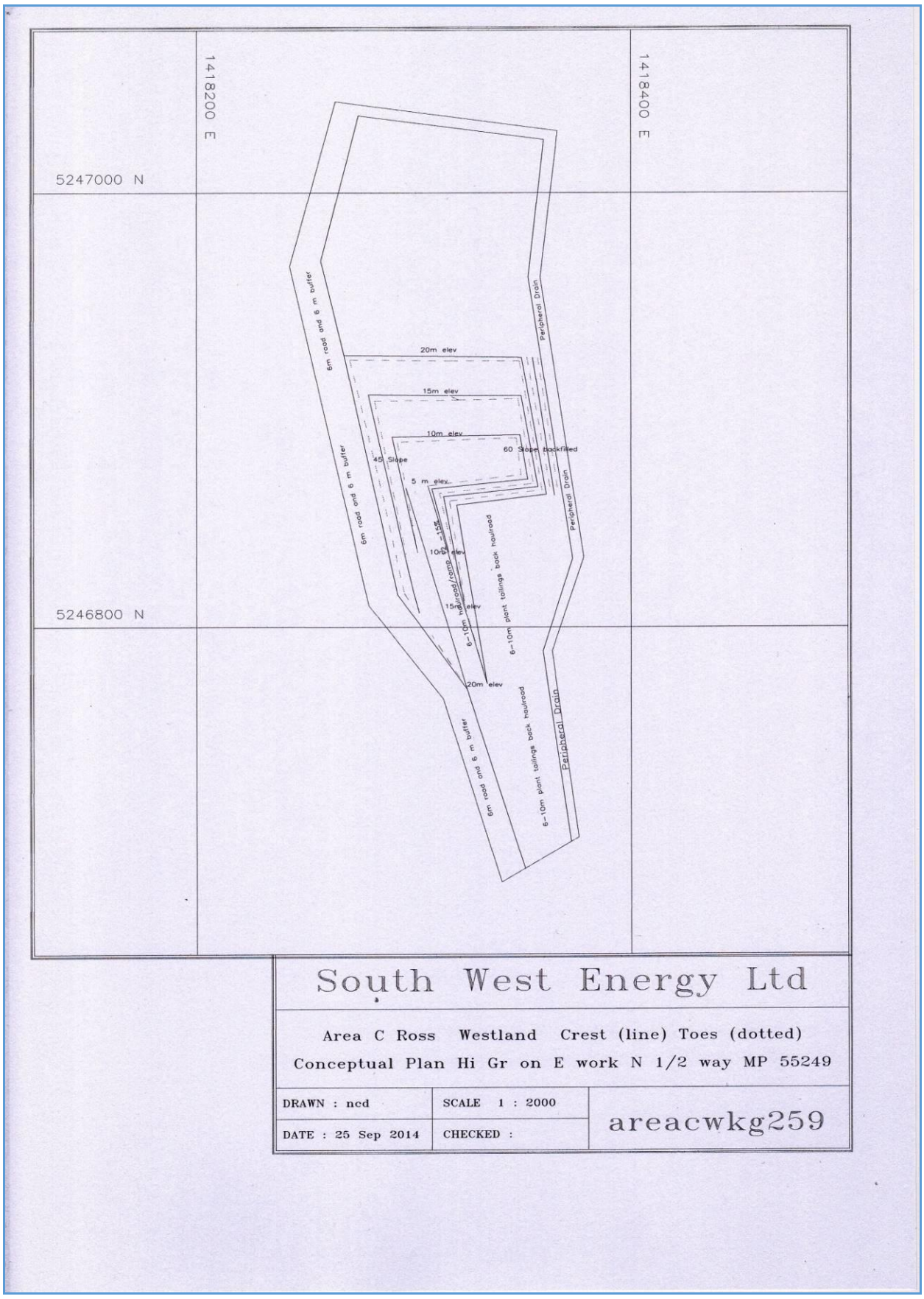
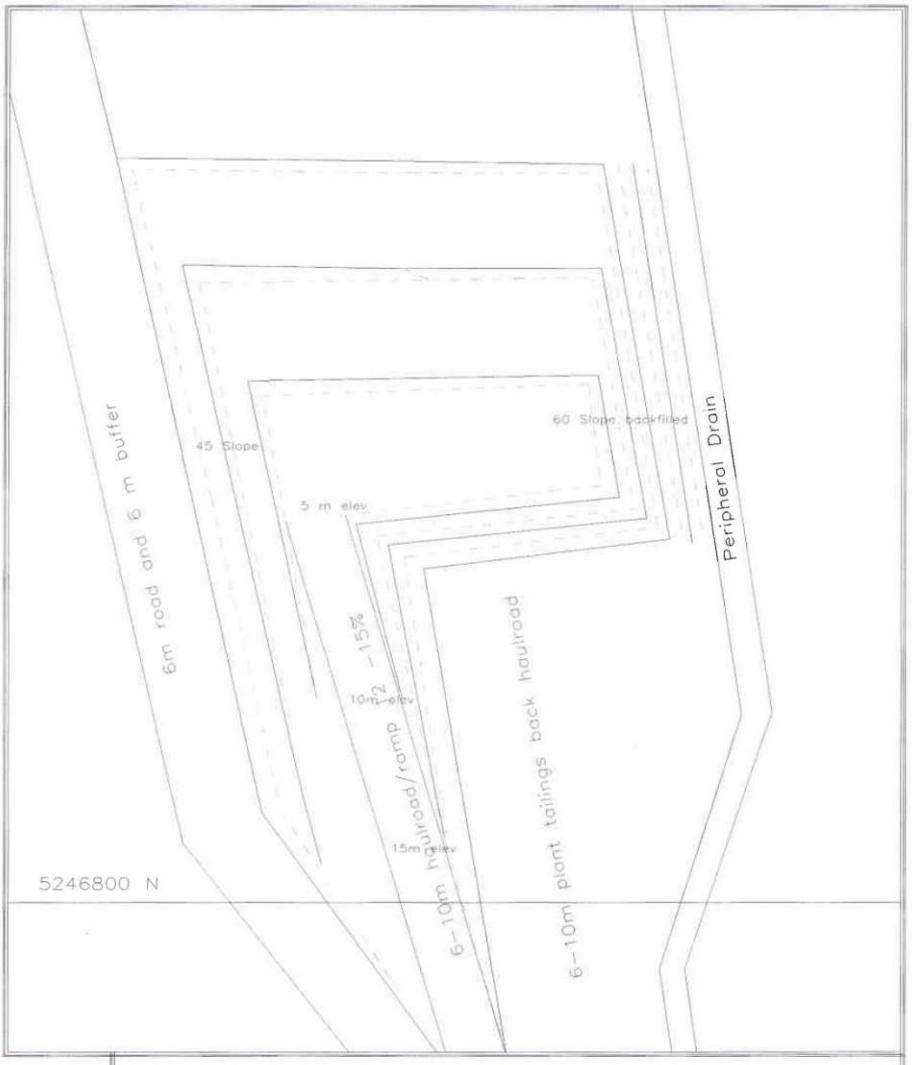


Figure 6 Concept Mine Plan



South West Energy Ltd

Area C Ross Westland Crest (line) Toes (dotted)
Conceptual Plan Hi Gr on E work N 1/2 way MP 55249

DRAWN : ncd	SCALE 1 : 1000	areacwkg259
DATE : 25 Sep 2014	CHECKED :	

Figure 7 Concept Mine Plan (Centre Detail)

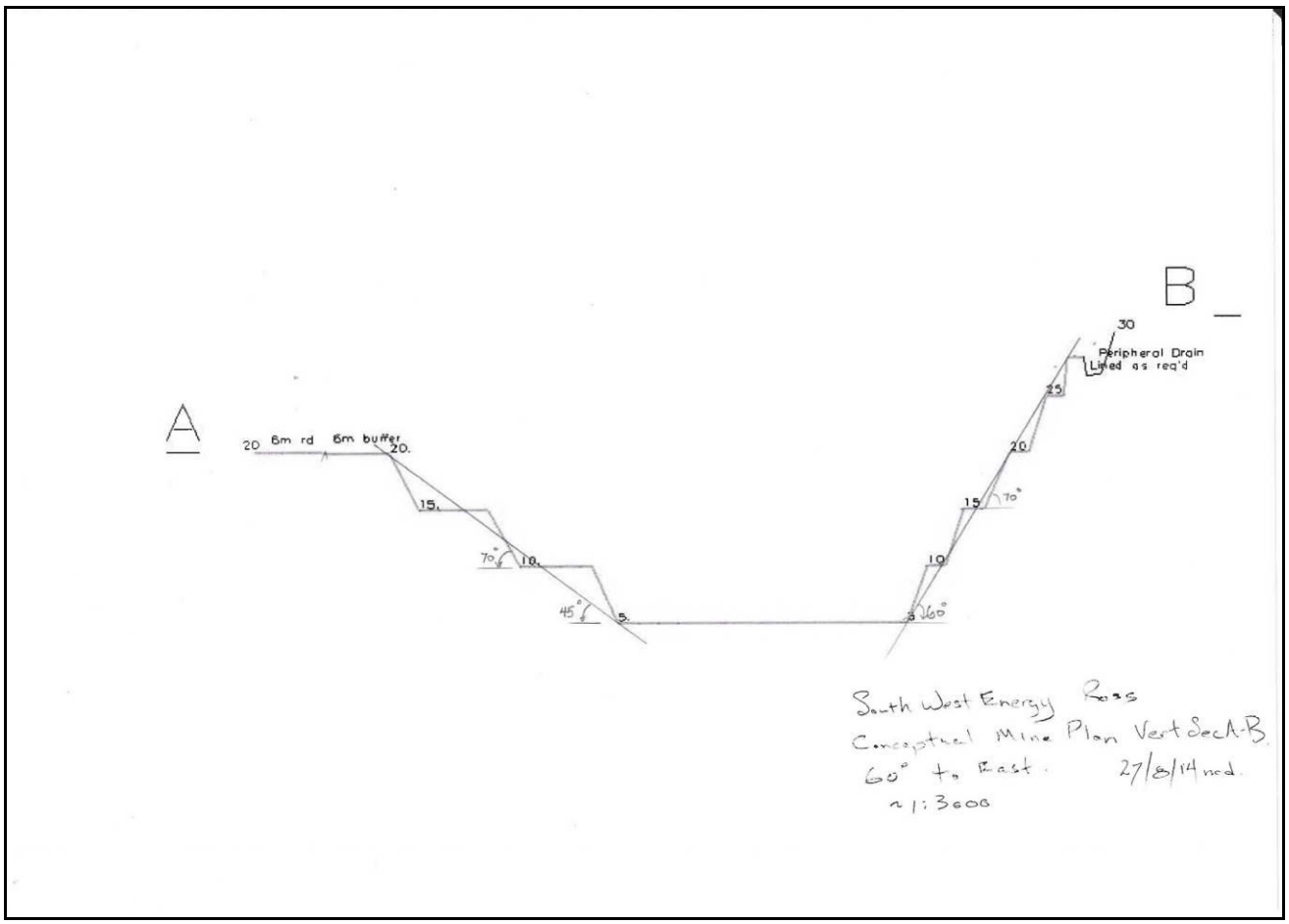


Figure 8 Typical Cross-Pit Section

5.0 CONCLUSION

The above-described concept consists of general batter heights and slopes that have been used to prepare a preliminary design. Variations in slope design may be necessitated be as on-site experience progresses and rock properties are found to vary, and as better knowledge of in-ground gold grades builds up. Such adjustments need to be at the discretion of the statutory mine manager. It is important that regular and thorough monitoring of pit faces is performed to verify the stability performance of the excavated batters and benches.

6.0 AUTHORSHIP

(Signed) _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Adrian Field, MSc, MAusIMM

Principal Geologist

Norm Davidson, BSc, MAusIMM, PEng (Ontario)

Consulting Mining Engineer

7.0 REFERENCES

Bawden, P., 1987: *Geological Map Ross Project*. Unpublished geological map and sections prepared for Sigma Resources NL. Map No. 903-1.

Gage, M., 1945: *The Tertiary and Quaternary Geology of Ross, Westland.* Transactions and Proceedings of the Royal Society of New Zealand 1868-1961, Volume 75, 1945-46, pp 138-159.

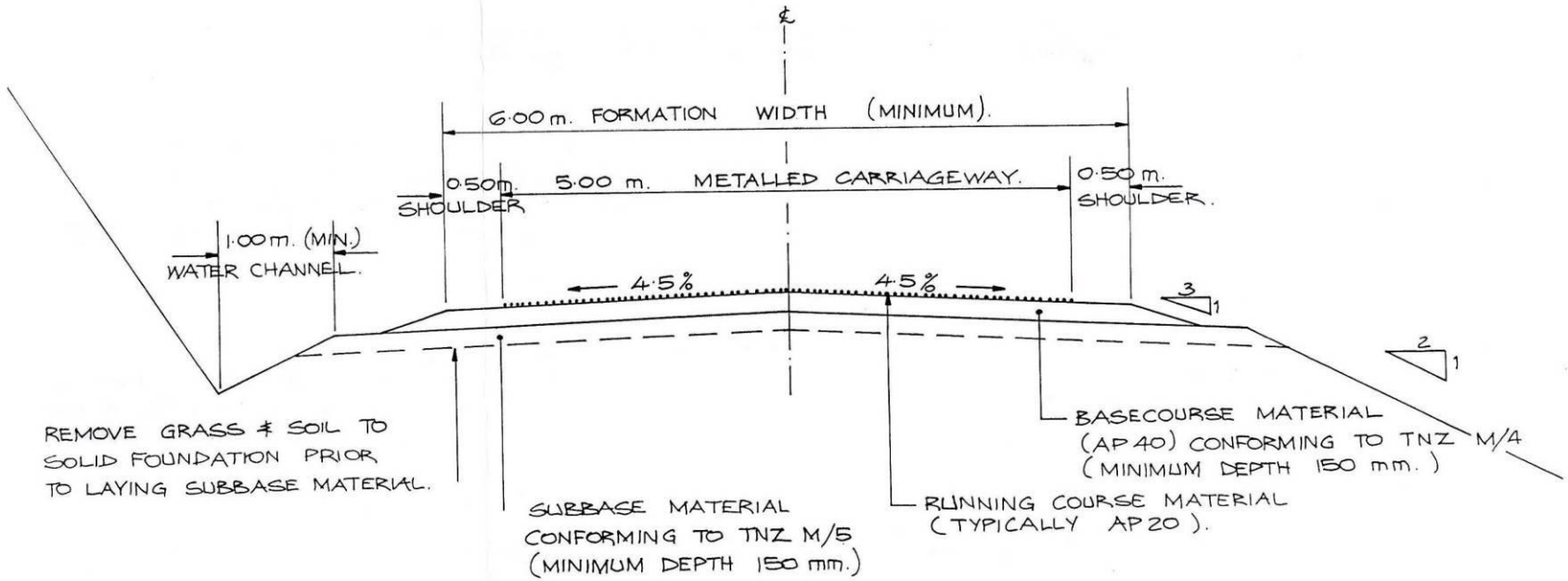
McKay, A., 1893: *Geological Explorations in the Northern Part of Westland.* Mines Report, Parliamentary Paper C-3, pp 132-186.

WAIVER

This report has been prepared in good faith and due care by the above-signed, based on site observations. To the limit allowed by N.Z. law, no responsibility can be held for the consequences to the recipient or third parties of decisions made on the basis of the report's findings and recommendations, which are offered as a guide to assist the recipient and regulatory authorities in the risk assessment of rock stability at this site. Geotechnical assessment of New Zealand rock strata is an area of great uncertainty.

APPENDIX 1

Roading Construction Cross-sections

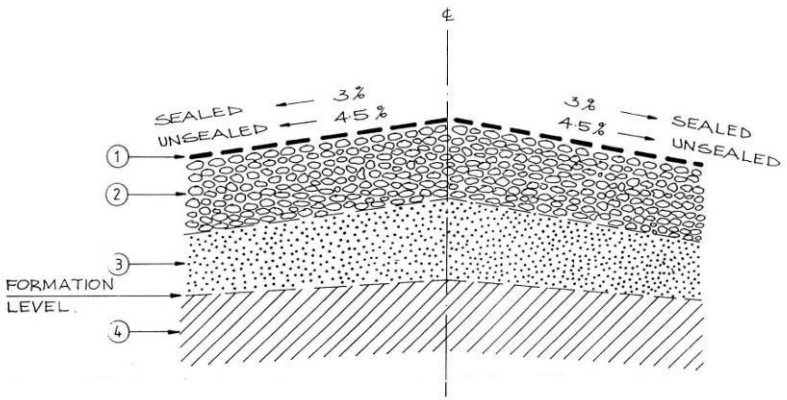


NOTE: SUBBASE AND BASECOURSE MATERIAL TO BE ADEQUATELY COMPACTED TO ACHIEVE MINIMUM FOURTH DROPP "CLEGG" IMPACT VALUE OF 40.

Subdivision Roading - Rural Unsealed.

Typical Cross Section

fig. 2.



1. RUNNING COURSE : A THIN LOOSE LAYER OF APPROX. 20 mm. MAX. SIZE GRAVEL OR CRUSHED AGGREGATE. (THE PORTION THE MOTOR GRADER WORKS WITH.) (TYPICALLY AP20).

2. BASECOURSE : THE MAIN LAYER SUPPORTING THE PAVEMENT (TYPICALLY AP40).

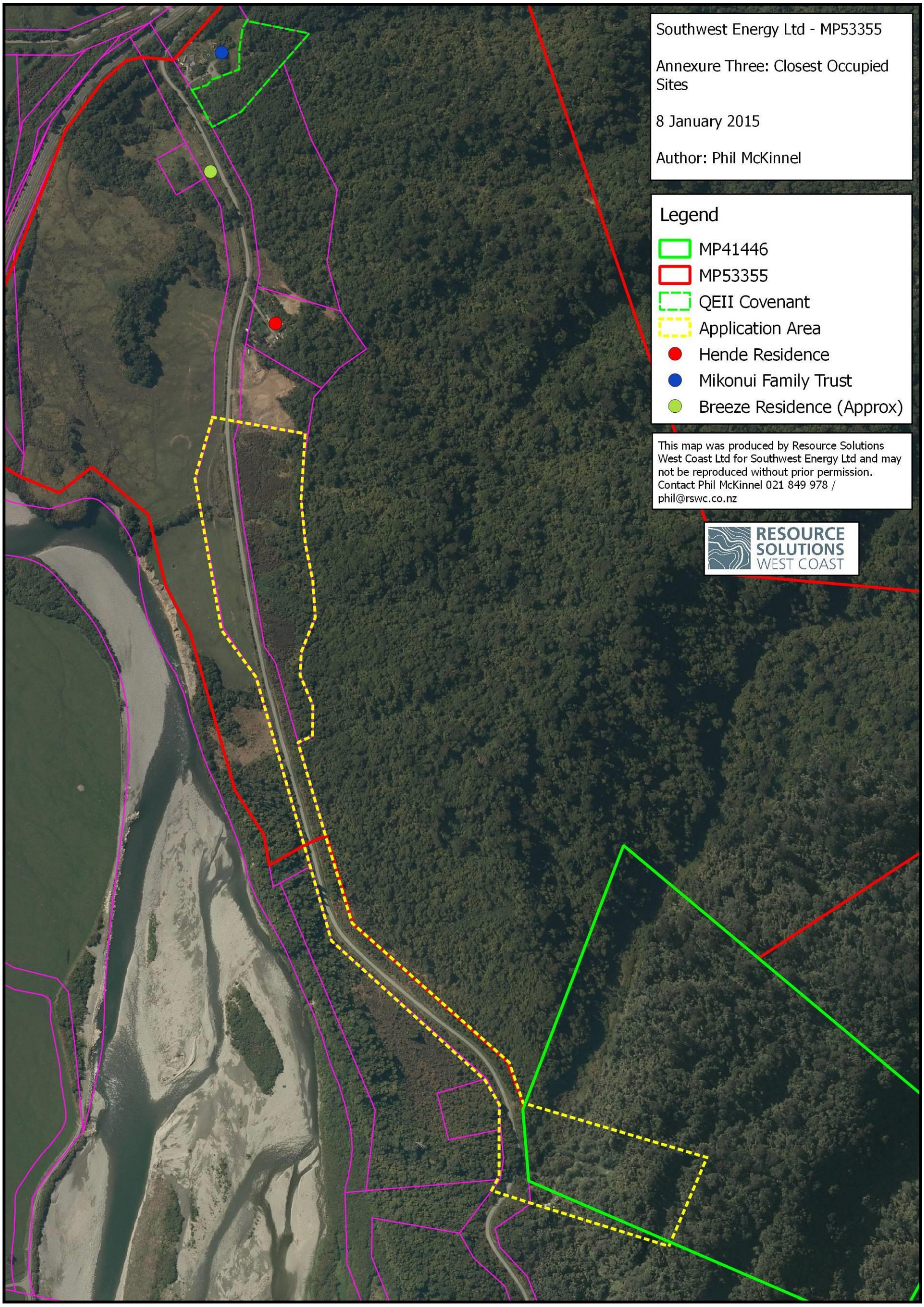
3. SUBBASE : AN OPTIONAL IMPORTED LAYER.

4. SUBGRADE : THE UNDERLYING FORMATION.

THE DIAGRAM ABOVE SHOWS THE NAME AND LOCATION OF THE PAVEMENT LAYERS.
A ROAD MAY COMPRISE SOME OR ALL OF THESE LAYERS.

fig. 3.

Annexure Three: Closest Occupied Sites



Annexure Four: Landscape Assessment

APPLICATION FOR RESOURCE CONSENT
MINING PERMIT MP53355 McLEODS ROAD, MIKONUI

Landscape and Visual Effect Assessment

Prepared for South West Energy Ltd

16th December 2014

LASF landscape architects simon ferrick ltd

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Sheet 2 Viewpoint Location Map.....SHEET 2

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Sheet 4 Viewport Photographs.....SHEET 4

1 Introduction

Landscape Architects Simon Ferrick Limited has been engaged by Southwest Energy Ltd to provide an assessment of landscape and visual effects arising from the proposed mining operations within Lot 3 DP3858, Section 2 SO 455415 (DOC Estate), and within a Westland District Council Road Reserve (McLeods Road). Access to the subject site is from McLeods Road, Mikonui.

The purpose of this report is to form part of the AEE that accompanies the resource consent application prepared by Resource Solutions West Coast Limited to the Westland District Council.

The author of this report visited the site on 2nd November 2014 and revisited photographing the surrounding landscape context from a range of viewpoint locations on the 3rd November 2014. These photographs, together with a location map are attached in the appendix of this document.

2 Executive Summary

Main landscape & Visual issues:

The main landscape and visual issues are those of the mining and its associated activities being seen from SH 6 (Harihari Highway) and by the users of McLeods Road.

Summary of effects:

The effects are considered less than minor on the existing landscape based on:

- The site has been cleared of vegetation under an existing consent with no further vegetation removal proposed
- The proposal will have a limited viewing audience
- The main viewing audience is from some distance away
- The activities of mining are visually prominent within neighbouring landscapes

Design measures to avoid, remedy or mitigate potential adverse effects:
The proposal does not require the removal of any more vegetation than has been removed to date and the affected area will be reinstated to allow for the natural regeneration of native species to occur on completion of the mining activities.

The realignment of part of the road will have a minor visual impact and not affect accessibility or use of the road by others.

Conclusion on landscape issues:

The character of the area will not be compromised by the proposal. The greatest potential for the site to be seen is from some distance by users of SH 6. Due to the distance between the viewer and the site the mining operations will have minimal effect visually. The areas that have been cleared of vegetation can be seen from some locations along SH 6 but this is in context within the foreground where the Mikonui River banks are steep and dominate the visual catchment also being void of vegetative cover.

3 Description of Proposal

The applicant is seeking consent to carry out mining operations within the applicants own land and within a public road. The operations will require the realignment of part of the public road (McLeods Road). The proposed mining process for the site is described in the MINE CONCEPT DESIGN AREA Report prepared by Field Technical Services Ltd 22 October 2014.

4 The site and its Context – Existing Landscape

Defining 'Landscape'

The term landscape as contained in the NZILA Practice Notes and for the purpose of this report is referred to as:

'Landscape is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations.'

The Site

Attachments - Sheet 1.

The subject site (the "Site") is located at McLeods Road, Mikonui . It is within Mining Permit areas MP 41446 & MP53355. The proposed provides for an area of mining, the realignment of part of the existing road, the reclassification of part of the existing road to a construction road, and an area of Wash Plant and associated facilities.

The site is on a reasonably flat raised terrace which forms the true right bank of the Mikonui River to the west of Flagstaff Hill. The road drops to the south of the site as it descends to cross Squatters Creek.

The site covers approximately 8 hectares of land over 3 land parcels as identified in the introduction.

The area proposed to be mined has been cleared of all vegetation which was completed under an existing Westland District Council Resource Consent (Attachment - Sheet 3, Photograph 1).

The proposed mining activities requires the relocation of part of McLeods Road to the west of its current alignment. The new alignment will be retained as the permanent road position.

The margins of McLeods Road to the south of the proposed mining area (but still within the site) support mixed native species to both sides of the road. This vegetation is to be retained. (Attachment – Sheet 4, Photograph 7).

Surrounding Context

The site is part of a larger mining area within the Westland District and as a result significant mining operations can be seen by the users of SH 6 especially around the margins of Flagstaff Hill and between the State Highway and coastline to the south of Ross. These operations are considerably larger than the proposed and have dominating effects on the landscape both visually and ecologically.

The subject site is serviced from McLeod Road which supports several residential lots to the north of the site. The location and proximity of these lots is outlined within the application documents. The proposed will have less than minor effect on their existing visual landscape.

The site is approximately 65m to the east of Mikonui River which meanders a further 1km to the west where it meets the Tasman Sea. In part the watercourse has eroded the area of land below the site resulting in a 5m (approx) high exposed gravel embankment along a significant distance of the river edge. South of this the banks of the river are heavily vegetated which provides screening of the south end of the site. (Attachment – Sheet 2)

5 Assessment of Landscape and Visual Effects:

This assessment of the landscape and visual effects has been undertaken in the context of the anticipated mining operations as proposed in the resource consent application to establish and operate a mining facility within the subject site. At the same time the assessment has considered the protection and retention of existing character values of the surrounding areas, SH 6 and McLeods Road, and the potential effects on the proposal in and on these areas.

Landscape Effects

The proposed mining operation will be located within a wider landscape context already associated with mining operations of which most are of a much larger scale than the proposed and thus have a significantly greater impact on the landscape of the area.

The subject area will be reinstated after completion of the works to provide for natural regeneration of native species to occur.

The removal of vegetation from the mining site had the potential to be the greatest impact on the landscape both ecologically and visually. This work is now completed and the mining area physically defined and as a result the impact easier to assess. The proposed mining works are generally within the area to the north of the site and it is that area that has been cleared resulting in less than a minor impact on the landscape.

The vegetation cover in this area of Westland is predominantly native lowland forests with areas of regenerating bush along the stretches of the foothills and Mikonui River margins.

In conclusion, it is considered that the potential landscape effects of the proposal will be negligible, and is consistent with the proposed short term mining operation which will conclude with the opportunity for the lowland forest to regenerate in the longer term over the site.

Visual Effects

The potential viewing audiences within the vicinity of the proposed mining operations are comprised of a limited number of local residents, users of McLeods Road, and people travelling along SH 6.

Motorist travelling on SH 6 south would have the site to the north east of them and need to turn to look over their left shoulder to see the site as the highway alignment is in a south west direction away from the site. Those travellers are unlikely to be aware of the subject site and the mining activities.

Motorist travelling north on SH 6 are the most likely audience of the site but these views are from some distance and are of small scale in the context of the overall landscape.

The residents of McLeods Road do not need to pass through or by the site to access their properties when exiting SH 6. Residents of McLeods Road will only see or be effected by the mining activities if they venture past their own properties.

For other users of McLeods Road a safety bund is to be established between the relocated road and mining site which will also provide a visual buffer between the two activities. This bund could include planting although this would only be temporary as it is proposed that the bund be removed on completion of the operations to reflect a more natural landscape.

The mining operations will result in substantial amounts of excavation to a considerable depth although apart from the top of the east face (bush side) it is unlikely that the mining activities will be visible from SH 6.

Visual envelope from State Highway 6 travelling south:

Sheet 3 Photo 2 - The views of the site are limited as the site is located behind the traveller and the landscape is dominated by the surrounding farmlands, the Mikonui River bridge crossing, and the approaching road over Mitchell Hill. It is unlikely that travellers in a southward direction would observe the activities on the site.

Visual envelope from State Highway 6 travelling north:

Sheet 3 Photos 3, 4 & 5 – It is from this direction that the site has the potential to have the greatest visual impact as travellers have the opportunity to look directly towards the site although views are from some distance resulting in the site being seen in the context of a much larger landscape. The wider views are dominated by the bush covered Flagstaff Hill to the north east, the open flat lands each side of the highway and Mikonui River to the north west.

The visual impact can be assessed now as the vegetation has already been removed and while the top of the east side of the proposed pit will replace the cleared area below the historic watercourse this will be in keeping visually with the riverbank which is directly below the site when seen from SH 6.
From a distance, the cut will appear as part of the natural riverbank.

Visual envelope from McLeods Road:

Sheet 4 Photo 6 & 7 – Users of McLeods Road will see typical mining activities consisting of significant earth movement activities including vehicle movements. A buffer between the road and the site will provide partial screening and serve as a safety barrier between the two. While consideration has been given to the planting of this bund it is not seen as beneficial in that the mining activities are proposed over a limited period (12mths) and that the bund will be removed following the completion of the works to ensure the landscape is returned to a more natural contour.

Visual envelope for residents of McLeod Road

McLeods Road supports several residential properties all of which are located between the SH 6/ McLeod Road intersection and the subject site. Apart from the Hendre residence all others will not be able to see the mining activities unless they venture past their own properties further south down

McLeod Road towards and past the site. As outlined in the Planners report the applicant is in consultation with the Catharine Hendre in regards to any further visual screening required. This may include the construction of a permanent earth bund with planting to provide screening of the mining operations.

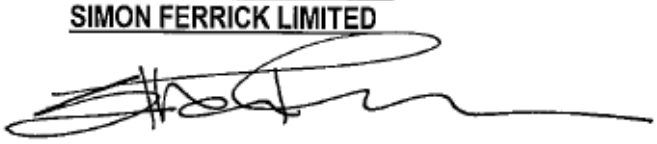
6 Conclusion

There will be less than minor landscape effects as a result of the proposed due to removal of the native vegetation having already been completed, that the mining operation is some distance from main viewpoints and that the existing visual landscape has many natural and manmade distractions at present.

In the longer term the majority of the site will promote natural revegetation to occur providing a permanent vegetated fringe to Flagstaff Hill and will potentially enhance the landscape.

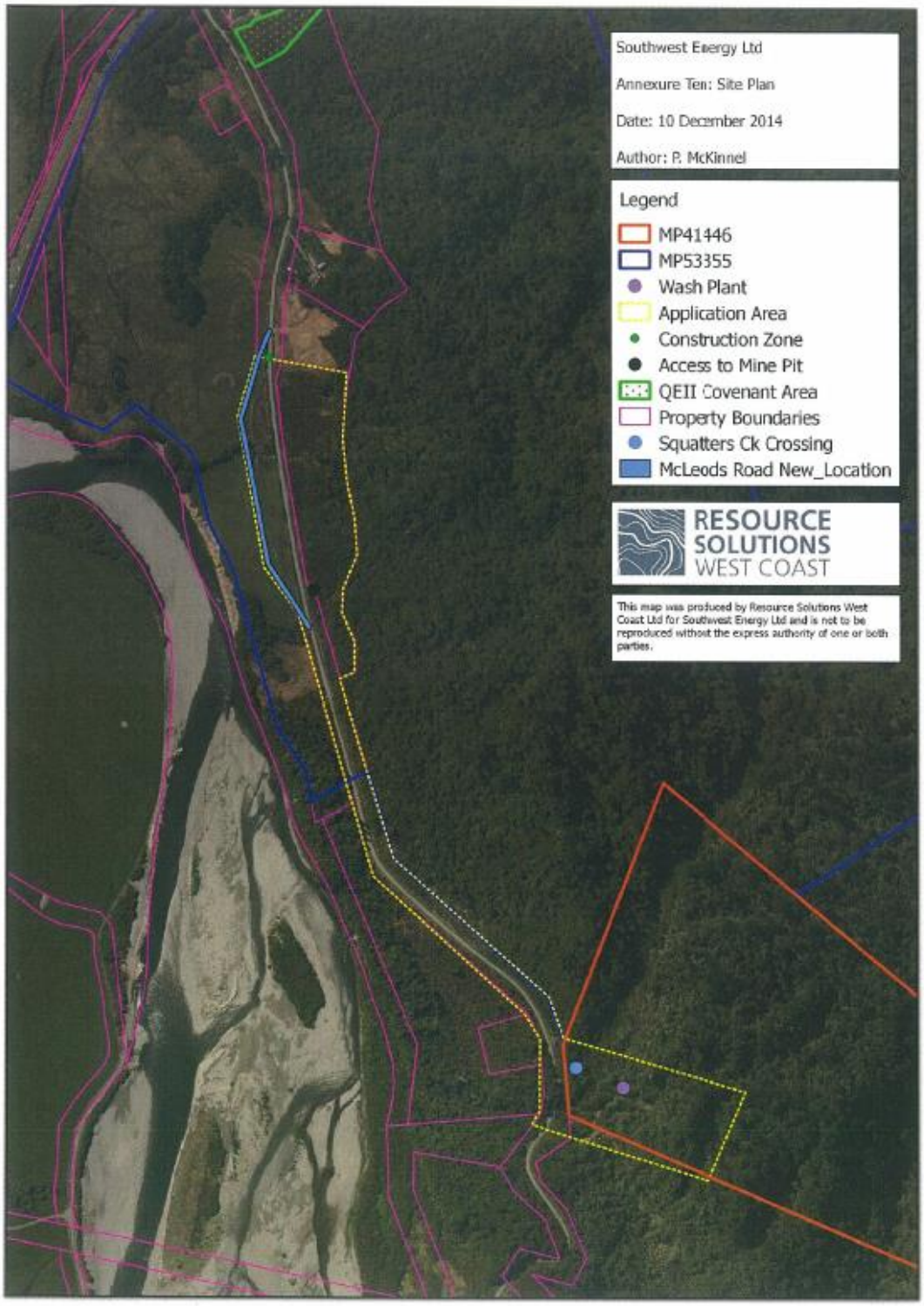
Overall it is considered that the potential landscape and visual effects of the proposed mining operation will be negligible.

LANDSCAPE ARCHITECTS
SIMON FERRICK LIMITED

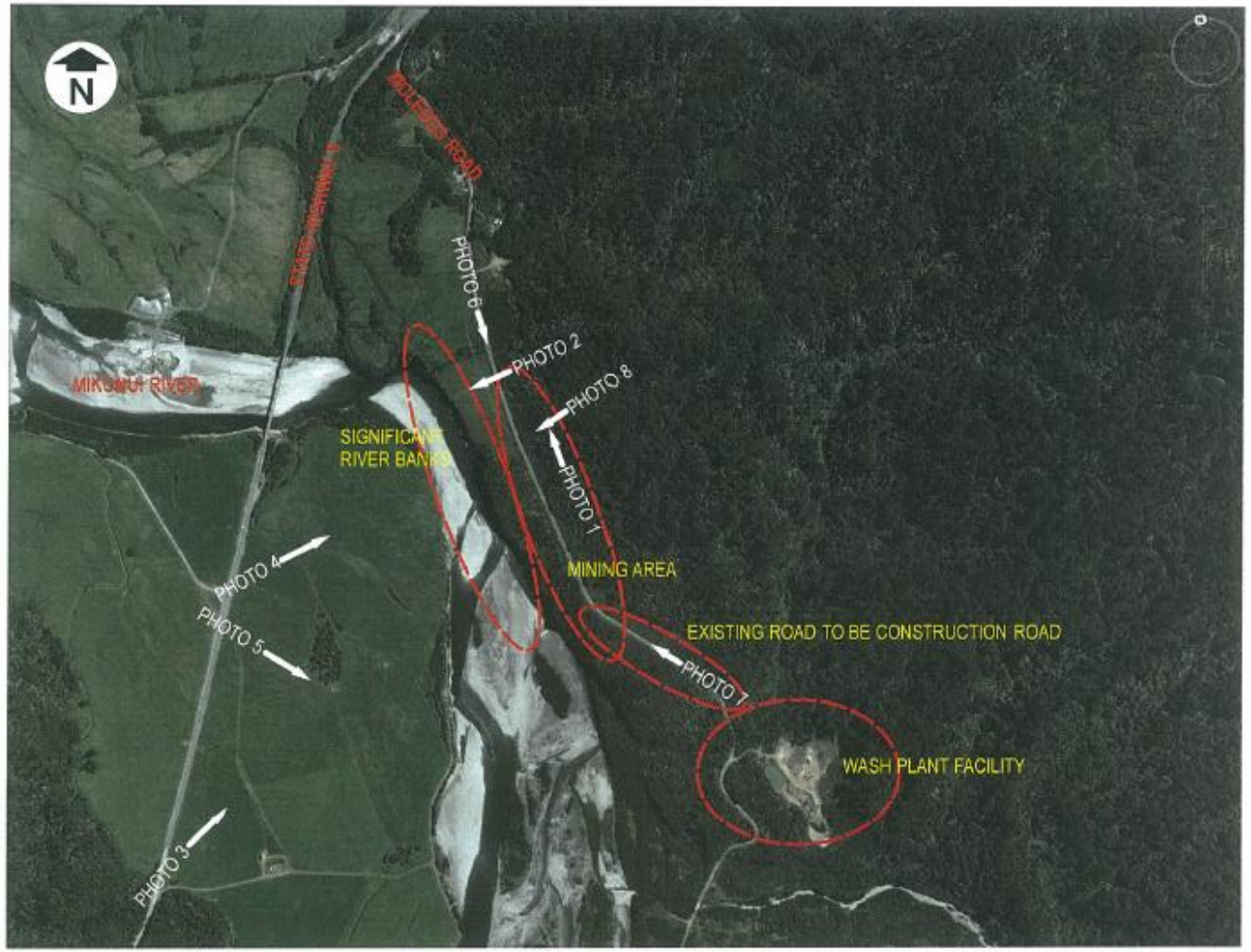


SIMON FERRICK BLA (Hons), DIP HORT, DIP PARKS & REC
MNZILA

LANDSCAPE ARCHITECTS SIMON FERRICK LTD
PO BOX 60-164 TITIRANGI AUCKLAND 0642
PH 09 817 6252 MOB 027 2902803



SHEET 1 SITE PLAN



APPLICATION FOR RESOURCE CONSENT
MINING PERMIT MP53355 - McLEODS ROAD - MIKONUI

Viewpoint Photograph Location Map & Site Features

SHEET **2**

Date: 16th December 2014
Prepared for South West Energy Limited

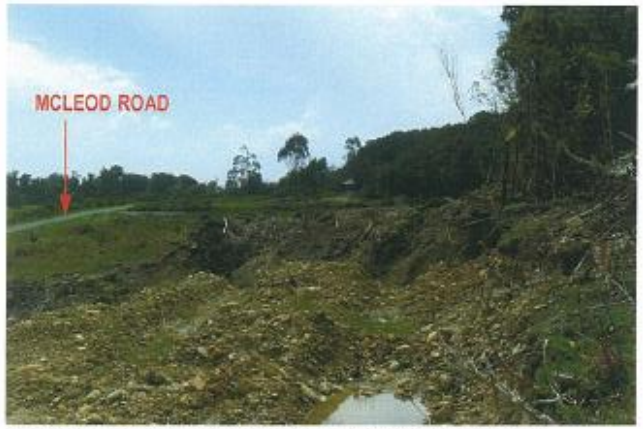


PHOTO 1: THE SITE HAVING BEEN CLEARED OF VEGETATION

PHOTO 2: VIEW FROM MINING SITE TOWARDS STATE HIGHWAY 6

PHOTO 3: VIEW FROM STATE HIGHWAY 6 WHEN HEADING NORTH

PHOTO 4: VIEW FROM STATE HIGHWAY 6 WHEN HEADING NORTH

APPLICATION FOR RESOURCE CONSENT
MINING PERMIT MP53355 - McLEODS ROAD - MIKONUI

Viewpoint Photographs

SHEET **3**

Date: 16th December 2014
Prepared for South West Energy Limited

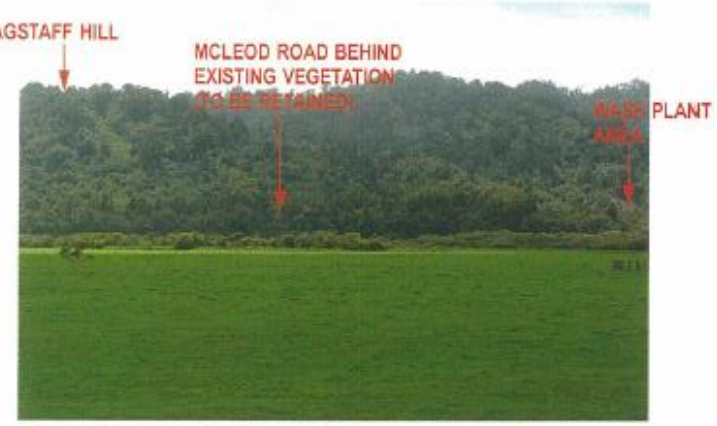


PHOTO 5: VIEW FROM STATE HIGHWAY 6

PHOTO 6: VIEW OF MCLEOD ROAD EXISTING (TO BE REALIGNED)

PHOTO 7: VIEW OF MCLEOD ROAD (TO BE RETAINED)

PHOTO 8: VIEW FROM SITE - EXISTING VEGETATION TO BE RETAINED

APPLICATION FOR RESOURCE CONSENT
MINING PERMIT MP53355 - McLEODS ROAD - MIKONUI

SHEET
4

Viewpoint Photographs

Date: 16th December 2014
Prepared for South West Energy Limited

Annexure Five: Rule 23 West Coast Regional Council Land and Water Plan

Rule 23. Culverts, fords, and bridges

The erection or placement, of a culvert, ford or bridge, in, on, under, or over the bed of a river is a **permitted activity** provided the following conditions are met:

(a) For a culvert, the riverbed at the point of crossing does not exceed 5 metres in width and the base of the culvert is installed and maintained flush with the bed level; and
(b) Any culvert is designed to pass the river's fullest flow, and is constructed with sufficient bank armouring to prevent scour or erosion of abutting river banks; and
(c) Any ford does not raise the bed of a river by more than 300mm (compared with average bed level of the 50_metre reach centred on the crossing); and
(d) The underside of any bridge is at least 600mm above the level of the river's natural bank level; and
(e) For bridges, there are no piers in the riverbed; and

(f) Any bridge does not interfere with navigation; and
(g) Activities do not result in or contribute to:
    i) The impedance of fish passage; or
    ii) Erosion or scouring of any riverbed; or
    iii) Reduction of channel capacity to carry flood flows; and
(h) No refuelling of equipment takes place on any area of a riverbed; and
(i) The structure is maintained in good repair; and
(j) The site is left tidy following the erection or placement; and
(k) Where the activity is undertaken in any wetland identified in Schedule 1 or 2:
    i) For any culvert where the bed is no more than 2.5 metres wide at the point of crossing, native vegetation disturbance does not exceed $25m^2$; for any culvert where the bed is between 2.5 to 5 metres wide at the point of crossing, native vegetation disturbance does not exceed $50m^2$; or
    ii) For any ford, native vegetation disturbance does not exceed $25m^2$; or
    iii) For any bridge, native vegetation disturbance does not exceed $50m^2$; and
    iv) There is no change to the natural flow, path or fluctuation in water level; and
    v) There is no disturbance to inanga (whitebait) and other native fish spawning habitat at any site listed in Schedule 11 during the months of December to May inclusive; and
    vi) No bird nests are disturbed.

Notes:

1. Culverts include cylinders or boxes and may be arched or stacked. If multiple barrels are used then at least one is to be positioned to allow fish passage during low flows.
2. In erecting or maintaining a structure, the conditions of Rule 26 must also be met for any associated bed disturbance.

Annexure Six: Rule 2 West Coast Regional Council Land and Water Plan

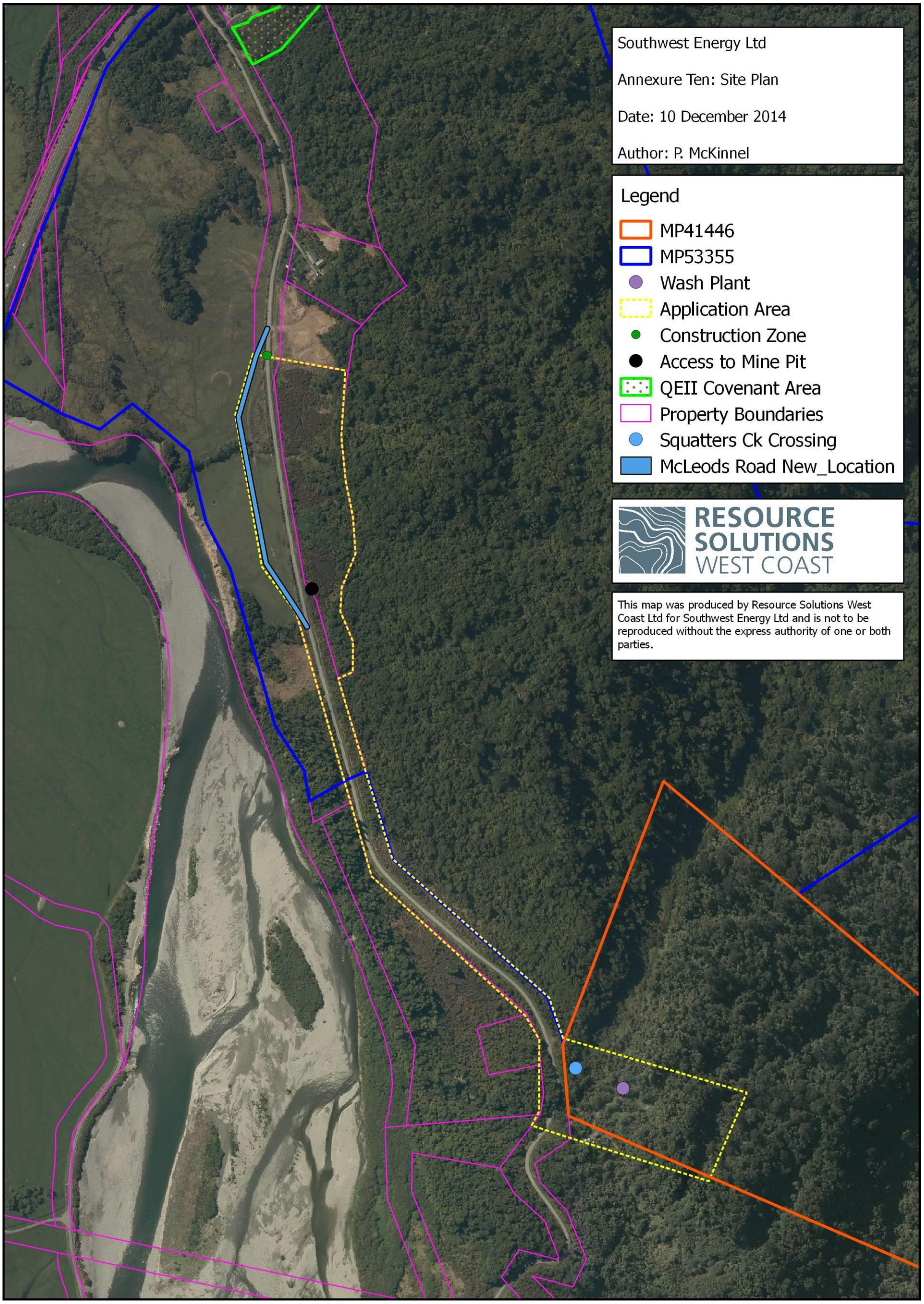
Rule 2. Earthworks in riparian margins

Earthworks within riparian margins, and any associated discharge of sediment are a **permitted activity** if all of the following conditions are met:

(a) The volume of earthworks in the riparian margin must not exceed $25m^3$ and must not involve the cumulative disturbance of more than 20 linear metres in any 200 metre length of riparian margin; and
(b) Sufficient sediment control is constructed so that the activity does not cause the visual clarity of any receiving water to decrease by more than 40%, as measured by black disc beyond 12 times the river's width or 200 metres of the activity, whichever is the lesser; and
(c) No soil or debris is placed directly in any river or lake bed; and
(d) There is no conspicuous deposition of sediment on the bed of any water body; and
(e) The activity does not affect any surface water take; and
(f) There is no disturbance to inanga (whitebait) and other native fish spawning habitat at any site listed in Schedule 11 during the months of December to May inclusive; and
(g) Earthworks are carried out such that:
    i) Formed surfaces with an inward cross fall must have a constructed form of drainage control such as a water table, kerb and channel, swale, channel/ditch, or sumps and pipes, to avoid causing erosion; and
    ii) Any culverts or cut and fill batters are designed and constructed or installed to prevent their failure and avoid causing erosion; and
    iii) Trenches for the purpose of installing pipes, lines, or cables are backfilled and compacted as soon as practicable; and
(h) No refuelling of equipment takes place on any area of a riverbed; and
(i) The activity does not cause or contribute to any slope or land instability, including subsidence or other erosion; and
(j) All areas of bare ground created by the activity are protected from soil erosion as soon as practicable; and
(k) No earthworks occur within any wetland identified in Schedule 1; and
(l) No earthworks occur within any wetland identified in Schedule 2 unless it meets the requirements of Rule 7.

Note: These Rules do not apply to works in river and lake beds – refer to Rules 20 - 38 on River and Lake Bed Activities.

Annexure Seven: Site Plan



Annexure Eight: Noise Meter Specifications

mini pocket type, IEC 651 type 2

SOUND LEVEL METER

Model : SL-4030 *ISO-9001, CE, IEC1010*

FEATURES

* Main specification meet IEC 651 type 2.
* A, C weighting.
* Max. hold.
* Fast/slow time weighting. AC/DC output.
* Range : 3 ranges, 30 to 130 dB.
* Mini pocket size.
* DC 9V battery (006P) or DC 9V adapter in.

Lutron

LUTRON ELECTRONIC

The Art of Measurement

Pocket type

SOUND LEVEL METER

Model : SL-4030

FEATURES

* Large LCD display, easy to read.
* Time weighting and frequency weighting meet , IEC 61672 type 2.
* A & C weighting networks are conformity to standards.
* 0.5" standard out size of the microphone.
* Time weighting (Fast & Slow) dynamic characteristic modes.
* AC / DC output for system expansion.
* External calibration VR.
* Condenser microphone for high accuracy & long-term stability.
* MAX. HOLD function for stored the maximum value.
* Warning indicator for over and under load.
* Low battery indicator.
* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* Used the durable, long-lasting components, including a strong, light weight ABS-plastic housing case.
* Pocket and light weight design allow one hand operation.
* Power by 006P DC 9V battery or DC 9V adapter.

SPECIFICATIONS

Display	LCD size : 49 mm x 25.5 mm, Digit size : 21.7 mm x 8.8 mm.
Function	dB (A & C weighting), Time weighting (Fast, Slow), Max. hold, AC output, DC output.
Measurement Range	A Weighting- 3 ranges, 30 to 130 dB. C Weighting- 3 ranges, 30 to 130 dB.
Resolution	0.1 dB.
Accuracy *(23± 5 ℃)*	1 k Hz - ± 1.5 dB (after cal.) ** Meet IEC 61672 type 2, tested under input signal level on 94 dB & frequency range from 31.5 Hz to 8 k Hz.*
Frequency	31.5 to 8,000 Hz.
Microphone type	Electric condenser microphone.
Microphone size	Out size, 12.7 mm Dia. (0.5 inch).

Weighting Network	Characteristics of A & C.
Range selector	3 ranges (30 to 80 dB, 50 to 100 dB, 80 to 130 dB). ** 50 dB on each step,* ** with over / under range indicating.*
Time weighting (Fast, Slow)	Fast - t= 200 ms, Slow - t = 500 ms, ** "Fast" range is simulated the human ear response time.* ** "Slow" range is easy to get the avg. values of vibration sound level.* ** The "Fast" & "Slow" response range are designed to meet IEC 61672 type 2 requirement.*
Calibrator	B & K (Bruel & kjaer), Multifuction Acoustic Calibrator 4226.
Output Signal	AC output - AC 0.5 Vrms corresponding to each range step. DC output - DC 0.3 to 1.3 VDC, 10 mV / per dB. Output impedance - 600 ohm.
Output terminal	3.5 mm dia. phone output terminal is provided for connection with analyzer, level recorder, tape recorder.
Operating Temperature	0 to 50 ℃.
Operating Humidity	Less than 80% R.H.
Power Supply	006P DC 9V battery (heavy duty type) or DC 9V adapter input.
Power Consumption	Approx. DC 10 mA.
Dimension	200 x 69 x 28 mm (7.9x2.7x1.4 inch).
Weight	213 g/0.5 LB.
Accessories Included	Instruction Manual ..... 1 PC.
Optional Accessories	94 dB sound calibrator, SC-941 94 dB/114 dB sound calibrator, SC-942 AC to DC 9V adapter.

* Appearance and specifications listed in this brochure are subject to change without notice.