IN THE ENVIRONMENT COURT OF NEW ZEALAND
WELLINGTON REGISTRY

I MUA I TE KŌTI TAIAO O AOTEAROA
TE WHANGANUI-Ā-TARA ROHE

ENV-2024-WLG-000001

Under the	**RESOURCE MANAGEMENT ACT 1991**
In the matter of	the direct referral of applications for resource consents under section 87G of the Act for the Mt Munro Wind Farm
By	**MERIDIAN ENERGY LIMITED**
	Applicant

JOINT STATEMENT OF THE EROSION AND SEDIMENT EXPERTS

2 August 2024

INTRODUCTION

1. This joint expert witness statement relates to the direct referral application lodged by Meridian Energy Limited for resource consents to construct, operate and maintain a windfarm on Mt Munro, Eketāhuna.

2. The erosion sediment control experts attending the conference were:

   (a) Kerry Pearce (**KP**) for the Consent Authorities (Manawatū-Whanganui Regional Council, Wellington Regional Council, Tararua District Council, and Masterton District Council)

   (b) Graeme Ridley (**GR**) for Meridian Energy Limited (**MEL**).

3. The conference took place remotely via Microsoft Teams on 2 August 2024.

AGREED AGENDA

4. The agenda for discussion is set out below in Annexure A.

CODE OF CONDUCT

5. This joint witness statement is prepared in accordance with section 9 of the Environment Court Practice Note 2023.

6. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

PURPOSE AND SCOPE OF CONFERENCING

7. The purpose of this expert conferencing was to identify, discuss, and highlight points of agreement and disagreement on acoustic issues.

8. Issues have been identified following the reporting of the Consent Authorities in the s 87F reports, and through evidence filed by MEL and the s 274 parties. At mediation in June 2024, the parties also agreed that some issues would be discussed at expert conferencing.

AGREED ISSUES

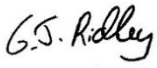
9. Refer to Annexure A and Annexure B.

DISAGREEMENT AND REASONS

10. Refer to Annexure A.

Date: 2 August 2024

Kerry Pearce



Graeme Ridley

ANNEXURE A

In the matter of the Mt Munro windfarm application

Expert conferencing – Erosion and Sediment Control – KP and GR

Issue	Agreed position with reasons	Disagreements with reasons
Topic: Methodology		
1. Appropriateness of methodology and analysis of likely effects	GR + KP agree that the approach taken for construction water management is reflective of best practice and reflected in consent conditions proposed. The process of development of an updated ESCP and subsequent SSESCPs in accordance with consent conditions reflects an appropriate and effective process.	
Topic: Project approach to ESC management		
2. Appropriateness of approach/ESCP and SSESCP Development and Conditions	See comments for Topic 1.	
Topic: Conditions		
3. Refer to [88] of Graeme Ridley evidence, in relation to manual monitoring of SRP discharges. Should this be extended to monitoring of all sediment control measures?		GR position: As per the Construction Water Management Plan the manual monitoring of discharges from sediment retention ponds is adequate. KP position: How is condition ES4 (e) met if you're not monitoring all devices?
4. Refer to [98-101] of Graeme Ridley evidence, in relation to hydroseeding and grass sowing. Will this proposal meet the 14-day stabilisation requirement? If not, what is the appropriate approach?	GR + KP agree that the use of hydroseeding and traditional grass sowing does not meet the definition of a stabilised surface and therefore hydroseeding and traditional grass sowing alone will	

Issue	Agreed position with reasons	Disagreements with reasons
	not be an accepted measure to meet compliance with the 14-day stabilisation requirement. Cross-reference ES4 (l).	
5. Refer to [105] of Graeme Ridley evidence, in relation to the flocculation of DEBs. Should this requirement of flocculation be extended to all sediment retention structures?	Addressed in ES10.	
6. Consider proposed change to condition ES4(e) – how does this affect sediment control measures that discharge to land prior to a water body?	Addressed in ES4 (e).	
7. Consider condition ES4(i) and reference to performance trigger (g) – should this reference be to performance trigger (e)?	Confirmed as per conditions.	
8. Consider condition ES4(g) and the references to performance triggers – confirm the appropriate references.	Confirmed as per conditions.	
9. Consider condition ES4(h) and reference to (j) – confirm the appropriate reference.	Confirmed as per conditions.	
10. Consider condition ES4(f) and reference to (h) – confirm the appropriate reference.	Confirmed as per conditions.	
11. Answer questions from planning experts (see **attached**)	Condition ES3 (c)(x): GR + KP agree that a rainfall trigger is not necessary in the conditions. The CWMP references a rainfall trigger and this can be adopted as required in the ESCP. Condition ES4 (e): Addressed above.	

Issue	Agreed position with reasons	Disagreements with reasons
	Condition ES5 (d) and (e): GR + KP agree that the conditions are appropriate. KP suggests Advice Note for condition ES5 (d) refers to Horizons As-built form.	
Topic: Other matters		
12. Any other matters	The experts are in agreement with the deletion of the Advice Note. The planning team (Meridian and Council Planners) are to confirm that the intent of the advice note is already included within the conditions. GR believes that condition (q) should be deleted and both agree that it should go back to the planners to confirm the intent of the condition – what is the consent condition requiring that is not covered by the rest of the document (CWMP), particularly ES5 (c)(xiii). The experts agree to the changes made in blue in the ES Conditions at Annexure B, with ~~strikethrough~~ for deletion of text and underline for addition of text. Planners are to check the terminology of 'fill disposal areas' in ES5 (c)(i). Can the planners please confirm the intent of the condition at ES5 (c)(i) regarding wetlands as a no-go area. Planners to cross-reference at ES5 (c)(vii) after "Dewatering Management Procedure" to the appropriate condition at ES3 (c)(ii).	Condition ES4(e): GR position is that this condition sets the performance target and does not require specific monitoring of all sediment control measures. GR wishes to see 'overland flow paths' deleted from the bullet point at ES5 (c)(i); KP suggests a definition of an 'overland flow path' might be another approach.

Issue	Agreed position with reasons	Disagreements with reasons
	GR + KP confirm that the intent of the ES10 condition is to require chemical treatment on all SRPs, HDEBs and DEBs unless the SSESCP certification process confirms otherwise. GR + KP agree that condition ES10 (f) provides minimal value and is potentially already addressed through condition ES4 (e)(i). GR + KP believe this condition (ES10 (f)) could be deleted.	

ANNEXURE B

Conditions development – version control

Recommended conditions contained in Appendix 23 to the s87F report dated 15 March 2024.

Meridian's recommended proposed changes to conditions contained in Appendix A of Mr Tom Anderson dated 24 May 2024. *These changes are shown in red, with ~~strikethrough~~ for deletion of text and underline for addition of text.*

Changes proposed following Meridian and Council conditions workshop held on 11-12 July 2024. *These changes are shown in green, with ~~strikethrough~~ for deletion of text and underline for addition of text.*

Changes proposed following ESC Expert Conferencing held on 2 August 2024. *These changes are shown in blue, with ~~strikethrough~~ for deletion of text and underline for addition of text.*

EARTHWORKS STABILITY STANDARDS

EW1 **Cleanfill Material**

a. All earthworks material and imported material deposited as part of the works authorised by these consents must be cleanfill material.

EW2 **Cut and Fill Locations and Stability**

a. The Consent Holder must undertake further investigations and assessment to confirm the geotechnical conditions to inform the detailed design of cut and fill earthworks including treatment of existing slope instability, road cut batter stability and fill batter stability, in accordance with *Indicative Fill Disposal Areas Plan* (Drawing No. 1016884.1000-016), Tonkin + Taylor, dated October 2023.

b. The outcome of the assessment required by **Condition ~~EW1~~ EW2(a)** must be provided to the Councils for information and comment within **twenty (20) working days** of the assessment being completed. The Councils will provide any comments they have on the assessment within **ten (10) working days** of receiving it.

c. The Consent Holder must engage a SQEP who is a Chartered Professional Engineer with experience in geotechnical engineering or geology to ensure that the permanent cut slopes and fill sites are appropriately assessed for stability during and following construction. If instability / failure is observed during or following construction, appropriate mitigation measures such as material clearance, slope batter reprofiling/benching, localised drainage controls or localised slope stabilisation measures must be implemented within **five (5) working days** of the instability / failure occurring.

d. Earthwork fill areas with the exception of the proposed access roads must be finished with a maximum gradient of 1(vertical):3(horizontal).

e. Engineered fill utilised for roads can be finished with a gradient of 1 (vertical):2(horizontal).

f. Fill placement within the disposal areas ~~shall~~ must be assessed in accordance with the following criteria:

I. Avoidance of wetlands and streams.

II. Avoidance of indigenous vegetation.

III. Geotechnical considerations including the criteria outlined in clause (g);

IV. Minimization of catchment area above fill site (5ha maximum); and

V. Sufficiency of room for the placement of erosion and sediment control measures.

g. Geotechnical criteria for the assessment of fill locations (prior to and during construction) includes:

I. An inspection by a suitably qualified and experienced ~~engineer or geologist is~~ ~~who is a~~ Chartered Professional Engineer with experience in geotechnical engineering or geology to approve the fill site location and the proposed batter slope profiles.

II. Fill disposal areas ~~shall~~ must be chosen in areas that are visibly free of groundwater seepages and instability.

III. All topsoil and soft or loose surficial soils is to be removed prior to fill placement where needed to ensure fill slope stability.

IV. Bench in the base of the fill disposal area into stiff or medium dense soil, or rock.

V. ~~Engineer~~ A suitably qualified and experienced engineer or geologist ~~is who is a~~ Chartered Professional Engineer with experience in geotechnical engineering or geology ~~shall~~ must determine under drainage details including layout and centres, additional drains and capacity to be installed over potential seepage zones.

VI. Fills ~~shall~~ must be placed and compacted in layer thicknesses and to compaction standards defined during detailed design.

VII. Fill placement ~~shall~~ must be inspected by a suitably qualified engineer or geologist.

EW3 A ~~SQEP~~ suitably qualified and experienced engineer who is a Chartered Professional Engineer with experience in geotechnical engineering or geology must assess the cut slopes, fill areas and spoil sites and confirm the appropriate batter angle if, for example, thick surficial deposits, groundwater seepages, adversely oriented prominent discontinuities in the rock or inactive fault zones are exposed. This person must ensure all contracted operations and personnel have clearly defined roles and responsibilities to monitor compliance with the conditions of these resource consents. This person must be available to meet with the Councils on request.

EROSION AND SEDIMENT CONTROL

ES1 **Supervision**

The erosion and sediment control measures to manage the effects of activities authorised by these resource consents must be managed and supervised by a SQEP in erosion and sediment control measures. This person must ensure all contracted operations and personnel have clearly defined roles and responsibilities to monitor compliance with the conditions of these resource consents. This person must be available to meet with the Councils on request.

~~ES2 A SQEP suitably qualified and experienced engineer who is a Charter Professional Engineer with experience in geotechnical engineering or geology must assess the cut slopes, fill areas and spoil sites and confirm the appropriate batter angle if, for example, thick surficial deposits, groundwater seepages, adversely oriented prominent discontinuities in the rock or inactive fault zones are exposed. This person must ensure all contracted operations and personnel have clearly defined roles and responsibilities to monitor compliance with the conditions of these resource consents. This person must be available to meet with the Councils on request.~~

ES3 **Erosion and Sediment Control Plan (ESCP)**

a. At least **forty (40) working days** prior to the commencement of construction activities authorised by these resource consents, the Consent Holder must submit an overarching ~~Project~~ ESCP prepared by a SQEP in erosion and sediment control to the Regional Councils for certification.

b. The ~~Project~~ ESCP required by clause (a) must be prepared in general accordance with the document titled *"Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region"* dated February 2021 (the GW Guidelines), or any later revision of the GW Guidelines.

c. The ~~Project~~ ESCP must include the following information:

   i. Details of all principles, procedures and practices that will be implemented to undertake erosion and sediment control across the site and minimise the potential for sediment discharges;

   ii. A Dewatering Management Procedure to ensure that the required level of sediment treatment is achieved on site during dewatering operations;

   iii. The ESCP must utilise the principles detailed in ~~the appendices b and c of~~ the *Meridian Energy Mt Munro Windfarm Construction Water Management Plan and effects assessment report* prepared by Ridley Dunphy dated May 2023.

   iv. A construction programme including timing of scheduled earthworks and instream works activities;

   v. Approaches to weather forecasting and how this relates to onsite monitoring requirements, rainfall response and contingency measures including procedures to minimise adverse effects in the event of extreme rainfall exceeding the applied rainfall trigger event and / or the failure of any key erosion and sediment control structures;

vi. Response actions, and timings of action, to implement following exceedances of performance targets in Condition ES4;

vii. Procedures for and timing of reviews and / or amendments to the certified ESCP;

viii. The approach to establishment, operation and maintenance and, decommissioning of erosion and sediment control devices and measures;

ix. Details on the frequency of inspections and monitoring of all stormwater, dust, erosion and sediment control measures throughout each stage (if applicable) of construction works, including details of the person(s) responsible for inspections and monitoring; and

x. Reporting requirements including rainfall trigger event reporting, reporting following an exceedance of a performance target, monthly reporting and annual reporting

xi. A summary of any feedback received from any consultees listed under clause (d) about the Project ESCP, changes made in response to that feedback (if any), and where a change is not made the reason(s) for that.

d. Construction activities authorised under these resource consents must not commence until the Project ESCP required by clause (a) has been certified in writing by the Regional Councils.

~~Advice Note: The Construction Water Management Plan and Effects Assessment report provided with the application can be utilised for fulfilling the requirements of this condition with amendments made to reflect any updated design details and ensure the conditions of consent ES3(c) are fully addressed.~~

ES4 **Erosion and Sediment Control Performance**

Sediment Control

a. Sediment losses to natural water arising from activities authorised by these resource consents must be minimised for the duration of the physical works ~~authorised by these resource consents~~ and until the expiry of the resource consents through the establishment, operation and maintenance of erosion and sediment control measures in general accordance with the GW Guidelines except where a higher standard is referred to in the Project ESCP or a certified SSESCP, in which case the higher standard applies.

b. All sediment laden runoff resulting from works authorised by these resource consents must be treated by erosion and sediment control devices and/or measures established and maintained in accordance with a certified SSESCP and the GW Guidelines.

c. The Consent Holder must ensure that, as far as practicable, all clean water runoff from stabilised surfaces including catchment areas above works areas is diverted away from exposed areas via a stabilised system to prevent erosion, including erosion at any associated outfall(s).

d. Any excess unsuitable material must be disposed of at a spoil site in a manner that ensures it will not lead to any instability or collapse affecting either the spoil site or waterbody including any wetlands.

~~*Discharge Standards*~~ *Performance Targets*

e. Erosion and sediment control measures or devices must be designed, operated and maintained to achieve the following performance targets from the discharge of sediment control measures ~~to any water body~~:

i. ~~the~~ pH ~~of any discharge to any water body must~~ not ~~be~~ less than 5.5 or greater than 8.5;

ii. 100mm clarity or greater, measured by Secchi disc or clarity tube or alternative as approved by Council.

f. Any discharge of dewatered groundwater must meet the ~~clarity standard~~ performance target specified for in (e) or must be discharged via a sediment retention device provided the device is not currently receiving run-off and is large enough to impound water to achieve the required clarity.

g. Where a performance ~~trigger~~ target in (e)~~, (h) or (i)~~ is not achieved, an investigation must be undertaken to:

i. confirm the reason why the performance ~~trigger~~ target(s) has not been achieved, with reference to the relevant catchment; and

ii. develop and implement response measures to achieve the performance ~~trigger~~ target(s) in the future.

h. Following the completion of the investigation required by (g), all recommended response measures must be implemented within with **five (5) working days**, except where the Regional Council agrees in writing to a longer timeframe for the implementation of response measures.

i. Where the performance ~~trigger~~ target in (~~hg~~) (e) ii. is not achieved in two or more rounds of consecutive monitoring or where there are three or more exceedances within a six (6) month period of monitoring, escalating response measures to address poor performance of a sediment retention device must be undertaken to ensure the sediment retention devices achieve 100mm clarity or greater.

~~**ADVICE NOTE:** This Condition does not preclude any other enforcement action that may need to be taken to address repeated non-compliance(s) with the conditions of these resource consents.~~

j. A report that summarises the investigation and response measures required by ~~(ii)~~ (g) and (h) must be provided to the Regional Councils in writing within **five (5) working days** of the performance ~~trigger~~ target not being achieved.

Stabilisation

k. Where a 'cut and cover' methodology will be utilised as the primary form of erosion and sediment control, any exposed soil surfaces must be covered within **24hrs** of becoming exposed.

l. Areas of the site where earthworks have been completed must be stabilised to prevent erosion as soon as practicable and within **fourteen (14) days** of completion of any works authorised by these resource consents, unless otherwise provided for in a certified SSESCP.

m. For all trenching works or underground service installations, any open trench or otherwise disturbed area must be stabilised prior to any rainfall unless the works are provided for by a certified SSESCP.

Erosion and Sediment Control Design Standards

n. All sediment retention devices including sediment retention ponds, decanting earth bunds and hybrid decanting earth bunds must be designed to a minimum volume of 3% of the contributing catchment area, unless otherwise approved in writing by the Regional Councils.

o. The locations of all sediment retention devices including sediment retention ponds, decanting earth bunds and hybrid decanting earth bunds must be assessed by a chartered professional geotechnical engineer. In addition, sediment retention ponds shall be subject to geotechnical supervision during construction.

p. Where the embankment of, or part thereof, any sediment retention devices including sediment retention ponds, decanting earth bunds and hybrid decanting earth bunds is to be constructed using fill material, this work must be undertaken with appropriate geotechnical engineering oversight.

Monitoring and Maintenance

q. The Consent Holder must ensure that all erosion and sediment control structures are inspected on a weekly basis and within **twenty four (24) hours** of each rainstorm event that is likely to impair the function or performance of the controls.

r. The Consent Holder must carry out monitoring and maintenance of erosion and sediment controls in accordance with the conditions of this resource consent and must maintain records detailing:

   i. The date, time and results of the monitoring undertaken;

   ii. The erosion and sediment controls that required maintenance; and

   iii. The date and time when the maintenance was completed.

   These records must be provided to the Regional Councils at all reasonable times and within **three (3) days** of a written request to do so.

ADVICE NOTE: This Condition does not preclude any other enforcement action that may need to be taken to address ~~repeated~~ non-compliance(s) with the conditions of these resource consents.

ES5 **Site-Specific Erosion and Sediment Control Plans (SSESCP)**

a. At least **ten (10) working days** prior to the commencement of construction activities in any given area of the site the Consent Holder must submit to the Regional Councils a Site-Specific Erosion and Sediment Control Plan (SSESCP) for certification. This SSESCP must be ~~consistent~~ in general accordance with the ESCP as per Condition ES3.

b. Any SSESCP required to be submitted under clause (a) of this Condition must be prepared by a SQEP in erosion control and in accordance with the Project ESCP required by **Condition ES3** and in general accordance with the GW Guidelines.

c. The SSESCP must include the following information:

i. A plan or a series of plans showing:

- Catchment boundaries and contours;
- Areas to be disturbed;
- Cut and Fill areas;
- Soil stockpile areas;
- ~~Spoil sites~~ fill disposal areas;
- Culverts;
- Stream diversions;
- Erosion and sediment control devices and measures;
- Streams, overland flow paths, wetlands and any exclusions / "no go" areas including but not limited to ecological features such as wetlands, any identified contaminated areas, any potential archaeological sites;
- ~~All weather access to erosion and sediment control devices.~~

ii. The specific erosion and sediment control measures that will be applied to each stage (if applicable) of earthworks, including the location(s), dimension(s) and capacity of any control structure(s);

iii. Details of any further chemical treatment bench testing and recommendations as per Condition ES10 and specific to the SSESCP;

iv. Supporting calculations and design drawings of all erosion and sediment control structures;

v. Expected commencement dates for the implementation of erosion and sediment control measures;

vi. Location(s) of stabilised entranceway(s);

vii. Details of any dewatering and how this will be undertaken in accordance with the Dewatering Management Procedure;

viii. ~~Any exclusions / "no go" areas including but not limited to ecological features such as wetlands, any identified contaminated areas, any potential archaeological sites;~~

ix. Identification of any specific erosion and sediment control risk, the nature of the risk, the exposure of works to heavy rainfall and/or flood flows and any specific actions to manage this risk;

x. Details of any temporary and / or permanent stabilization with reference to ES4 (k) and (l);

xi. Construction methodologies applying to any proposed instream structures;

xii. Details of who is undertaking the work and contact details;

xiii. Monitoring and maintenance for all erosion and sediment control measures on a regular frequency or within 24 hours of a rain or snowfall event that could impair the function or performance of the control measures;

xiv. Expected removal or decommissioning of erosion and sediment control measures;

xv. An inspection and reporting schedule, in particular in response to ~~adverse weather conditions~~ rainfall trigger event;

xvi. Maintenance activities.

xvii. Decommissioning methodology as per condition ES8.

i. ~~The specific erosion and sediment control measures that will be applied to each stage (if applicable) of earthworks, including the location(s), dimension(s) and capacity of any control structure(s);~~

ii. ~~Supporting calculations and design drawings of all stormwater and sediment control structures;~~

iii. ~~Catchment boundaries and landform contours;~~

iv. ~~Location(s) of stabilised entranceway(s);~~

v. ~~Details of any dewatering and how this will be undertaken in accordance with the Dewatering Management Procedure;~~

vi. ~~Any exclusions / "no go" areas including but not limited to ecological features such as wetlands, any identified contaminated areas, any potential archaeological sites;~~

vii. ~~Details of any temporary and / or permanent stabilisation; and~~

viii. ~~Construction methodologies applying to any proposed instream structures.~~

d. At least **one (1) working day** prior to bulk earthworks (not including any land disturbance necessary to install erosion and sediment control structures) commencing within an area

and in accordance with a certified SSESCP, ~~a certification statement and as-built plans must be provided~~ the Consent Holder ~~shall~~ must confirm in writing to the Regional Councils that the erosion and sediment control structures ~~to demonstrate that all structures, including sediment retention ponds, decanting earth bunds and diversion channels and/or bunds,~~ have been constructed in accordance with the certified SSESCP and in general accordance with the GW Guidelines.

e. The as-built plans required by clause (d) must include the dose rate, and corresponding catch tray and header tank outlet pipe sizes, for each chemical treatment system to be implemented for sediment retention ponds and decanting earth bunds within the area covered by the SSESCP based on the FMP required by **Condition ES10**.

ES6 **SSESCP Certification**

a. Each SSESCP must be certified in writing by the Regional Councils prior to the commencement of works in any area subject to the SSESCP.

b. Certification (or withholding certification) is based on the Regional Council's assessment of whether the SSESCP meets the requirements of the conditions of these resource consents and ~~in particular~~ is ~~consistent~~ in general accordance with the requirements and measures in the GW Guidelines.

ES7 **Amending a Certified SSESCP**

a. Where compliance with the GW Guidelines continues to be achieved, the following may be undertaken prior to an SSESCP being amended subject to a retrospectively amended SSESCP being provided to the Regional Councils within **ten (10) working days**:

   i. The addition of silt fences and super silt fences;

   ii. Changes to the dimensions or configuration of a sediment retention pond or decanting earth bund provided the GW Guideline specifications are still met; and

   iii. The installation of additional erosion and sediment control measures where these do not affect existing devices or measures.

b. An SSESCP may be amended or updated without the need for certification where:

   i. An amendment is an administrative change, such as a change in contact details; or

   ii. The amendment is to the location of an erosion and sediment control where each control is sized for the captured area and shown on as-built plans in a new location and compliance with the GW Guidelines is maintained; or

   iii. The amendment provides additional laydown areas within the area of works subject to the SSESCP and does not impact on existing controls; or

   iv. The amendment changes bund or diversion construction (excluding changes to dimension and capacity); or

v. The revised SSESCP is provided to the Regional Councils who advises in writing that the amendment need not be certified under clause (c) on the basis that the amendments meet the requirements of clauses (a)(i) to (iii); and

vi. The amendment does not result in works occurring during the period 1 May to 30 September inclusive unless authorised under Condition ES9.

c. Except as provided for in clauses (a) and (b), amendments to an SSESCP must be certified in writing by the Regional Councils prior to the commencement of works in any area subject to the SSESCP.

d. Certification (or withholding certification) is based on the Regional Council's assessment of whether the SSESCP meets the requirements of the conditions of these resource consents and, in particular, is ~~consistent~~ in general accordance with the requirements and measures in the GW Guidelines.

ES8 **Decommissioning**

a. Erosion and sediment control devices or measures must only be removed:

i. When the corresponding catchment area has been permanently stabilised; or

ii. In accordance with a certified SSESCP.

b. The removal of an erosion and sediment retention device must only occur after consultation and the receipt of written approval from Regional Councils. Such approval must be based on information provided by the Consent Holder in relation to the quality of discharged water and the receiving environment and the adequacy of soil stabilisation and/or covering vegetation.

ES9 **Winter Works Authorisation(s)**

a. Unless otherwise provided for under a certified SSESCP required by Conditions ES5, ES6 and ES7, ~~B~~bulk earthworks activities authorised by these resource consents must not be carried out during the winter period between **1 May to 30 September** (inclusive) ~~unless prior written approval of the Regional Councils in writing is obtained~~.

b. The Consent Holder must ensure the site is stabilised by **30 April** of each year unless otherwise provided for by a certified SSESCP under clause (a) above ~~otherwise approved in writing under clause (a) above, including a SSESCP~~. Stabilisation must be in general accordance with the measures detailed in the GW Guidelines where stabilisation may include vegetative and/or structural measures and including pavement, metalling, hydroseeding, re-vegetation and mulching) that will reduce erosion of exposed soil to the extent practicable.

c. Any request to undertake earthworks during the period **1 May to 30 September** (inclusive) which has not otherwise been provided for under a certified SSESCP ~~as per Conditions ES5, ES6 and ES7~~ must be submitted in writing to the Regional Councils at least **ten (10) working**

days prior to works commencing in the specified period. In considering a request received in accordance with this condition, the Regional Councils will consider the following:

i. The scope/nature of the proposed works;

ii. Structural controls proposed, or existing, that will be/are installed;

iii. Additional non-structural controls to be implemented (e.g. increased on site monitoring and staging); and

iv. Maintenance consideration of structural controls to ensure effective access can be achieved to undertake the maintenance and controls continue to work efficiency.

v. Compliance history and performance of the site, if available; and

vi. Sensitivity of the receiving environment subject to the winter works.

i. ~~The nature of the site and the nature of any construction / soil disturbance works proposed;~~

ii. ~~The effectiveness of any existing and/or proposed erosion and sediment controls;~~

iii. ~~The compliance history and performance of the site and Contractor;~~

iv. ~~The seasonal history of weather conditions at the site; and~~

v. ~~Sensitivity of the receiving environment.~~

ES10 **Flocculation Management Plan**

a. At least **forty (40) working days** prior to the commencement of construction activities authorised by these resource consents, the Consent Holder must engage a SQEP in flocculation management to prepare and submit a Flocculation Management Plan (FMP) for certification to the Regional Councils as an addendum to the ~~Project~~ ESCP required by **Condition ES3**.

b. The purpose of the FMP required by clause (a) is to describe the chemical treatment and flocculation management system(s) to be implemented to enhance the efficiency of sediment retention ponds (SRP), decanting earth bunds (DEB) or hybrid decanting earth bunds (HDEB).

c. The FMP must include the following information:

i. Results of an initial flocculation trial through the provision of site-specific soil bench testing;

ii. Dependent upon the results of the bench testing, specific design details of the flocculation system with rainfall or flow activated delivery systems for the sediment retention devices;

iii. An analysis of soil reactivity to chemical treatment;

iv. Specific design details of the proposed flocculation management system for each sediment retention device including SRPs, DEBs and HDEBs;

v. Monitoring (including pH triggers), maintenance and systems for recording dosing and inspections;

vi. Appropriate procedures and actions when it is determined through monitoring that chemical treatment is not proving effective and/or the performance targets in **Condition ES4** have been exceeded;

vii. A spill contingency; and

viii. Contact details of the person responsible for the operation and maintenance of the flocculation management system and reporting structure.

d. Construction activities authorised under these resource consents must not commence until the FMP required by clause (a) has been certified in writing by the Regional Councils.

e. Unless otherwise certified in writing by the Regional Councils acting in a technical certification and confirmed in the SSESCP, the Consent Holder must chemically treat the sediment impoundment devices for the purpose of reducing sediment discharges from the site and must ensure that the Flocculation Management Plan required by **Condition ESC10 (c)** is implemented.

f. Unless site specific analysis provides evidence to the contrary, as detailed in the Flocculation Management Plan required by **Condition ESC10 (c)**, the Consent Holder must ensure that the soluble aluminium concentration of any discharge from the sediment retention pond, hybrid decanting earth bunds or decanting earth bunds does not exceed 0.2 grams per cubic metre.

ES11 **Spill Management Plan**

a. The Consent Holder must submit a Spill Management Plan for certification to the Regional Councils as an addendum to the ~~Project~~ ESCP required by **Condition ES3** at **least ten (10) days prior** to the commencement of any works authorised by this consent. The Spill Management Plan must include but not be limited to the following information:

i. Person(s) responsible for responding to any spills;

ii. Potential sources of contaminants from the site and the proposed works; and

iii. The proposed response/remedial procedures and related timeframes.