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ENGINEERS • RESOURCE MANAGERS • SURVEYORS

362 JONES ROAD,
HUNUA

FILL MANAGEMENT PLAN

SCARBRO ENVIRONMENTAL LTD

362 JONES ROAD HUNUA

FILL MANAGEMENT PLAN

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Reviewer	Sean Finnigan	Date	8 December 2025

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SCARBRO ENVIRONMENTAL LTD
362 JONES ROAD, HUNUA

FILL MANAGEMENT PLAN

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362 JONES ROAD, HUNUA

FILL MANAGEMENT PLAN

1.0 INTRODUCTION

1.1 PURPOSE

In response to instructions from Scarbro Environmental (SEL), Fraser Thomas (FTL Ltd) has prepared this Fill Management Plan (FMP) to support a Fill Facility operation at 362 Jones Road, Hunua (Part Allotment 10 and Allotment 264 Parish of Hunua) (approximately 25.2ha; 'subject site').

The Fill Facility comprises two separate areas of 9ha and 2ha (including associated drains and sediment ponds) on the northern and southern sides of the site respectively, with an estimated combined fill volume of 790,000m^3. Filling will take place over a period of 5-10 years and consent has been granted for a total period of 10 years, providing some contingency should fill volumes be less than anticipated.

This FMP has been prepared in accordance with the requirements of the WasteMINZ Technical Guidelines for Disposal to Land (September 2023) and the Auckland Unitary Plan:Operative in Part (AUP:OP) clean fill and managed fill requirements. Its scope is consistent with the medium scale nature of the proposed filling activity on-site.

A copy of this plan will be kept on-site in all site vehicles and made available to all truck drivers bringing fill to the site. A copy will also be kept at the site office.

1.2 SITE LOCATION, IDENTIFICATION AND ZONING

Registered Owner	Lynley Ruth Monk, Lance Richard Patrick, Trevor Bryce Patrick, Wayne John Patrick (Scarbro Environmental Ltd purchasing property)
Street Address	362 Jones Road, Hunua, Auckland
Legal Description	Part Allotment 10 and Allotment 264 Parish of Hunua
Zoning	Rural - Rural Production zone
Area	25.2 ha

The subject site (362 Jones Road, Hunua) is a 25.2ha rural property situated on the western side of Jones Rd and north of Hunua Road, approximately 16km east of the Papakura interchange (SH1/Beach Road) on the Southern Motorway (refer Figure 1 and Figure 2 for site location plan and subject site). The site is zoned "Rural - Rural Production zone" under the AUP:OP.

Figure 1 shows the site location in relation to the Southern Motorway. Figure 2 shows the subject site.

Figure 1: Site Location Plan

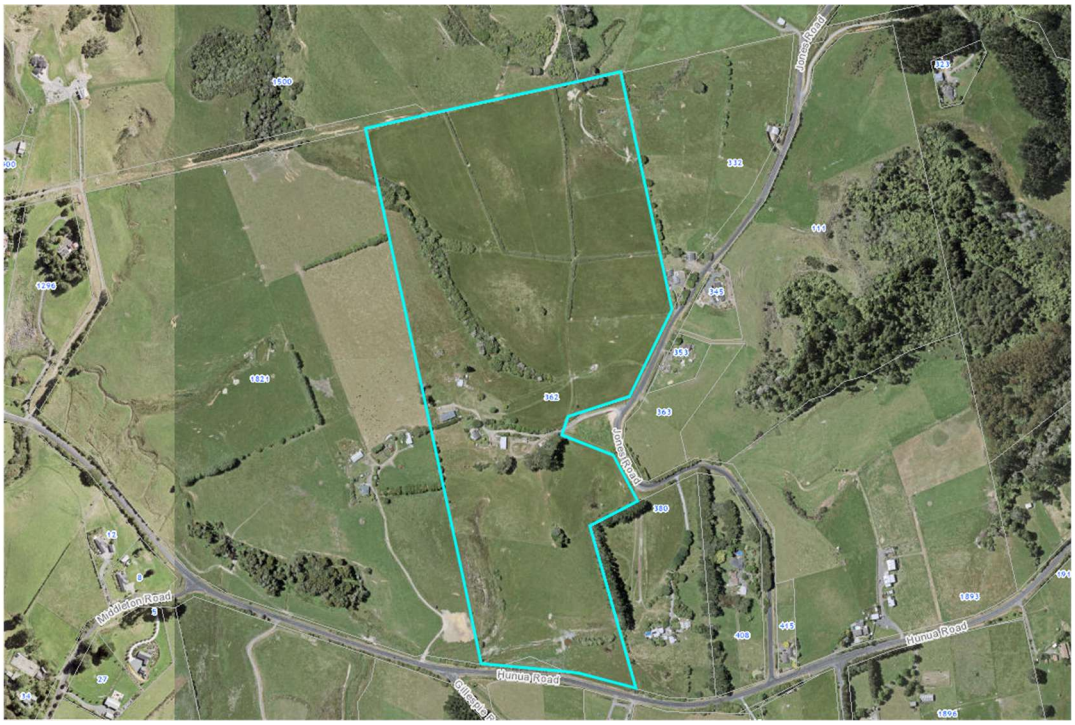

Figure 2: Subject site- 362 Jones Road (Source: Council Geomaps)

1.3 SITE DESCRIPTION

The subject site has been historically used for farming purposes (pastoral grazing) and is largely covered in grass. The centre of the site has been used for residential purposes since at least the 1940s and includes several buildings and animal pens. The site is surrounded by properties in use for a mix of rural, rural-residential, and pastoral purposes. Existing site access is off Jones Rd.

The existing groundwater bore and pump shed located in the northern fill area is to be decommissioned and capped as part of fill development works.

1.4 TOPOGRAPHY, SOILS, GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

1.4.1 Topography

The site has a moderate sloping landscape, including multiple gullies. The northern area is a gently rolling hill grading down to a stream running along the western boundary of the site, and to the north of the site. The highest point of the area is along the eastern boundary. The southern area is a steeper hilly area, which grades from a ridge down to a separate stream along the western boundary of the site.

1.4.2 Soils

The Manaaki Whenua - Landcare Research soils map shows the site to have Albic Ultic (UE) soils.

1.4.3 Geology

The Geological and Nuclear Sciences geological web map (NZ 1:250,000) indicates that the site is underlain by sandstone and siltstone rocks of the Waipapa group, consisting of a massive to thin bedded, lithic volcaniclastic metasandstone and argillite, with tectonically enclosed spilite, chert and red and green argillite.

Fraser Thomas Ltd have undertaken a geotechnical investigation of the subject site involving 23 hand augered boreholes (H1 – H23) across proposed filling areas and associated access roading.

Topsoils were generally encountered between 0.2 – 0.4m depth below ground level (BGL). Topsoil was not encountered in Boreholes H10, H12, H14 and H19.

Fill was encountered beneath the surficial topsoil material in Boreholes H15, H18, H21, H22 and H23 to a depth of approximately 1.5m, 1.0m, 1.5m and 0.6m BGL respectively, and to the extent of Borehole H21. The fill material generally comprised of gravelly silts and clayey silts. Borehole locations H15 & H21 – H23 are located in the southernmost section of the site, and location H18 is located by the southern culvert. Due to the proximity of these locations to Hunua Road, it is suggested that the fill may have been reworked during construction of the cut section of road.

1.4.4 Stormwater Drainage

The Council Geomaps website shows that the site is subject to four overland flowpaths (OLFPs).

The southern side of the site is subject to two overland flowpaths. OLFP1 runs along the main stream along the southern boundary (estimated 14.1ha catchment area). The contributing catchment of the OLFP is from upstream of the site as well as from the southern side of Hunua Road, as there are culverts under the road that will take some (minor) runoff under Hunua Road. OLFP2 runs along the western boundary (estimated 5.3ha catchment area). OLFPs 1 and 2 are shown in Figure 3 below.

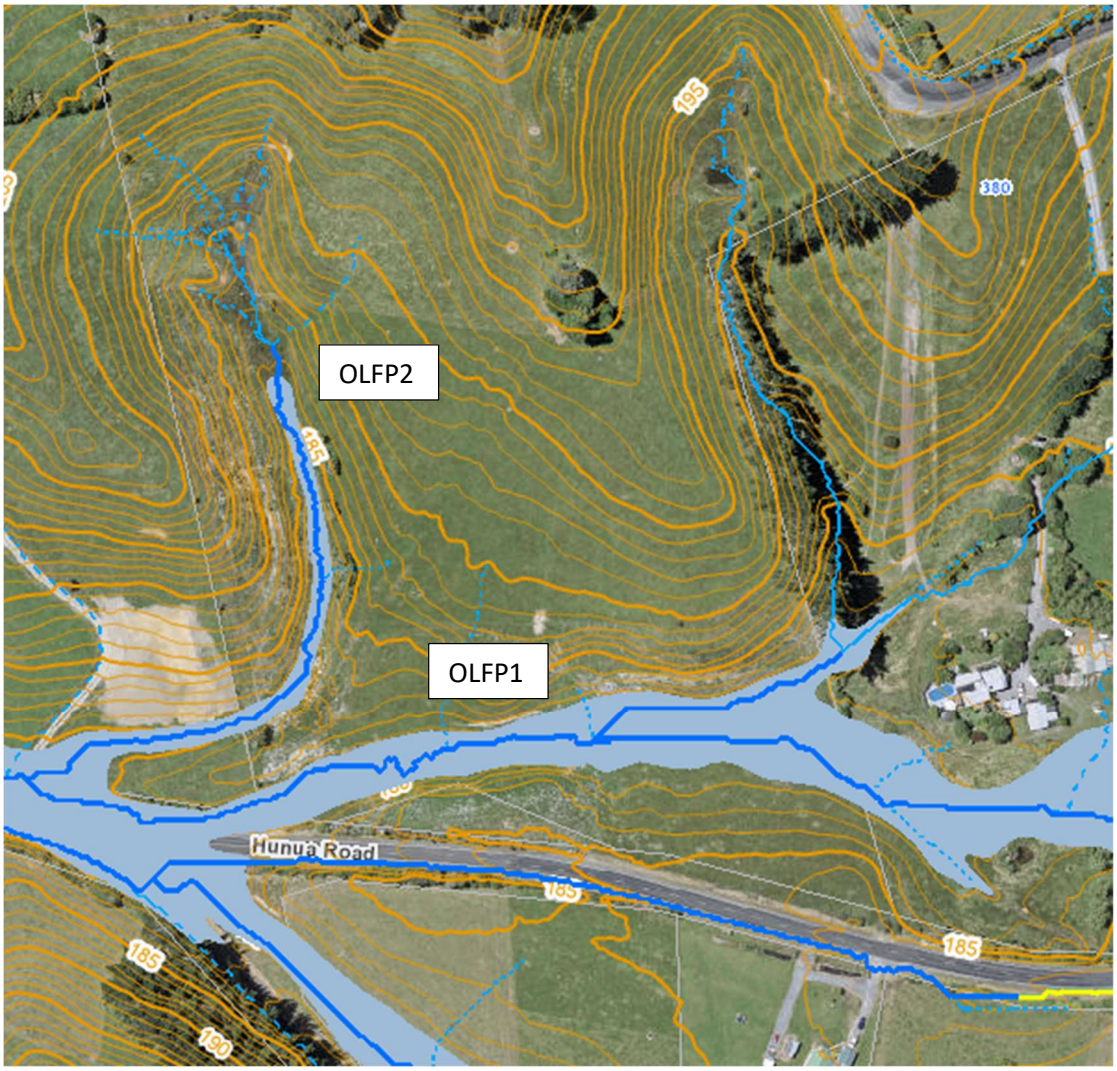

Figure 3: Geomaps OLFP and Floodplain Data for the Southern Area of the Site

The northern side of the site is also subject to two overland flowpaths. OLFP3 runs along the main stream along the north western boundary (estimated 16.4ha catchment area at site boundary), and OLFP4 along the northern boundary (estimated 12.3ha catchment area at site boundary). OLFPs 3 and 4 are shown in Figure 4 below.

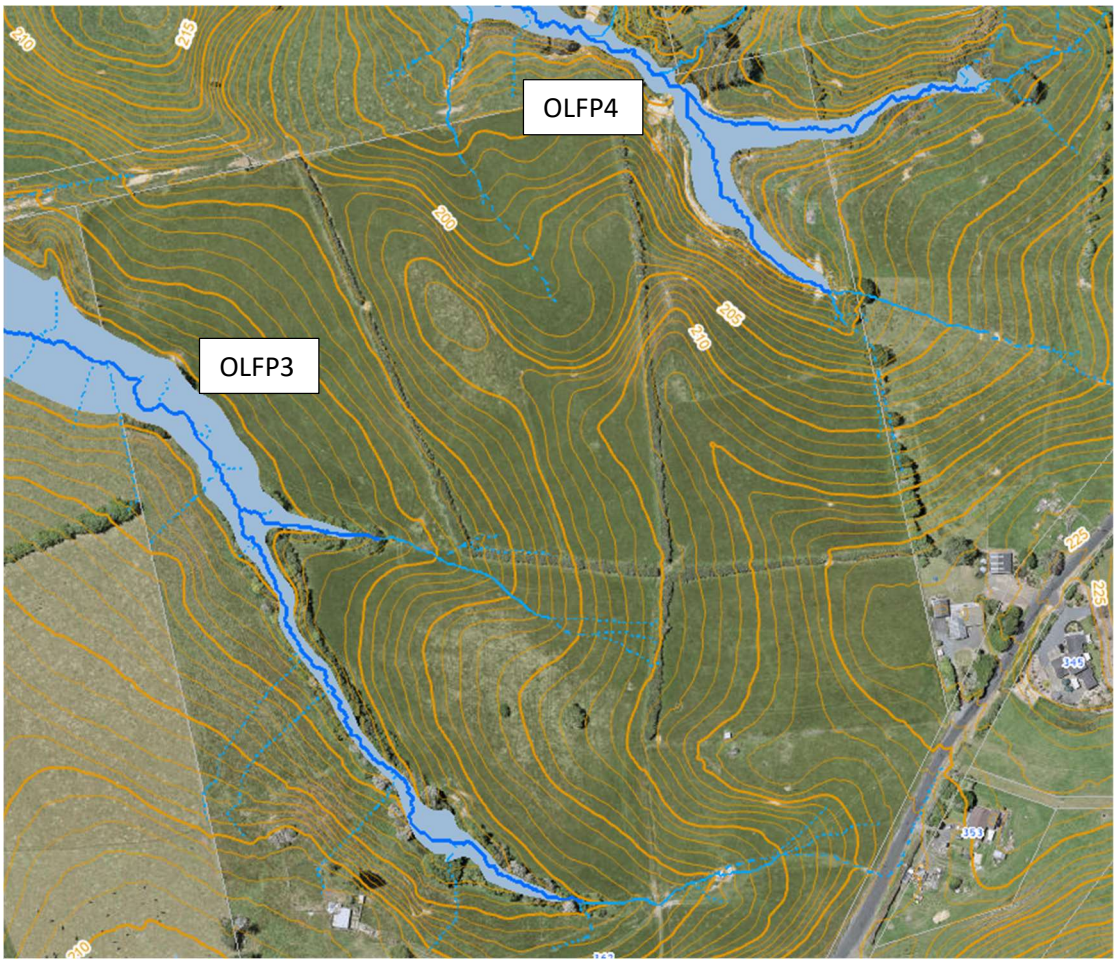

Figure 4: Geomaps OLFP and Floodplain Data for the Northern Area of the Site

These OLFPs will generally be maintained as part of the Fill development.

1.4.5 Groundwater

The site is not located in a High Use Aquifer Management Area.

2.0 MANAGEMENT

2.1 SITE CONTACTS

Registered Owner	Scarbro Environmental Ltd
Operator	Scarbro Environmental Ltd

The site is fully managed by Scarbro Environmental Ltd (SEL).

2.1.1 Project Manager

Project Manager: Liam Scarborough
Mobile: 021 213 5992
Email: Liam@scarbrocivil.co.nz

2.1.2 Site Supervisor

Supervisor: TBC
Mobile:
Email:

2.1.3 Fill Validation Sampling and Testing

Fraser Thomas Limited	Sean Finnigan, Director – Environmental, CEnvP-SC (Suitably Qualified and Experienced Professional (SQEP) - Contaminated Land)
Phone	09 278 7078 / 021 0223 0510
Email	sfinnigan@ftl.co.nz

2.1.4 Noise Testing

Name	Daniel Winter
Phone	09 308 9015; 021 118 8488
Email	daniel@stylesgroup.co.nz

2.2 RESOURCE CONSENTS

This site is subject to the following resource consents, valid for 10 years, from the date on which the first of these consents commence.

Table 1: SEL Resource Consents (to complete once consents granted)

Consent	Purpose	Comments
Land use – managed fill	Establishment and operation of a fill facility of 790,000m^3 operating over a maximum 10 year period	
Land use - earthworks	790,000m^3 of fill earthworks over 11ha area.	
Discharge of contaminants	To allow for managed fill to receive soils with metal concentrations up to volcanic background levels.	
Bore permit	New groundwater bore and/or pump, to replace existing bore	
OLFP piping in part	Piping part of minor OLFP3 under new haul road using new culvert	

2.3 RIGHT OF ACCESS

Right of access is strictly controlled and limited to SEL and authorised sub-contractors, as well as authorised consultants (e.g. Fraser Thomas Ltd) and Council staff or agents involved in site monitoring in accordance with the consent conditions. No unauthorised vehicles are allowed entry. The gate will be locked outside working hours.

Hence, there are several forms of direct (locked gate) and indirect (informal supervision by Fill Facility staff) deterrents to entry. Consequently, access to the site by unapproved users during normal operating hours and outside these hours is highly unlikely.

2.4 OPERATING HOURS

The operating hours for the site are:

- Monday to Friday: 7:00am to 6:00pm;
- Saturday: 7:00am to 1:00pm
- Sundays and public holidays: Closed

The Fill Facility will not operate outside these hours.

2.5 STAFF

On-site staffing (excluding truck drivers passing through the site) will involve up to 4 people, including a Site Supervisor, machinery/plant operators and general labour. Some staff may undertake more than one of these roles, according to workload demand.

The Site Supervisor is an experienced senior staff member who is in charge on site at all times and present during work hours. This person will control site operations including monitoring incoming and exiting loads, fill acceptability, fill quality, dust, erosion and sediment control, gate control, vehicle movements, record keeping, etc.

2.6 OFFICE AND AMENITIES

The site office is located in the existing dwelling located in the centre of the site.

The site office will utilise the existing dwelling water supply and wastewater disposal system. These comprise a roof rainwater harvesting water supply and on-site wastewater septic tank treatment and disposal system. The existing systems are considered suitable for this purpose without requiring any changes.

Stormwater will also be harvested from roofs for use in the wheel wash facility, and from the sediment retention ponds for use for dust control.

A new groundwater bore will be installed east of the residential dwelling on the site to provide a supplementary water supply source for dust control and the wheel wash facility. This water supply should be suitable for this purpose. Imported water (by commercial tanker) may be used in an extreme drought.

Staff parking is provided on-site by the staff office. All staff, visitors and contractors will be directed to park on-site and no parking in the road corridor is permitted.

The local power supply reticulation to the site is off Jones Road and extends to the site office and wheel washing area.

A proprietary wheel wash facility with water recycling will be used for washing outgoing vehicle wheels.

Site access is via the new accessway off Hunua Road. This comprises a two-lane gravelled road. Access to the site will be controlled by a secure gate that is opened manually.

Additional internal access roads run to each sub-stage of the Fill Facility, with turning circle areas created for each stage of filling. All internal access roads are 6m wide. Passing bays will be installed at relevant locations, if necessary. Specific design details will be provided for accessway works for each stage of filling, as they will be designed and constructed progressively as part of filling operations.

2.7 PLANT AND MACHINERY

Machinery for the fill operation comprises the following:

- One 21T excavator
- One Sheepsfoot Compactor (18T)
- One Caterpillar D6 Bulldozer or equivalent.
- One 6m^3 Water cart

Works will be undertaken using a 21-tonne excavator, a bulldozer (Caterpillar D6 or similar) and an 18-tonne sheepsfoot roller.

The plant and machinery will be operated in the following manner to mitigate potential noise effects on neighbouring properties:

- The number of truck movements associated with the fill facility on Monday – Friday must not exceed 96 trucks per day (192 movements) and 20 trucks (40 movements) in one hour.
- The number of truck movements associated with the fill facility on Saturday must not exceed 50 trucks per day (100 movements) and 20 trucks (40 movements) in one hour.
- Tonal reverse alarms must not be used on any plant or machinery on site. Broadband reverse alarms may be fitted if reverse alarms are required.
- An earth bund shall be constructed 25m off the eastern property boundary to provide acoustic screening to 332 Jones Road and 353 Jones Road to the east of the site. The bund shall be at least 160m long and 3m high (refer Figure 5 for approximate location).
- Additional screening bunds are proposed adjacent to the Southern Fill area to screen houses to the east of the site, prior to filling the Southern Fill area.
- Bulldozers and vibratory compaction rollers must not be operated within 90m of the property boundary of 332 Jones Road or within 80m of the property boundary of 353 Jones Road during the operation of the fill facility. These restrictions do not apply when the plant is being used for construction works.

2.8 TRAINING

Management and staff have the required knowledge to run and operate the proposed fill site. New staff will be trained in accordance with this FMP, including in filling operations and waste acceptance

protocols. Form 5 in Appendix B has been prepared as a simple checklist for on-site staff to check that contamination reports have been completed and provided where appropriate.

2.9 HEALTH AND SAFETY

The site is run under SEL's Standard Health and Safety Policy, which is available on request through SEL.

Each truck entering the site and all plant/machinery will carry first aid equipment in the case of an accident. The drivers and operators of these vehicles also carry mobile phones for contacting emergency services, if needed, while additional telephone access is also available in the near vicinity at neighbouring houses.

2.10 UNEXPECTED/ACCIDENTAL DISCOVERY PROTOCOLS

2.10.1 At-Source Contamination Protocol

The following applies to unexpected contamination discoveries at source sites for fill to be taken to the Jones Rd facility.

If unexpected potential or actual contaminated material, including fill or organics at depth, refuse (paper, plastic, metal, glass, etc.), visually stained or odorous soil, asbestos containing material (ACM), or other hazardous materials that appear to be contaminated is identified at individual fill source sites during excavation works, then work should cease within a 5m radius of that area and a SQEP (customer or SEL) will then visit the site to determine the nature and extent of the potentially contaminated soil. This is likely to involve the collection of soil samples and laboratory analysis, followed by disposal off-site to an appropriate disposal facility, other than the SEL Fill Facility.

2.10.2 Fill Facility Protocol

Should any unexpected contamination, archaeological material, artefacts or remains, actual or potential koiwi, a protected NZ object or a lava cave greater than 1m in diameter become exposed during Fill facility construction (i.e. topsoil stripping and any undercutting of unsuitable materials), the contractor is required to cease works immediately in the vicinity of the discovery (leaving at least a 20m buffer), secure the area and to notify Council, Heritage New Zealand Pouhere Taonga, Police (if human remains are found) and the kaitiaki and kaumatua of the relevant mana whenua (if koiwi, archaeology or artefacts of Māori origin are found).

Works in the vicinity of the find must not recommence until the steps set out above and in condition 50 of the resource consent have been followed and Council has advised that the works can recommence.

2.10.3 Iwi Contacts

Lucie Rutherford

RMA Technical Officer
Ngāti Tamaoho Trust
Ph: 09 930 7823 Mob: 0211708543
rmaofficer@tamaoho.maori.nz
128 Hingaia Road, Karaka,
PO Box 2721652, Papakura
Auckland 2244

2.10.4 Heritage New Zealand Contacts

Bev Parslow
Auckland Regional Archaeologist
Heritage New Zealand (Pouhere Taonga)
Premier Building, 2 Durham Lane East
Private Box 105 291, Auckland 1143
Ph (09) 307 9920; DDI: (09) 307 9923; Mobile 0272 921445
ArchaeologistMN@heritage.org.nz

2.11 NOTIFICATION

2.11.1 Pre-Start Meetings

Pre-start meetings will be held on site no less than 5 days before:

i) Commencing road works, and
ii) Commencing earthworks.

These meetings will include the relevant Auckland Council and/or Auckland Transport officers and all necessary documentation.

2.11.2 Notification of Neighbours

A letter drop to properties within 250m of the site will be undertaken at least 10 days prior to:

i) Commencing any works on site, and
ii) Commencing filling on site.

This letter drop will inform neighbours about the commencement of the works and will contain the contact details of the Site Supervisor outlined in Section 2.1.2 above.

2.12 FINISHED CONTOUR AND LANDSCAPE PLAN

Within six months of the commencement of the filling operation, SEL shall submit to the Council for certification, a finished contour and landscape concept plan (LCP) showing the finished contours and landscape treatment for the completed Fill Facility. The LCP shall be prepared by a civil engineer in conjunction with a landscape architect or suitably qualified professional. The LCP will address conditions XX-XX of the resource consent.

2.13 RIPARIAN PLANTING AND FENCING PLAN

Riparian planting and fencing is to be undertaken in accordance with the separate associated plan prepared by Boffa Miskell Ltd and associated consent conditions XX-XX.

3.0 DESIGN AND OPERATION

3.1 OVERVIEW

The Fill Facility comprises two separate areas in the northern and southern portions of the site, as shown on drawing 33250/003.

The northern fill area comprises a mounded landform over an area of 9ha and of approximate volume 720,000m^3. The northern fill area has an average 8m depth of fill and a maximum fill depth of 24m.

The existing water bore within the northern fill area will be decommissioned and removed prior to the commencement of filling in this area.

The southern area comprises a mounded landform over an area of 2ha and of volume 70,000m^3. The Southern Fill Area has an average 3.5m depth of fill and a maximum fill depth of 10m.

Filling is dependent on market conditions. These conditions fluctuate and so does the supply of suitable material. When there is a suitable and ready supply, the hours of operation and limits on truck movements then serve to regulate the rate of filling.

Erosion and sediment control will be provided by three sediment ponds (two for the northern fill area and one for the southern fill area), each sized to cater for their respective catchment areas, with treated runoff discharged to the watercourses through the site from these ponds.

The extent of the Fill Facility area, proposed fill depths, proposed final contours and selective cross-sections are shown on drawings 33250/110-114.

The remainder of the site that is not in use for filling operations, or where filling has been completed, will remain in pasture and be grazed, if conditions allow.

3.2 FILL FACILITY STAGING

The Fill Facility will be staged so that a maximum 2ha area is being filled at any one time. Preliminary staging plans are shown on drawing 33250/130. The staging is indicative only, as the filling will be an iterative process, with filling areas changing as required to build the final platforms. The staging plan may also need to be changed as site constraints and operational constraints are realised during either detailed design or once SEL has established on site.

3.3 SIGNAGE

Appropriate signage will be put up at the site entrance prior to the commencement of filling. As a minimum, this will include the name and contact details of the Fill Facility operator.

3.4 FENCING

The site is already fully fenced along all boundaries. Additional internal fencing will be installed as required to facilitate filling operations and prevent grazing animals entering any active filling areas.

3.5 SCREENING BUNDS

An earth bund shall be constructed to provide acoustic screening to 332 Jones Road and 353 Jones Road to the east of the site. The bund shall be at least 160m long, 3m high and constructed 20-25m in from the eastern site boundary. Figure 5 illustrates the location of the proposed earth bund.

Additional screening bunds are proposed adjacent to the Southern Fill area to screen houses to the east of the site (380 and 1821 Hunua Rd), prior to filling the Southern Fill area, as shown in Figure 6.

The screening bunds are not required when the excavator is being used at distance of:

- 45m of the site boundary with 332 Jones Road
- 40m of the site boundary with 353 Jones Road

This is in addition to the Styles Group Noise Effects report recommended condition (6) in the report:

- Bulldozers and vibratory compaction rollers must not be operated within 90m of the property boundary of 332 Jones Road or within 80m of the property boundary of 353 Jones Road during the operation of the Fill facility. These restrictions do not apply when the plant is being used for construction works.

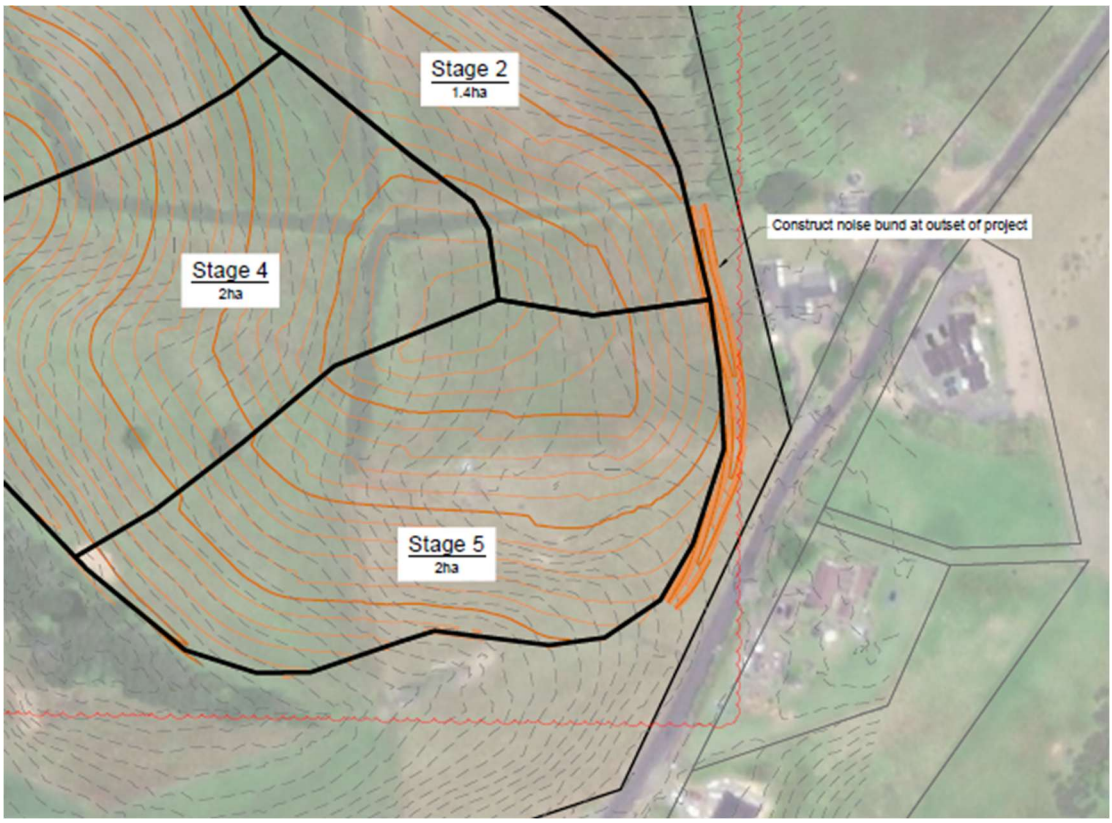

Figure 5: Noise bund location plan (from FTL drawing 33250/130) – northern fill area

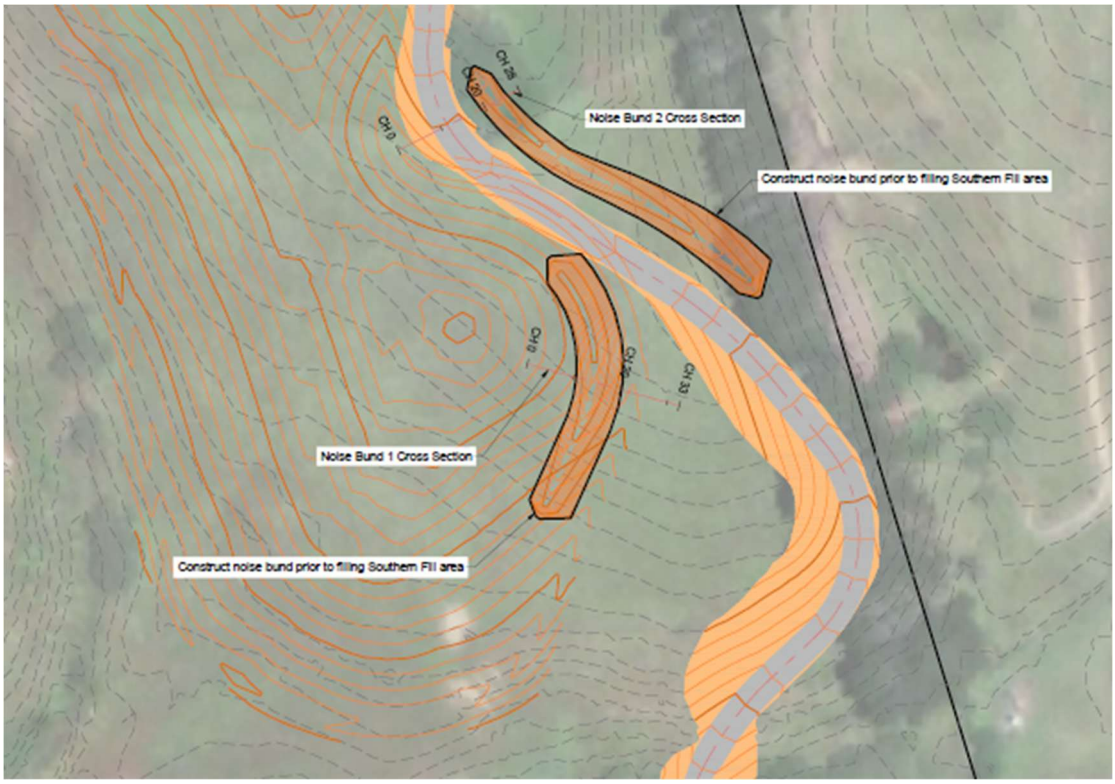

Figure 6: Noise bund location plan (from FTL drawing 33250/130) – southern fill area

3.6 TRAFFIC MANAGEMENT

Truck numbers on Monday to Friday inclusive will not exceed:

- 96 loaded trucks and 192 total truck movements per day.
- 20 loaded trucks and 40 total truck movements per hour.

On Saturday, the number of truck movements associated with the Fill Facility will not exceed 50 trucks per day (100 movements) and 20 trucks (40 movements) in one hour.

Trucks will comprise both rigid trucks and truck and trailer units. A speed limit of 20km/h will be imposed within the fill site.

A vehicle register (Form 2 in Appendix B) will be kept by the Fill Operator, as detailed in section 3.9 of this FMP. This will be made available to Council on request of the Team Leader – Southern Monitoring, Auckland Council.

A separate Traffic Management Plan has been prepared as required by resource consent.

3.7 BORE WATER SUPPLY

Groundwater from a new bore located on the site shall be used to provide water for the filling operation, primarily for vehicle wheel washing use and dust control. Bore water abstraction shall comply with the AUP E7 A15 permitted activity requirements, comprising the following:

- Total daily abstraction not to exceed 20m^3, when average over any consecutive 5 day period.
- Maximum annual abstraction not to exceed 5,000m^3, based on the period from 1 June of any year to 31 May of the following year.

4 x 30m^3 above ground water storage tanks will be used to store groundwater and maintained full, subject to compliance with the maximum 5 day averaged daily abstraction rate. Additional tanks may be added, based on operational experience.

As groundwater usage is anticipated to be relatively low, groundwater abstraction volumes will be measured using a simple method, involving a “run hours” meter, with pump flows being calibrated prior to commencing water abstraction and at 5 yearly intervals, so as to enable run hours to be converted to flows. Calibration verification records shall be provided to Council within 20 working days of measurement.

Water meter readings shall be recorded weekly at the same time each week, even if no water is being taken during any period. The meter shall be read either before pumping starts or at the end of pumping for a day. Water use, water meter reading and date shall be entered into Council’s Water Use Data Management System (or any replacement database advised to SEL by Council in writing) every 15th day of March, June, September and December. The web address for this system is:

http://aklc.hydrotel.co.nz/hydrotel/cgi-bin/WudmsWebServer.cgi

Access requires uses of the following database access information:
SEL customer number: TO ADD
SEL password: TO ADD

An on-line manual explaining how to enter and submit water readings to Council is available at the web address specified above.

The bore pump will be serviced regularly in accordance with supplier recommendations.

3.8 FILL IMPLEMENTATION

3.8.1 Proposed Sequencing

The expected sequence of filling and associated activities is summarised below. These works will be constructed on a stage-by-stage basis, apart from the sediment controls which will cover the entire northern and southern fill areas:

- Install all silt/sediment control structures required for the total filling area, including sediment retention ponds, diversion drains/bunds, as appropriate. Obtain approval from the relevant Authorities prior to commencing works.
- Install temporary access roads and turning areas.
- Remove vegetation as required.
- Strip topsoil and unsuitable materials and stockpile (separately) on designated stockpile areas/bunds.
- Install underfill strip drains and connect into perimeter swale.
- Undertake filling and compaction.
- Re-spread topsoil across filled areas.
- Mulch, hydroseed or grass all batters and exposed surfaces, as appropriate. Mulching or hydroseeding will be done on intermediate exposed surfaces, while grassing will be done on completed filling areas. This will be done progressively as different areas are completed.
- Decommission erosion and sediment control devices once exposed surfaces are fully stabilised.

Further details on specific items from the above list are given in the following sections as required.

3.8.2 Erosion and Sediment Control

Erosion and sediment control measures will be installed prior to any vegetation clearance and earthworks activities on the site. The proposed erosion and sediment control measures cater for the entire fill area (2.0ha for each of the northern sediment ponds and 1.2ha for the southern fill area including sediment pond and drains) and hence provide a high degree of flexibility for development of the Fill Facility.

3.8.3 Access Roading

A new site entrance and access road will be constructed off Hunua Rd. This will include the construction of a new bridge near the new site entrance.

Temporary stabilised access roading, tip heads and vehicle turning circle areas will then be constructed for each stage of filling. These roads will be progressively extended and/or relocated for each stage of filling, as required.

3.8.4 Vegetation Clearance, Tree Removal and Trimming

Vegetation clearance will be undertaken in stages, in accordance with the progression of filling. It will comprise the removal of existing grass/weeds, as the first step of preparing a new area for filling.

An existing Rimu tree within the northern fill footprint will be removed prior to filling in this area. In addition, various hedges in the northern fill area will be removed prior to filling in this area.

In the southern central portion of the site, a ~400m^2 area of native vegetation has been identified. This native vegetation must be retained if possible, due to the size and age of the native trees (12m tall, >50 years old). Furthermore, it has been identified as a bird nesting area.

3.8.5 Existing Rubbish/Fill Relocation and/or Removal

A Preliminary Site Investigation (PSI) found the there are no contamination issues that need to be managed during fill development.

However, if material, including fill or organics at depth, refuse (paper, plastic, metal, glass, etc.), visually stained or odorous soil, fibrous asbestos/asbestos fines or asbestos containing material (ACM), or other hazardous materials that appear to be contaminated is identified during fill development, the procedures set out in Section 2.10.2 of this FMP will be followed.

3.8.6 Topsoil and Unsuitables Stripping and Stockpiling

Topsoil and any unsuitables will be stripped from each stage and temporarily stockpiled within part of the Fill Area, not currently being used for filling or where filling has been completed.

All temporary topsoil stockpiles remaining in place for more than one month will either be mulched, hydroseeded or grassed.

3.8.7 Underfill Drainage

In accordance with the recommendations of the FTL geotechnical report, underfill (strip) drains will be constructed prior to the placement of fill to prevent groundwater from reaching elevated levels within the fill material during extreme transient events. These subsoil drains shall comprise 900mm wide by 300mm deep rectangular strip drains, with TNZ F/2 drainage aggregate fully wrapped in Bidim A29 geotextile or similar. The locations of the proposed underfill strip drains are shown on the appended Fraser Thomas Ltd drawings 33250/350 and 33250/351. Underfill drains may also be installed in other locations, if required, following stripping of topsoil.

3.8.8 Fill Placement and Compaction

Fill operations will be undertaken in small stages within the Fill Facility footprint. Filling should be undertaken in accordance with the recommendations of the geotechnical report. New fill areas will be opened only as required. Filling will then commence with fill material brought to the site in trucks, deposited in the relevant area and re-positioned as necessary by excavator and/or bulldozer.

The fill will be shaped to direct runoff to dirty water diversion drains and fill material track rolled by site machinery for compaction to similar levels to the existing situation, in accordance with the fill specification in the geotechnical report. Drying or wetting of imported fill material should be undertaken, as required to achieve this. This level of compaction is appropriate, as the fill area will revert to productive pastoral farming on the completion of filling.

The outer faces of the fill will be at a maximum 1V:3H (33.3%). 4m wide benches will be installed at intervals of 10m vertical fill height for fill stability purposes. Any filling proposed on existing slopes greater than 11° (1V:5H) should be placed and compacted on benches cut into the slopes at the site.

Table 2: Fill Placement and Compaction Requirements

Air Voids	Undrained Shear Strength (kPa)
Average ≤ 12% Maximum ≤ 14%	Average ≥ 80kPa Minimum ≥ 50kPa

Actual fill locations will vary depending on considerations such as the type of material received, the season and the filling situation for the overall site. Some areas may be opened and closed several times during the life of the operation, and temporary and permanent stabilisation measures will therefore both be used.

3.8.9 Final Landform and Site Restoration

The finished Northern Fill Area profile will have a top height of 58mRL and gently sloping (i.e. natural rolling pasture) with a predominantly south-easterly aspect towards the central gully.

The finished Southern Fill Area profile will have a top height of 44mRL and gently sloping with a predominantly northerly aspect towards the central and southern watercourses.

Final completion works will involve shaping the surface to ensure a natural, non-engineered appearance and for it to merge naturally with the surrounding land. The sediment ponds and associated perimeter drainage will be decommissioned on completion of filling and site stabilisation, with site flow to be generally dispersed as sheet flow in accordance with existing overland flow patterns.

Final cover will comprise a minimum 200mm thickness of topsoil, sourced from the temporary topsoil stockpiles on-site. If necessary, additional topsoil will be imported to achieve the desired coverage.

All topsoil used for the final contouring of the site will be certified cleanfill in line with the AUP:OP guidelines.

Completed areas will be progressively stabilised with a protective surface cover (i.e. grass) to stabilise them against soil erosion and return the area to productive pastoral farming.

The final contouring of each stage of the filling operation will be undertaken in accordance with the certified Landscape Concept Plan (refer section 2.12 of this FMP).

3.9 DOCUMENTATION, RECORD KEEPING AND MONITORING

This Fill Facility represents a small-medium scale site, in terms of capacity and expected vehicle movements, compared with other similar fill sites in the Auckland region. It is also a private filling operation. Hence, it is proposed to have an electronic log book in the site office for drivers to fill out on entry. There will not be a weighbridge. Instead incoming trucks will be full upon arrival, and estimated volumes will be made based on vehicle capacity.

The record accuracy is the responsibility of the site supervisor (one of the 4 staff on-site). The Supervisor will keep the following records:

- **Vehicle register** (Form 2 in Appendix B), containing a daily record of all incoming vehicles, noting contractor / driver name, order number, the date and time, vehicle registration, vehicle type / size, source (site address), type(s) of fill material and approximate volume, name and signature confirming the details, and any other comments.
- An annual drone and topo survey of the area and volume filled each calendar year. The results of a topographic survey of the volume of material will be provided to the Team Leader – Southern Monitoring, Auckland Council.
- A **dust assessment log** (Form 3 in Appendix B) recording the time, location and results of daily visual assessments of dust.
- A **complaints register** (Form 4 in Appendix B) for any complaints received, including the action taken to resolve the complaint. This will include any noise and air quality complaints, including the following information
  - record the date, time, location and nature of the complaint;
  - name, phone number and address of the complainant (unless the complainant refuses to supply these details);
  - weather conditions at the time of the incident including approximate wind speed and direction;
  - the approximate number of truck movements along the internal road at the time of the incident; and
  - any remedial actions taken.

  Details of any complaints received shall be provided to the Team Leader – Southern Monitoring, Auckland Council within one working day of receipt of the complaint(s)
- **Fill declaration, waste acceptance and monitoring records** – Form 1 in Appendix A and Form 5 in Appendix B.
- **Pond Flocculant dosing records – chemical and/or organic**

- **Other verification, compliance and monitoring records** as set out in Section 4 of this FMP.

Corresponding record sheets are included in Appendix B. These records will be provided to Council as part of annual reporting (see section 5) or on request. They will also be available for inspection at the site office on request, or electronic or scanned copies can be provided to Council on request.

3.10 GEOTECHNICAL COMPLETION REPORT

A suitably qualified geotechnical engineering professional is to provide certification for each stage of works that they have been completed in accordance with this FMP, the recommendations in the FTL Geotechnical Investigation Report, and the resource consent conditions (specifically conditions XX-XX). This certification, in the form of a Geotechnical Completion Report, is to be provided to the Team Leader – Southern Monitoring, Auckland Council, following completion of the filling operation within each Stage of the Fill Facility.

3.11 NOISE MONITORING

Noise monitoring will be undertaken on three separate occasions during the first year of filling operations. Monitoring shall comprise a minimum of three 15-minute samples and be carried out in accordance with the provisions of NZS 6801:2008 "Acoustics – Measurement of Environmental Sound" and NZS 6802:2008 "Acoustics – Environmental Noise". Monitoring reports shall be submitted to the Team Leader – Southern Monitoring, Auckland Council within 10 working days of the monitoring being undertaken. The monitoring and reporting shall address the requirements set out in condition XX of the resource consent.

4.0 FILL CLASSIFICATION

It is proposed that the Fill Facility will accept "cleanfill", based on background concentrations for heavy metals in volcanic soils in the Auckland region, as well as some common organic contaminants. This means it will be a Managed Fill under both the WasteMINZ Disposal to Land Guidelines and the AUP:OP guidelines. The rationale for this is fully explained in the engineering report submitted with the resource consent application.

4.1 WASTEMINZ TECHNICAL GUIDELINES FOR DISPOSAL TO LAND

The WasteMINZ Technical Guidelines for Disposal to Land were originally released in 2016 and updated in August 2018 and again in September 2023. They classify landfills in New Zealand into five categories. Based on this classification system, the proposed cleanfill would be classified as a Class 3 Landfill, namely a **Managed Fill.**

A **Class 3 Managed Fill** accepts materials that comprise predominantly clean fill and controlled fill, which may also contain material with contaminant concentrations in excess of controlled fill limits. Site specific management controls are required to manage discharges to the environment. The fill material will not contain putrescible or reactive materials that when deposited may result in generation of leachate or landfill gas.

4.2 AUP:OP

Under the AUP:OP, the proposed facility would also be classified as a **Managed Fill**. This is defined in the AUP:OP as:

"*Facility where managed fill material is accepted for deposit."*

Where Managed Fill Materials are defined as:

"• *contaminated soil and other contaminated materials;*
• *natural materials such as clay, gravel, sand, soil, rock; or*
• *inert manufactured materials such as concrete and brick: and*

That does not contain:

- *hazardous substances or materials (such as municipal solid waste) likely to create leachate by means of biological breakdown;*
- *products or materials derived from hazardous waste treatment stabilisation or disposal practices;*
- *materials such as medical and veterinary waste, asbestos, or radioactive substances;*
- *combustible components; or*
- *more than 2 per cent by volume of incidental or attached biodegradable materials (e.g. vegetation)."*

4.3 PROPOSED FILL ACCEPTANCE APPROACH

The fill material will come from excess spoil from civil works undertaken by the Scarborough Group. This fill material will be subject to a rigorous pre-acceptance process for compliance with the appropriate Fill Facility thresholds, as described later in this report.

The waste acceptance criteria for this Fill facility are based on accepting cleanfill materials, as defined in the WasteMINZ Disposal to Land Guidelines for Class 5 (Cleanfill) facilities, but also allowing for it to accept fill materials from areas with volcanic soils that may contain higher background levels of heavy metals than allowed under the WasteMINZ Class 5 (Cleanfill) WAC. This is the only reason the Fill facility is considered to be a Managed Fill. This is considered a pragmatic decision, given the facility is located in an area with non-volcanic soils, as this is unlikely to result in any adverse human health or environmental effects.

The WasteMINZ Land Disposal Guidelines contain further guidance on waste acceptance criteria for cleanfills (Class 5 landfills). These guidelines acknowledge that the presence of synthetic organic compounds, which are not naturally occurring and resulting from man-made sources, are common in natural soils. These synthetic organic compounds can be present at detectable concentrations that do not represent a risk to the receiving environment or influence the potential future land use. It advises that waste acceptance criteria should therefore provide for the presence of these compounds up to concentrations where there is negligible potential for significant adverse effects as a result of direct contact with the waste or fill material or groundwater in contact with the waste or fill material.

Auckland Council has accepted the WasteMINZ Class 5 Clean Fill waste acceptance criteria as being applicable to clean fills in the region, based on advice received by email from them in relation to this application on 12 March 2025.

Asbestos is another contaminant that is common in the urban environment. From experience at other fill facility operations and as discussed at the pre-application meeting, Fill Facilities occasionally struggle with meeting the no trace asbestos allowed threshold (i.e. no detects from a presence/absence test). Measures will be put in place to avoid this, including:

- Not accepting any fill material containing asbestos, based on at source testing;
- If any potentially asbestos containing materials are observed when incoming loads are unloaded at the tipping face, these loads will be reloaded and then quarantined, with any confirmed asbestos containing loads being rejected based on laboratory testing and removed from site and disposed of to an approved disposal facility licensed to accept asbestos containing materials.
- If verification sampling at the Fill site itself does detect trace asbestos, this must be <0.001% w/w and/or <0.01 %ACM to be kept on-site or otherwise must be removed from site and disposed of to an appropriate landfill facility. It is anticipated this will be a rare event (i.e. say <5% of verification samples) rather than routine and any such incident would be discussed with Auckland Council to determine appropriate management/disposal requirements.

Furthermore, relevant material from the WasteMINZ Disposal to Land Guidelines relating to Class 5 landfills has been incorporated into the Fill facility design and operation in this application, where appropriate.

5.0 WASTE ACCEPTANCE

These above criteria have been used to help form the proposed Waste Acceptance Criteria (WAC) as listed in Table 3 below.

Table 3: Fill Acceptance Criteria

Parameter	Maximum Acceptable Concentration – Jones Rd Fill Facility (mg/kg)
Heavy Metals	
Arsenic (As)	12
Boron (B)	260
Cadmium (Cd)	0.65
Chromium (Cr)	125
Copper (Cu)	90
Lead (Pb)	65
Mercury (Hg)	0.45
Nickel (Ni)	320
Zinc (Zn)	1,160
Organic Contaminants	
TPH C_7-C_9	110
TPH C_{10}-C_{14}	58
Benzene	0.0054
Ethylbenzene	1.1

Toluene	1.0
Total xylene	0.61
Benzo(a)pyrene (equivalent)	2 (interim)
Total DDT	0.7
Asbestos	No detect (P/A or SQ test) at source; No detect (P/A) in Pond Sediment

Notes:

1. Background levels from "Background Concentrations of Inorganic Elements in Soils from the Auckland Region", Appendix 2 – volcanic range, upper limit. Auckland Regional Council 2001.
2. Acceptance limits for organic contaminants from WasteMINZ Land Disposal Guidelines for Class 5 Landfills (Cleanfills) September 2023, Rev 3.1 – Appendix H.
3. Asbestos containing fill is prohibited, as noted above.
4. BTEX species comprise benzene, toluene, ethylbenzene and total xylene.

5.1 PROHIBITED WASTES

No materials outside of this definition will be accepted at this site. This includes demolition materials (other than the 5% inert manufactured material allowance listed above), materials from HAIL (Hazardous Activities and Industries List) sites without sampling laboratory results that indicate that soil contaminant levels are within the fill acceptance criteria, organic matter (other than the attached biodegradable 2% volume threshold allowance and the organic contaminants upper concentration limits listed above) and any fill material containing asbestos (based on presence/absence testing for asbestos) including fibrous asbestos, asbestos fines and asbestos containing materials (based on at source testing).

5.2 WASTE ACCEPTANCE PROCEDURES

The Fill Facility waste acceptance procedures are generally based on the WasteMINZ Land Disposal Guidelines for Class 5 Landfills (Cleanfills), amended to include pond sediment sampling due to allowing the acceptance of specified low-level organic compounds at the Fill Facility (see Table 3).

5.2.1 Waste Disposal Application

The Jones Road Fill Facility is a private facility and will only be used by SEL Ltd vehicles or approved contractor vehicles.

A waste disposal application will be completed for each site from which fill material is to be collected, or where there is a change in the nature of the fill being disposed of from a particular site. The application should identify the following:

- Source(s) of the fill material – disposer name (customer), address and contact details, and land use (residential, commercial, etc.);
- Nature and mass/volume of fill material;

- Confirmation that the source of the fill material has not been contaminated by current or historical land use activities (i.e. Ministry for the Environment's Hazardous Activities and Industries List (HAIL).
- Confirmation that the source of the fill material does not include any airports, military/air force sites and fire stations; materials from sites that has been subject to fires, particularly where fire fighting foams may have been used; and materials from the locations of on-site wastewater treatment and disposal fields. This is to avoid importing potential PFAS contaminated soils to the Fill facility.
- Copies of any soils testing results completed for the source of the waste.
- Copies of any resource consents authorising the earthworks/land disturbance held for the source of waste.
- Confirmation that the soil meets the Fill Facility waste acceptance criteria.

These waste acceptance forms and supporting information will be reviewed using the following classification system in Table 4.

Table 4: Fill Waste Classification Acceptance System

Fill Volume	From HAIL site	From site with horticultural land use history	From Auckland Central Business District (CBD)	Minimum Acceptance Documentation
<200m^3	No	No	No	Fill Declaration confirming non-HAIL history
>200m^3	No	No	No	Fill Declaration and letter/report signed by SQEP
Any	Yes	Yes	Yes	Fill Declaration and Detailed Site Investigation (DSI) Report

Note: For "Any" category, only one of three items listed needs to apply for DSI to be required – i.e. HAIL or ex-horticultural or Auckland CBD.

The onus will be on the customer to provide sufficient information, including testing results, where necessary, in accordance with the classification system in Table 4, that complies with Ministry for the Environment Contaminated Land Management Guidelines and has been reviewed and approved by a SQEP in Contaminated Land in accordance with the NESCS.

All HAIL related reports will not be accepted unless signed off by a SQEP employed by the customer.

The waste disposal application is referred to as a Fill Declaration (refer Appendix B, Form 1). It must be signed by the customer to confirm the material is acceptable fill and accepting liability for any costs incurred in removing/remediating contaminated soil should the material not meet waste acceptance criteria when testing is undertaken.

5.2.2 Waste Application Review and Acceptance

The application form and supporting information will be submitted to the Jones Road Fill Facility. The information will be reviewed by a SQEP engaged by SEL to determine whether the waste material complies with SEL site's WAC. Where insufficient information is provided, the waste characterisation is considered inadequate, or there are other issues, these will be discussed with the customer, with it being their responsibility to arrange for relevant additional testing to be undertaken.

The parameters tested for will be relevant to the source site's history and likely HAIL activities it has been exposed to.

Applications for any larger batches of fill material (i.e. >200m^3) require pre-approval and will be scrutinised more closely (using Table 4 classification system), including SQEP review and assessment provided by the party supplying the fill, in order to ensure it meets the Fill Facility WAC. Where necessary, SEL's SQEP may undertake additional desktop study, site inspection and/or soil sampling using an XRF and/or lab testing (depending on the contaminants of concern) to confirm the waste materials are suitable for disposal at the fill facility. The associated costs would then be passed on to the customer.

Once the waste application information has been reviewed, approved and signed off by the SEL SQEP, the waste materials will be accepted for transport to the Fill Facility site. Fill material not meeting the WAC will be rejected.

Acceptance of a waste disposal application provides the basis of a waste acceptance agreement. The agreement should also contain details of sanctions available to the operator should the customer breach the terms of the agreement. It should also set out the rights of the SEL Fill operator to inspect, challenge, sample, test and, if necessary, reject any waste brought to the Fill site for disposal.

All HAIL reports and signoff from the SEL SQEP will be retained by the consent holder (see Form 5 in Appendix B).

5.2.3 Waste Reception and Disposal at Fill Site

On arrival at the Fill site, office staff will:

- Review the waste application form and waste acceptance agreement (saved to SEL file server Jones Rd Fill Facility database).
- Undertake random visual load checks at a frequency of 1 in 25 loads to confirm waste acceptance. This frequency may be adjusted based on the type and quantity of material being received and findings from previous inspections.
- Undertake random soil sample collection at a frequency of 1 sample per 500m^3. These samples will be collected from incoming trucks by the site office. Samples will be collected from 3 locations without each random truck load, then composited into 1 sample for laboratory analysis. Samples

will be analysed for the analytes as listed on the site WAC as well as presence/absence asbestos in soil.

- All truck loads that are subject to the random sample collection will deposit their load on an impervious surface (i.e. tarpaulin) at the tipping head, where the material will be confined by barrier fencing until results have been received and WAC compliance can be confirmed.
- Any material that is identified as non-compliant will be handled in accordance with the procedures outlined in section 5.2.5 below.
- Record the volume of fill entering the site by keeping a record of the trucks entering the site (truck number plate and the corresponding known truck volumes). Refer Vehicle Register (Form 2 in Appendix B).

Supervision of the disposal facility will be undertaken at the working face and be maintained at all times when wastes are received at the Fill Facility to identify any inappropriate loads, or portions of loads, before they are covered and incorporated into the fill mass.

Any fill material which fails any visual and olfactory checks undertaken in accordance with this FMP upon arrival at the site, shall be rejected immediately.

5.2.4 Filled Area Verification Sampling

Verification sampling should be undertaken from deposited waste across the active Fill Area (tip face and compacted fill) based on the number of truck loads, this being the most practical method of working out when sampling is required. For every 250 truck & trailer units, the SEL SQEP should collect a single sample for analysis at an IANZ accredited laboratory. This equates to approximately one sample per 4,500m^3 over the lifetime of the filling operation.

SEL will advise their SQEP of the total number of truck and trailer units bringing fill to the site on a monthly basis. The SQEP will then work out the required number of samples based on the one sample/250 T&T loads criteria and these samples will then be collected during the next site visit. This will ensure that the samples tested represent the entire waste mass. It will also make sampling more efficient, as sampling will be undertaken more regularly and hence involve shallower hand auguring to ensure the collected samples reflect the waste mass, compared with six monthly or longer frequency sampling.

This sampling will be undertaken by the SEL SQEP to provide a level of independence from the Fill operator. The samples are to be dispatched to a suitable accredited laboratory by the SEL SQEP, with copies of the relevant Chain of Custody documentation retained for records. The verification samples shall be tested for the contaminants listed in the WAC and asbestos presence/absence, except that only 1/3 of the samples shall be tested for BTEX species, as these are less common contaminants.
A brief report will be issued to the Fill operator once sampling results have been received and analysed, certifying that the material complies with the Fill WAC or otherwise. This report shall include:

- interpretation of the results against the Fill Facility WAC,
- results of the corresponding random testing of the incoming loads, and

- any relevant AUP permitted activity soil acceptance criteria or other environmental guidelines.

These results shall be included in the annual report, except where there are any non-compliances, the associated results shall be discussed with Council within 4 weeks of the verification testing. If the verification sampling results identify significant WAC exceedances, the SQEP shall include a Contingency Plan outlining proposed measures to be undertaken to prevent further WAC exceedances, and to reduce or mitigate any adverse effects on the receiving environment from the existing exceedances.

5.2.5 Non-compliant Fill Handling Procedures (Waste Rejection)

Relevant rejection procedures set out in this FMP shall be implemented in case of any incoming loads of fill that are either suspected of containing non-complying fill or found to contain non-complying fill. These procedures shall include, but not be limited to:

- All suspicious loads identified prior to placement, and any subsequent loads from the same site, shall be stockpiled in an isolated quarantine area located within the sediment pond catchment area, taped off and clearly identified as being temporarily unsuitable for filling, until either accepted for filling or removed from the site.
- All suspicious loads identified part way through placement shall be identified using hazard tape and shall be temporarily isolated from the filling operation, until either accepted for filling or removed from the site.
- Any identified non-complying fill, or suspicious material that has been quarantined for further sampling and analysis shall be covered with anchored tarpaulins, if left overnight and when rain is anticipated during the working day.
- All quarantined loads shall be sampled at a rate of one sample per truckload (3 locations per truck, composited into one sample) to confirm contamination levels. Only those loads that are confirmed by laboratory analysis to meet the WAC shall be accepted for filling.
- If the laboratory analysis confirms that the material is non-complying fill, then that material must be loaded onto trucks, covered, and disposed of at a site consented to accept such waste.

The consent holder shall keep a record of any load of fill that is rejected, including relevant laboratory analysis reports, the details of the source site(s), and the account holder, the date and time of arrival, approximate volume of the load, and the final destination of the material removed.

5.3 SURFACE WATER AND SEDIMENT SAMPLING

5.3.1 Surface Water Sampling

Surface water sampling shall routinely be undertaken from the following sampling locations at six monthly intervals, covering winter and summer months and when :

- Sediment retention pond (SRP) discharges: Any of the three SRPs that are currently in use;
- Stormwater discharge points off-site:
    - Northern Fill: NW2 and NE3;
    - Southern Fill: S2.

Field measurements will be undertaken for pH, temperature, dissolved oxygen, electrical conductivity and turbidity. Visual observations will be made at the same time for water colour, clarity, odour, and any separate phase hydrocarbons.

Lab testing shall be undertaken for pH, conductivity, total suspended solids, dissolved heavy metals (arsenic, cadmium, chromium, copper, lead, nickel and zinc), soluble aluminium (only if PAC used as flocculant) and Total petroleum hydrocarbons (TPHs)

The sampling results will be compared against trigger levels based on GD05 (for pH and clarity), the Australian and New Zealand Environment Conservation Council (ANZECC) guidelines for the protection of 80% of freshwater species, and the MfE Petroleum Environmental Guidelines for TPHs.

Table 5: Stormwater Sampling Proposed Trigger Levels

Parameter	Trigger Level
pH	5.5-8.5
Clarity	>100mm
Total Suspended Solids (g/m^3)	100[c]
Dissolved Arsenic	0.36[a]
Dissolved Cadmium	0.0008
Dissolved Chromium	0.04
Dissolved Copper	0.0025
Dissolved Lead	0.0094
Dissolved Mercury	0.0054
Dissolved Nickel	0.017
Dissolved Zinc	0.031
Soluble Aluminium	0.150 if pH > 6.5; no reliable value for pH <6.5
Total petroleum hydrocarbons (TPHs)	15[b]

Notes:

[a] Based on Arsenic (III) this being the more toxic arsenic species

[b] From MfE (1998) Environmental Guidelines for Water Discharges from Petroleum Industry Sites in New Zealand, section 8.2

[c] This is Waikato region surface waters requirement; included here in lieu of Auckland region specific guideline. It's appropriateness can be checked from the baseline testing currently being undertaken.

If trigger levels are exceeded in the SRPs for any parameters at any location, an additional water sample shall be collected from the relevant location and tested for the parameters that were exceeded.

SRPs: Should the second SRP sample exceed any trigger levels, the following actions shall be undertaken:

- Temporarily lift the pond decants to retain all stormwater within the affected SRP(s) and check pH/clarity to determine if additional flocculation is required;
- Check the stormwater collection system (dirty water drains and groundwater subsoil drains) draining to the affected SRP using field measurements of water flows and visual observations

to trace the source, supplemented by lab testing if elevated field readings are obtained or visual observations pick up something abnormal;

- Inspect and review all erosion and sediment control measures to determine appropriate remedial measures required (e.g. desilting SRPs).
- If the problem can not be resolved, and the SRP level is approaching the primary spillway and more rain is forecast, then some of the pond contents may be pumped out and disposed of by a licensed liquid waste contractor.

Discharge point samples: If the downstream stormwater discharge point sample(s) exceed the trigger level for any parameters and this is not due to elevated contaminant levels in SRP discharges, then the downstream exceedance could potentially be due to other internal sources, such as the haul road, wheel wash, or possibly upgradient off-site sources. These internal sources will be checked for any issues (e.g. wheel wash sump needs desilting) using field measurements and visual observations (supplemented by lab sampling where necessary as above) and appropriate remedial measures taken. If the source is traced to upgradient, off-site sources, it is not the responsibility of the Fill Operator to deal with these issues and hence no further action would be taken, other than recording these findings in reporting to Council.

5.3.2 Pond Sediment Sampling

Sediment samples from the base of the sediment ponds shall be collected at six monthly intervals and tested for the parameters listed below. The samples shall be collected by a SQEP after a period of at least five days without any flocculant dosing. The samples shall be collected at the same time as associated surface water samples, with the surface water samples being collected first (to avoid potential cross-contamination effects).

Results of the pond sediment testing will be compared to the Interim Sediment Quality Guidelines (ISQG – low trigger value) in Table 3.5.1 (Recommended sediment quality guidelines) of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2019 website update), which are listed below for clarity.

Table 6: Sediment Sampling Proposed Trigger Levels

Parameter	ISQG Trigger Levels (mg/kg except where stated otherwise)
Arsenic	20
Cadmium	1.5
Chromium	80
Copper	65
Lead	50
Mercury	0.15
Nickel	21
Zinc	200
Total TPHs	280
Total DDT	1.2
Asbestos	Absent

If the pond sediment samples are found to contain concentrations of any contaminants above the trigger values set out in the ISQG, then an investigation shall be undertaken by the SQEP to determine whether the exceedance is attributable to the filling operation and if so, identify any potential associated adverse effects on surface water quality, by comparison with corresponding surface water sampling results, and appropriate mitigation measures to address this. These may include:

- Not accepting fill material from particular sources with a higher risk of containing the contaminant(s) of concern;
- Reviewing the effectiveness of waste acceptance procedures;
- Removal of sediment from the SRPs to reduce the potential for contaminant release into pond stormwater discharges.

When pond sediment removal is required, the sediment sampling results shall be used to determine whether the sediment can be disposed of within the managed fill facility, or must be disposed of offsite to an appropriate facility.

If any sediment is to be disposed of on-site, it will likely need to be mixed with other drier materials to achieve a suitable moisture content, or allowed to dry within a suitably bunded area or using dewatering tubes or other suitable technology.

The sediment testing results shall be provided to the Council as part of the annual report, except where there is a compliance issue, in which case, they would be provided to Council for review within four (4) weeks of sampling.

5.4 RECORDS, VERIFICATION AND MONITORING

Detailed records shall be maintained by the Fill Operator to provide confirmation that the requirements of this CMP are being followed. These will be kept in electronic format on a database and stored in the Cloud, enabling these records to be accessed by staff at the Fill site office. Records kept on this database will include:

- All waste application forms and supporting information (e.g. copies of site investigation and validation reports);
- All waste acceptance agreements;
- Inspection and testing records;
- Fill random load checking data;
- Fill received volume records;
- Random load sampling results;
- Sub-stage verification sampling results.
- Completed forms, logs, checklists, testing results, registers.

Copies of these records can be provided to Council inspecting officers on request.

Annual reporting shall be provided to Auckland Council summarising the operation over the preceding 12 months, addressing the above matters, as set out in Section 5.6 of this FMP.

5.5 WASTE ACCEPTANCE POLICY TRAINING

Management and staff are trained in the above waste acceptance policy and have the basic knowledge and experience to recognise acceptable and unacceptable fill materials. They have been instructed:

- To visually assess the quality of material at source prior to loading and, if necessary, get a representative sample(s) analysed for contaminants before transporting to site.
- Not to transport any unsuitable materials to site, including any soil with visible discoloration, staining or odour.
- To remove any such materials from site, if found buried in an incoming load or detected on-site and dispose of them to an appropriate facility (e.g. approved landfill).

5.6 UNEXPECTED CONTAMINATION

If any previously unidentified potential or actual contamination is discovered during works on site, the Unexpected Accidental Discovery Protocols for Contamination (Section 2.10.2) should be followed.

Within 24 hours of the unexpected contamination discovery, Team Leader – Southern Monitoring, AC is to be notified by email to monitoring@aucklandcouncil.govt.nz;

Works in the affected area of the site will not recommence until expressly authorised by the SQEP, with the Team Leader – Southern Monitoring notified of this within 24 hours.

Subject to the approval of the Fraser Thomas SQEP, the affected material may be relocated to a secure stockpile, located on an impervious surface within the sediment pond catchment area and covered with tarpaulins or similar impervious cover, or alternatively placed in covered bins, while waiting for the laboratory results.

5.7 ANNUAL REPORTING

An annual compliance report (ACR) shall be provided to Council for review covering the period 1 July to 30 June, by 30 July (to allow time for reporting), each year that the filling operation is being undertaken. The ACR shall be prepared by a SQEP in accordance with Contaminated Land Management Guidelines, No.1, Ministry for the Environment (revised 2011). The ACR should contain sufficient detail to address the following matters:

(a) a summary of the works undertaken, including a plan indicating filled areas and the volume of fill imported onto site, and a statement confirming whether the importation of fill has been completed in accordance with the FMP.

(b) a summary of soil testing undertaken, including pre-approval, random validation and independent verification testing, together with relevant laboratory transcripts, and interpretation of the results against the WAC.

(c) a summary of sediment testing undertaken, with the interpretation of the analytical results in the context of all environmental guidelines that the SQEP considers relevant.

(d) details of any material removed (rejected) off site, if applicable, including relevant disposal dockets (if available).

(e) details regarding any incidental spills, complaints and/or breaches of the procedures set out in the revised FMP required by condition 51 and the conditions of this consent, if applicable

(f) details on the proposed filling operation and associated earthworks over the next 12 months.

5.8 SITE CLOSURE REPORT

Within three (3) months of completing or abandoning the filling operation, a Site Closure Report (SCR) shall be provided to Council for review. The SCR shall be prepared by a SQEP in accordance with Contaminated Land Management Guidelines, No.1, Ministry for the Environment (revised 2011). The SCR should contain sufficient detail to address the following matters:

(a) a summary of the works undertaken, including a surveyed plan of the finished level, the volume of fill imported onto site, details on the final topsoil cover layer, and a statement confirming whether the works have been undertaken in accordance with this FMP.

(b) a summary of fill testing undertaken, including pre-approval testing at the source sites, random validation testing at the site, and independent verification testing, including the interpretation of the results against the WAC.

(c) the total volume of rejected fill material removed off site, including alternative-disposal dockets (if available).

(d) details of any required ongoing monitoring and management of the topsoil cover over the fill area.

6.0 EROSION AND SEDIMENT CONTROL PLAN

Required erosion and sediment control measures will be installed and maintained during the works in accordance with best practice, utilising recommended measures set out in GD05 (Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region 2016/005) (June 2016). This section comprises an Erosion and Sediment Control Plan (ESCP) and summarises the proposed erosion and sediment control measures for the site during filling, covering both the northern and southern fill areas. The erosion and sediment control measures are shown on Drawings 33250/121, 33250/161, 33250/180, 33250/181 & 33250/251.

Each year, by no later than 10 working days prior to 30 September, SEL will submit to Council for certification either a letter confirming that works are to proceed in accordance with the approved Stage ESCP, or a revised ESCP shall be provided instead, should changes to it be required due to

changes in filling areas or sequencing, changes in current industry practice, issues with the current sediment controls or observed effects on the receiving environment. This will include any changes to the final design, location and sequencing of the erosion and sediment control measures. The revised ESCP will not be implemented on site until certified by Council.

Prior to commencement of filling on the Northern and Southern Fill Areas, SE shall submit to Council a certificate signed by a suitably qualified person, which certifies that the erosion and sediment controls relating to that Fill Area have been constructed in accordance with the certified ESCP for that Fill Area. The certification shall address but not be limited to the matters specified in condition 33 of the resource consent.

6.1 OBJECTIVES

Appropriate erosion and sediment control measures will be provided on-site in accordance with the AUP: OP and GD05. The main rationale and objectives of these measures are:

- To minimize disturbance to areas where erosion may occur, including steeper slopes and exposed land.
- To stage filling to minimize the area worked on at any one time, to minimize the extent and duration of temporary topsoil stockpiles and to ensure revegetation can occur in a staged manner, so as to reduce the risk of silt/sediment running off the site and entering the downstream receiving environment.
- To ensure exposed areas are stabilized as soon as practicable by sowing, hydroseeding or mulching to prevent erosion.
- To install perimeter controls such as diversion drains and retention ponds to prevent sediment leaving the site.
- To maintain the gravel surface of the access road to minimize the potential for silt/sediment to be tracked off site.
- To provide guidance in case of unforeseen events including poor weather.
- To ensure all control measures are inspected and repaired after storm events.
- To ensure that the site is rehabilitated prior to the removal of sediment control measures.
- To mitigate dust emissions from the site during earthworks so as not to adversely affect any nearby properties.
- To minimize potential environmental effects.

6.2 EROSION AND SEDIMENT CONTROL MEASURES

6.2.1 General

The northern and southern fill areas have been designed to form their own sub-catchments during filling. The proposed sediment ponds will capture all runoff from these sub-catchments and discharge treated runoff to the existing watercourses running through the site.

Sediment will be removed primarily by the sediment retention ponds. These ponds and the associated diversion drains/bunds have been designed in accordance with GD05 and best practice.

All installation works for the proposed stormwater system including any minor earthworks and trenching will be undertaken in accordance with relevant Council requirements for erosion prevention and sediment control.

6.2.2 Progressive Stabilisation

Earthworks shall be progressively stabilised against erosion at all stages of the filling activities so that no more than 2ha is exposed at any one time.

6.2.3 Wheel Washing

A proprietary wheel wash, with water recycling, will be installed on-site along the haul road, near the site office to clean the wheels of exiting vehicles, prior to exiting the site. Washwater will be recycled, with any lost water (estimated to be 25L/vehicle) collected in the haul road table drain and conveyed to the swale for treatment.

6.2.4 Drains (up to 10% gradient)

All drainage channels will be constructed in accordance with GD05. They will have earthen bunds on the downgradient side, and will be sized to take the 5% AEP storm with additional freeboard. The dimensions of the drains are shown on drawing 33250/181 and longitudinal gradients generally in the range of 1-10% as shown on drawings 33250/122 and 162. Any drains in excess of 2% gradient or 1m/s design velocity will be lined to provide for protection against scour/erosion. Drain sizings are based on the most conservative drain gradient for each drain type. Prior to construction, drain sizings may be revised to reflect actual gradients for different drain sections.

6.2.5 Drains (>10% gradient)

Drawings 33250/122 and 162 show that there are some sections of the perimeter dirty water drains that are over 10% in gradient, notably:

- Drain 1 – chainage 0-45m, and chainage 178-196 (63m)
- Drain 2 – chainage 94-134m and chainage 257-296 (52m)
- Drain 3 – chainage 196-246m (50m)
- Drain 4 – chainage 23-81 (58m)
- Drain 5 – chainage 7-123m and chainage 193-275 (198m)

Specific design will be required for these sections of drain to ensure they are adequately lined to provide for scour/erosion protection. If lined open channels are used, drop pits or manholes or other scour/erosion devices will be required at the end of each steep section of drain to reduce velocities and minimize scour/erosion. Consideration will also be given to using pipe drop structures or flumes in some areas. These comprise a temporary pipe structure or constructed flume placed from the top

to bottom of a steep slope. Any pipe drop structures or flumes would be designed in accordance with GD05 or by specific design.

6.2.6 Drop Out Pits

Drop out pits may be used on steeper sections of the site within the dirty water diversion drain to allow heavier sediment particles to drop out before they enter the sediment ponds, reducing the load on the ponds. Drop out pits are approximately 500-1,000mm deep and 1,000mm wide. They are easier to maintain and typically cheaper to desilt than desilting the sediment ponds.

6.2.7 Sediment Retention Ponds

Three sediment retention ponds (SRPs) are proposed, sized for the maximum dirty water catchment expected in each case, including the area of drains and sediment pond area. In reality, the worst-case scenario is considered to be a total catchment area of 2ha. General details of the sediment retention pond are shown in Table 7.

Table 7: Sediment Pond Details

Item	Northern Area Ponds	Southern Area Pond
Catchment Area (ha)	2.0	1.2
Design volume (3% criteria) (m^3)	600	360
Dead storage (m^3)	180	108
Live storage (m^3)	420	252
Freeboard (m)	0.3	0.3
Side slopes	1V:2H	1V:2H
Decants	2 decants with 133 holes each	1 decant with 160 holes
Discharge pipe	150	150
Primary spillway	150mm riser pipe	150mm riser pipe
Secondary spillway	7.8m base width, 1V:3H side slopes, 0.3m depth	7.8m base width, 1V:3H side slopes, 0.3m depth

6.2.8 Chemical Flocculation

During the very early stages of filling, dirty runoff generated from the fill area will contain dissolved and particulate particles deriving from the natural soils on-site. As fill material is brought in, the characteristics of the dirty runoff will change, being increasingly controlled by the nature of the fill being disposed of on-site. In this case the nature of the dirty runoff entering the sediment pond will depend on the type and extent of the exposed soil types for dirty runoff and the extent and ground cover of stabilized/restored or yet to be disturbed areas.

For these reasons, flocculation batch testing will be undertaken of the natural soils on-site to determine if chemical flocculation is needed during the early stages of filling and the required dosing rate. Ongoing monitoring will then determine if any changes are required to the flocculant dosing regimen. Bench testing will be undertaken for PAC (polyaluminium chloride), this being the preferred flocculant of use.

6.2.9 Mulching, Temporary and Permanent Seeding

The primary objective of erosion and sediment control is to minimise the time ground is exposed prior to permanent stabilisation. If delays occur during the works or an intermediate form of stabilisation is required (such as on stockpiles or on fill prior to topsoil placement), mulching, geotextile fabric or hydroseeding may be utilised.

Permanent stabilisation can be achieved via the application of topsoil (150mm minimum), followed by seeding or planting. Permanent stabilisation is designed to permanently stabilise soil on disturbed areas to reduce sediment and runoff to downstream or off-site areas.

Application rates for seeding and mulching shall be as stated in GD05, summarised in Table 8.

Table 8: Typical Seeding, Fertiliser and Mulching Application Rates

Activity	Description	Application Rate
Temporary Seeding	Annual ryegrass	100-250kg/ha
Permanent Seeding	Perennial ryegrass – 70% Fescues/cocksfoot – 20% Clover/lotus – 5% Browntop – 5%	200-400kg/ha
Fertiliser Application	N:P:K (15:10:10)	200-800kg/ha
Maintenance fertiliser	N:P:K (15:10:10) and urea	As required
Mulching	Straw or hay	4,000-6,000kg/ha
	Hydromulch (minimum 80% virgin or recycled wood)	2,200-2,800kg/ha
	Wood chip	10,000-13,000kg/ha

6.2.10 Dust Control Measures

Dust control aims to prevent or reduce the movement of dust from disturbed soil surfaces that may create nuisance, health hazards, traffic safety problems and/or off-site damage and discharge to the environment.

Areas subject to dust generation and movement include open fill areas exposed to wind, stockpiles of materials, bulk materials handling or vehicle movements.

Dust will be controlled at the Fill Facility by measures from the following toolbox:

- Use of water as necessary, primarily to dampen haul roads and tipping head areas, but also for use on any other exposed surfaces identified by the operator, using water sourced from the sediment ponds and from a dedicated storage tank(s) supplied by the proposed on-site bore, depending on water availability in the ponds.
- Maintaining vehicle accessways with sufficient seal or aggregate material.
- Restricting the speed of vehicle movements to no more than 20kph.

- Daily monitoring for wind conditions and dust discharges around the site.
- Minimising the extent of the exposed area at any one time.
- Limiting traffic to established haul roads and minimising travel distances by optimising site layout.
- Minimising tracking of dirt on vehicle wheels onto paved surfaces.
- Minimising drop heights when loading and unloading vehicles.
- Limiting stockpile heights.
- Providing shelter from the wind for stockpiles.
- Consolidating and sealing off loose surface material.
- Progressive mulching and grass establishment, as works are completed in different areas.
- Use of soil binders to form a cohesive membrane or protective crust that reduces windblown dust generation (refer GD05, Section G8.0 for further details) (contingency measure).
- Use of textiles as temporary covers on stockpiles or partially completed batter slopes, or as permanent cover (e.g. vegetation promotion blanket) on completed areas (contingency measure).

6.2.11 Weather Monitoring

Monitoring and predicting rainfall is essential to the performance of erosion and sediment control and civil works in general. All efforts shall be made to predict rainfall and undertake any high-risk work when extended periods of fine weather are predicted. When rainfall is predicted, all efforts shall be made to ensure that the measures mentioned above are in place prior to rainfall and further inspections are made during rainfall and after to ensure that erosion and sediment control measures are functioning as intended.

6.3 MAINTENANCE

The sediment control measures shall be regularly monitored during operations and after any significant rain event. Maintenance of all structures including diversion drains/bunds and sediment ponds shall be carried out throughout the course of site earthworks and restoration.

Maintenance shall be the responsibility of the Operator and shall be carried out at appropriate frequencies ranging from daily to weekly, as appropriate and subsequent to any storm event that produces runoff. The maintenance inspection shall be recorded in accordance with the schedule attached as Appendix C and include, but not be limited to, the following:

- Inspection of the accessway to the site, including:
  - Repair of any accessway damage, including aggregate loss.
  - Inspection of the Hunua Road frontage and removal of any silt/sediment or other accumulated debris manually and/or by machine sweeping.
  - Check surrounding areas for dust and rubbish associated with works.
- Inspection and maintenance of any temporary roading/tracking.
- Inspection of topsoil and unsuitable stockpiling areas, including:
  - Inspecting and repairing silt controls, as necessary.

  - Inspecting the condition of mulch, hydroseed, grass and undertaking any remedial works required.
- Inspection of temporary diversion bunds and channels, including:
  - Checking for scour, sediment build-up, bund/channel integrity and outlet erosion, with remedial measures undertaken as required;
  - Checking for exposed areas and re-hydroseeding, where relevant.
- Inspection of the sediment retention pond, including:
  - Checking embankments, spillways, level spreader and any exposed areas.
  - Checking the sediment depth in the pond forebay and cleaning out as required (generally when 50% full of sediment);
  - Checking the sediment depth and removing sediment once it reaches 20% of the total sediment retention pond volume. To assist in gauging sediment loads, clearly mark the 20% volume height on the decant riser. The sediment shall be moved to a securely isolated and covered area such as the spoil storage area.
  - Checking the operation of the decant arrangement.
  - Checking the clarity of treated runoff to determine if supplementary chemical application is needed.
- Dust monitoring:
  - Monitor dust emissions on a daily basis. In windy, dry conditions, review dust emissions continuously.
  - Reapply water as required to effectively manage levels of dust generation, especially when soil moisture conditions become low during hot and windy conditions.
- Inspection of completed Fill areas including:
  - Checking for exposed areas and re-seeding, mulching or turfing the exposed area;
  - Checking for erosion and regrading the slopes and stabilizing, as necessary.

6.4 DECOMMISSIONING

Sediment control works may only be decommissioned once it has been determined that all Fill areas have been suitably stabilized through consultation and inspection by the Operator and Council. Decommissioning shall be undertaken by light weight equipment or manually where possible and include the following:

- Respread any topsoil stockpiled and decommission the topsoil stockpiling area.
- Backfill any temporary collection drains and/or remove any diversion bunds. Regrade localised areas to ensure overland flow occurs as broad sheet flow and is not channelised. Turf or sow grass seed as appropriate.
- Remove the embankments, bunds and decant structure and fill in the sediment removal ponds. Reinstate the areas by grassing.

6.5 INFORMATION AND MONITORING

It is important that good relations be maintained with Auckland Council (incorporating District and Regional Plan requirements) and potentially affected neighbours throughout the duration of filling.

Immediate neighbours will be informed of the intended scope and duration of filling and kept informed of any changes to filling activity throughout the duration of the works. Refer Section 2.11 above.

All site staff and truck drivers bringing fill to the site shall be made familiar with the Fill Management Plan prior to entering the site.

The Operator should provide feedback regarding the performance of the erosion and sediment control measures and amendments shall be made as required.

No other monitoring is proposed other than what is required in the consent conditions.

7.0 NUISANCE MANAGEMENT

The main potential nuisances from the site are noise, vibration, truck movements, dust and litter.

7.1 NOISE

Noise will be produced by trucks, bulldozer and excavator movements during normal working hours over the duration of filling activity. It will also be produced during construction works for the Fill Facility, which include construction of the proposed drainage and sediment control works, access road construction and earth (noise) bund construction.

Construction noise shall be measured and assessed in accordance with the requirements of New Zealand Standard NZS 6803:1999 "Acoustics – Construction Noise", as required. The noise rating level from construction works shall not exceed 70dB L_{Aeq} and 85dB L_{AFmax}, measured or assessed 1m from any occupied building that contains an activity sensitive to noise located on any other site.

Operations noise shall be measured in accordance with the requirements of New Zealand Standard NZS 6801:2008 "Measurement of Environmental Sound" and assessed in accordance with New Zealand Standard NZS 6802:2008 "Acoustics – Environmental Noise", as required.

Noise rating levels for the filling operation on site, including on-site truck movements, as measured within the notional boundary of adjacent sites not owned by the SE must not exceed the following levels provided in Table 9.

Table 9: Noise Limits

Time Period	Noise Level
7am – 6pm Monday to Friday 8am – 1pm Saturday	55 dB L_{Aeq}
At all other times	45 dN L_{Aeq} 75 dB L_{AFmax}

Work shall not continue on the site if compliance with the above standards is not achieved. The Operator will select appropriate measures from the following toolbox to achieve compliance with these requirements:

(a) Equipment selection:
- Prioritisation of quieter construction methodologies, where appropriate (e.g. rubber tracked equipment over steel tracked equipment).
- Sizing equipment suitably for the proposed task;
- Maintaining equipment and using exhaust silencers and engine covers;
- Avoid tonal reversing or warning alarms (not allowed by consent). Suitable alternatives may include flashing lights, broadband audible alarms or reversing cameras inside vehicles.

(b) General measures:
- Avoid unnecessary noise, such as shouting, the use of horns, loud site radios, rough handling of material and equipment, and banging or shaking excavator buckets;
- Avoid high engine revs through appropriate equipment selection and turn engines off when idling;
- Maintain site accessways to avoid pot holes and corrugations;
- Mitigate track squeal from tracked equipment, such as excavators;
- Locate stationary equipment like the wheel wash away from noise sensitive receivers. Use site buildings and material stores to screen them;
- Orient mobile machinery to maximise the distance between the engine exhaust and the nearest sensitive building façade;
- Utilise noise barriers and enclosures where appropriate;
- Undertake monitoring as appropriate;
- Ensure mobile machinery, such as excavators, is operated carefully and with consideration to avoid the generation of unnecessary vibration.
- No engine braking by truck drivers on Hunua Road around the site entrance to limit any noise effects on local residents.

(c) Noise Barriers and Enclosures:
- Install temporary noise barriers prior to works commencing and maintain these throughout the works;
- Use enclosures where a noise barrier is not sufficient to achieve compliance with the noise limits and it is practicable to do so.

7.2 VIBRATION

Any effects of vibration will be temporary and limited to the duration of filling. The effects of vibration will be limited by following relevant measures from DIN 4150-3:1999 “Structural Vibration – Part 3 Effects of Vibration on Structures”.

7.3 TRUCK MOVEMENTS

Truck numbers will be no greater than 96 loaded trucks/day (192 truck movements/day and 5 loaded trucks/hr and 10 total truck movements/hr. Mitigation measures to minimise potential traffic impacts include the following:

- The entry/exit point is clearly defined and will ensure that the safe and convenient movement of traffic, pedestrians and cyclists is not compromised.
- All fill imported to the site for off-site disposal shall be transported in covered trucks.
- All exiting trucks and truck and trailer units will be required to stop on the water blaster pad near site office for a thorough clean prior to exiting the site.
- The adjoining roading network will be kept clear of mud and debris at all times, through visual checks and periodic sweeping as required.

7.4 DUST CONTROL MEASURES

Dust will be controlled by the measures set out in in Section 6.2.10 of this FMP.

7.5 SMOKE

Burning will be prohibited on-site and hence smoke will not be an issue.

7.6 LITTER

The fill materials deposited on-site are not expected to create any litter problems as they are relatively dense and unlikely to be blown around by the wind. Any minor bits of litter (e.g. plastic) found on-site will be picked up and disposed of appropriately.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This Fill Management Plan has been prepared generally in accordance with the requirements of the WasteMINZ Technical Guidelines for Disposal to Land (September 2023), the AUP:OP cleanfill and managed fill requirements and GD05. Implementation of the measures in this plan, including operation, inspection, maintenance and record keeping requirements, should ensure that the potential negative environmental effects associated with filling activities are avoided or mitigated.

Figures and Drawings

Appendix A

Customer Forms

362 Jones Road, Hunua - Fill Declaration

Form 1EL)

Contractor/Customer: _____

Address (Fill source site): _____

Email Address: _____

Existing Land Use: _____

Phone: _____ Mobile: _____

I have read and understood the waste acceptance criteria attached

Yes ☐ No ☐

I have read and understood the Ministry for the Environment HAIL list attached:

Yes ☐ No ☐

I have read and understood the additional list of source sites that materials will not be accepted from (attached):

Yes ☐ No ☐

Note: It is up to the contractor/customer to supply independent test results or a clearance from a SQEP before the material can be accepted for disposal, if the source of any fill material is from one of the industries on the MfE HAIL list.

Contractor/Customer Declaration:

I accept that should any materials not meet the waste acceptance criteria, _____(contractor/customer) will be liable for all costs associated with removal of the non-complying material to a consented facility and liable for any consequential costs imposed on the Jones Rd Fill Operator.

Position held (Owner, Occupier or Director):_____

Signature:_____

Date: _____

362 Jones Road, Hunua Fill Facility - Waste Acceptance Criteria

Any fill material must satisfy the following waste acceptance criteria:

Cleanfill Material: natural material such as clay, gravel, sand, soil and rock which has been excavated or quarried from areas that are not contaminated with manufactured chemicals or chemical residues as a result of industrial, commercial, mining or agricultural activities. It excludes:

- hazardous substances and material (such as municipal solid waste) likely to create leachate by means of biological breakdown;
- product and materials derived from hazardous waste treatment, stabilisation and disposal practices;
- materials such as medical and veterinary waste, asbestos, and radioactive substances;
- soil and fill material which contain any trace element specified in Table E30.6.1.4.2 at a concentration greater than the background concentration in Auckland soils specified;
- sulfidic ores and soils (see below);
- combustible components;
- more than 5% by volume of inert manufactured materials (e.g. concrete, brick, tiles); and
- more than 2% by volume of attached biodegradable material (e.g. vegetation).

And will comply with the following waste acceptance criteria (WAC) from chemical testing based on:

- AUP: OP upper background range for trace inorganic elements in volcanic soils in the Auckland region.
- WasteMINZ guidelines for Clean fills (Class 5 landfills) for synthetic organic compounds.

Element (total recoverable)	Maximum Acceptance Concentration (mg/kg)
Inorganics	
Arsenic	12
Boron	260
Cadmium	0.65
Chromium	125
Copper	90
Lead	65
Mercury	0.45
Nickel	320
Zinc	1,160
Organics	
TPH C_7-C_9	110
TPH C_{10}-C_{14}	58
Benzene	0.0054
Ethylbenzene	1.1
Toluene	1.0
Total xylene	0.61
Benzo(a)pyrene (equivalent)	2 (interim)
Total DDT	0.7
Asbestos	No detect (P/A or SQ test) at source; <0.001 % AF/FA and <0.01 % ACM (max 5% of verification testing)

Any fill materials must not come from the following sources (to avoid potential for PFAs materials to inadvertently be deposited on-site):

- Airports, military/air force sites and fire stations.
- Sites that has been subject to fires, particularly where fire fighting foams may have been used.
- On-site wastewater treatment and disposal field areas.

Contractor/customer signoff: _____

Date: _____

Appendix B

Record Sheet

FORM 2: 362 Jones Road, Hunua Fill Facility – Vehicle Register

Date & Time	*Vehicle*			*Source site address / Type of fill material*	*Fill Declaration (Form 1) signed*	*Approx. Volume*	*Comments*	*Driver signature*
	Company & driver	*Vehicle type & size*	*Vehicle registration*					

FORM 3: 362 Jones Road, Hunua Fill Facility – Dust Assessment Log

Date & Time	*Location*	*Visual Assessment*	*Action*

FORM 4: 362 Jones Road, Hunua Fill Facility – Complaints Register

Complaint No:		*Location:*	
Date:		*Time:*	
Complainant Name			
Contact Details	*Phone Number*		
	Address		
Complaint			
Weather Conditions (wind speed & direction)			
Internal Truck Movements (at time of incident)			
Action			

FORM 5: 362 Jones Road, Hunua Fill Facility – Source Site Acceptance Checklist

Customer:			*Date:*	
Source Site (address):			*Volume: (m^3)*	
HAIL site? (incl ex-horticulture)	Y / N	*HAIL activity:*		
Auckland CBD site	Y / N	*HAIL activity:*		
Report by SQEP?	Y / N	*SQEP Name:*		
Parameters tested:	Heavy metals:			
	Arsenic	Y / N	*TPHs*	Y / N
	Boron	Y / N	*BTEX*	Y / N
	Cadmium	Y / N	*PAHs (as BAP_{eq})*	Y / N
	Chromium	Y / N	*DDT*	Y / N
	Copper	Y / N	*Asbestos*	Y / N
	Lead	Y / N	*Others (specify):*	
	Mercury	Y / N	_____	Y / N
	Nickel	Y / N	_____	Y / N
	Zinc	Y / N	_____	Y / N
	Other metals	Y / N		
No. of samples tested:			*Results comply? **	Y / N
Accepted as suitable Fill:				
SQEP Approval: *Name:* *Signed:* *Date:*				

Appendix C

Maintenance Schedule

362 Jones Road, Hunua Fill Facility – Maintenance Schedule

Item	Inspection Task	Issues	Action Taken
Main Accessway	Surface damage, including aggregate loss		
	Hunua Rd frontage: silt/sediment/debris		
	Dust/rubbish in adjacent areas		
Internal access and haul roads	Moisture levels appropriate		
	Surface damage, including aggregate loss, scour/erosion, etc.		
	Table drains – scour/erosion		
	Discharge from culvert under Jones Rd – scour/erosion		
Topsoil/unsuitables stockpile areas	Silt controls		
	Cover		
Temporary diversion bunds/ channels	Scour/erosion		
	Sediment buildup		
	Bund/channel integrity		
	Outlet erosion		
	Cover on exposed areas		
Sediment pond	Inlet		
	Level spreader		
	Embankment		
	Forebay (desilt if sediment >50% vol)		
	Pond (desilt if sediment >20% vol)		
	Decant device		
	Primary spillway (MH crest)		
	Emergency spillway		
	Discharge pipe & outlet		

Item	Inspection Task	Issues	Action Taken
	Discharge clarity		
	Flocculation		
	Discharge water quality sampling		
	Sediment sampling		
Stormwater Discharge Points off-site	Water quality sampling		
Completed fill areas	Integrity of cover		
	Scour/erosion		
Water bore	Bore pump		
	Pump Run Hour meter records		
	Pump flow calibration (5yr intervals)		
Access road treatment swale	Inspect 3 monthly and after storm events >20mm in 24h for any damage, scour and/or erosion		
	Check sediment accumulation in swale and remove when it reaches 25% of design depth		
Wheel wash	Maintain wheel wash in accordance with supplier recommendations.		
	Remove accumulated silt/sediment from recycling tank, as required.		