Appendix Twelve – Integrated Land Management Plan

SILVER FERN FARMS - PAREORA

Integrated Land Management Plan

Environmental Management

Environmental systems and procedures for Silver Fern Farms Pareora land-based activities.

Revision History

Date	Details	Amended by
17 Oct 2008	Farm Management Plan created	
24 Apr 2015	Updated Farm Management Plan	Group Environmental
30 Aug 2016	Update to Integrated Land Management Plan. Revisions to include format continual improvement and content update as required.	Group Environmental

Terms Used

Buffer	A defined area from an activity being undertaken and a fixed point between which the activity is restricted.
Centre-Pivot	A self-propelled irrigation system in which a single pipeline supported by a row of mobile towers is suspended 2 to 4 metres above ground and through which wastewater is discharged to land.
Coastal marine area	Area extending seaward of the line of mean high water springs to 12 nautical miles offshore including the foreshore, seabed, coastal water and air space above it.
Cut-and-carry	The term used to describe the resultant harvesting and removal of grass from a paddock following irrigation.
Field tile	In-ground drainage tube network to collect and redirect water flows.
IANZ	International Accreditation New Zealand.
K-Line	A movable sprinkler system of lightweight pipeline sections and pods that are moved manually for successive irrigations. Lateral pipelines are connected to a mainline, and used for small irregular areas not serviced by centre-pivot.
Ocean outfall	Pipeline that discharges wastewater to sea.
PLC	'Programmable logic controller' – runs the automation programmes interfacing with infrastructure and receives / messages automated alarms.
Primary treatment	The physical separation of components from the incoming waste scream, particularly settleable and suspended solids.
SCADA	'Supervisory Control and Data Acquisition' – Computer programme which is the interface between staff and the automation systems. Is controlled by the PLC's.
Soil Testing	A laboratory analysis of soil cores to evaluate the fertility status of the soil, providing a basis for fertiliser, and liming recommendations.
Wastewater	Liquid streams generated from meat processing operations and general wash-down water.
Wastewater treatment plant	Facility where onsite wastewater is treated (primary treatment) prior to being discharged to sea or land.

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1 Introduction

1.1 Environmental Management Plans

Silver Fern Farms next generation Environmental Management Plans are living documents that will be continuously improved upon. These consist of a roadmap to a larger set of documents, company-wide and plant specific, covering what is required to appropriately manage the relevant environmental aspects across Silver Fern Farms operations.

Each section of the Management Plan sets out the context to the subject matter, and a reference to the elements that make up the day-to-day systems and controls that guide what we do.

1.2 Integrated Land Management Plan

The aim of this Integrated Land Management Plan ('Management Plan') is to provide guidance to the systems and controls for the effective management of land-based wastewater irrigation, and related land-based activities, at Silver Fern Farms Pareora operation.

Ensure alignment with other Silver Fern Farms Pareora management plans, and other relevant company requirements, along with compliance with applicable legal requirements.

The systems and procedures referenced within ensure that land-based wastewater irrigation activities are undertaken in accordance with company's environmental objectives, and regulatory approvals (e.g., resource consents and discharge permits).

Silver Fern Farms Pareora intent is to preferentially discharge treated wastewater to land when possible, however there is an ongoing requirement to also discharge into the coastal marine area.

Given this, there is a close alignment between this Management Plan and the 'Coastal Management Plan'. Both activities rely on the wastewater treatment operation to supply treated wastewater as required.

1.3 References

The relevant resource consent for this land-based activity is summarised in Table 1.3 below:

Consent No.	Activity
CRC163704	• To discharge contaminants onto land. • To discharge contaminants onto land where they may enter water. • To discharge contaminants to air from the land application of the effluent.

Table 1.3: *Relevant resource consent.*

The different land areas of the Silver Fern Farms Pareora site are colloquially known as Grants Block / Terrace Block / Village Block / River Block, shown in Figure 1.3 below.

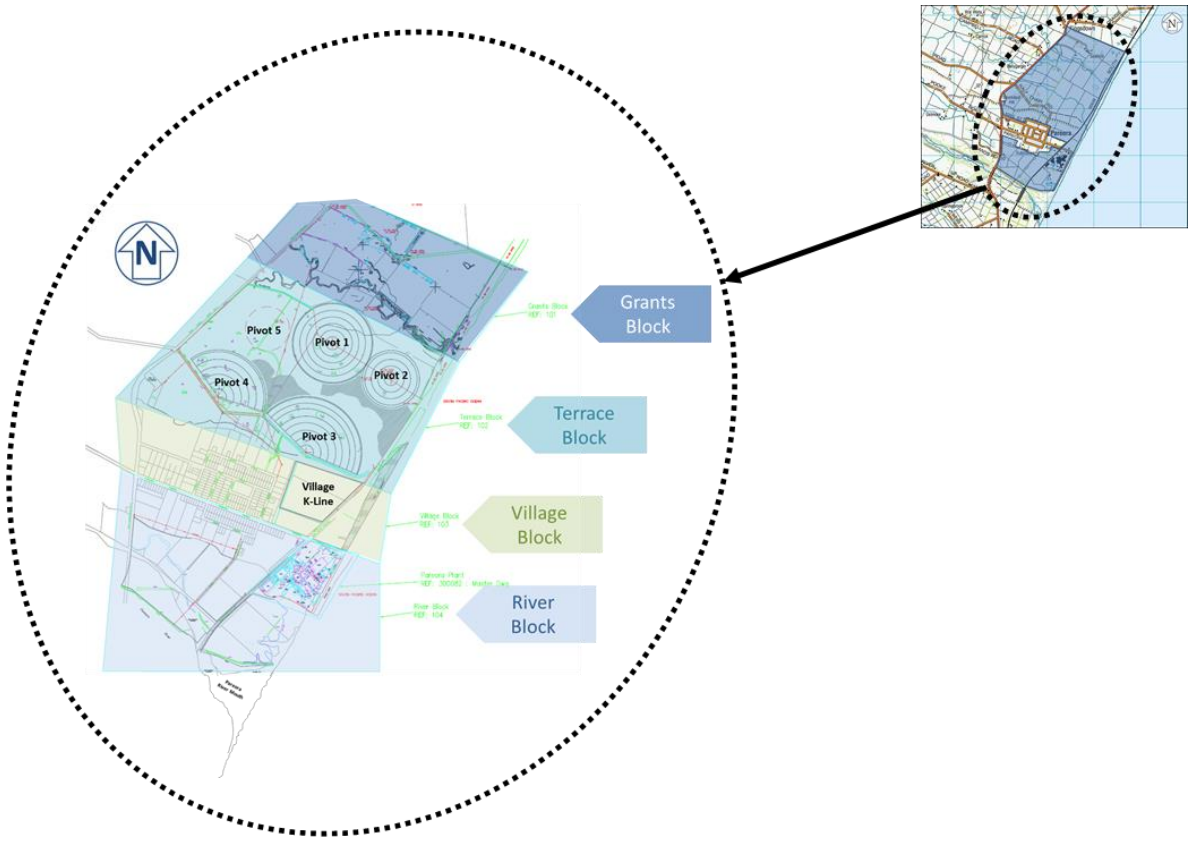

Figure 1.3: *Indicative land areas including irrigation Pivots and K-Line.*

2 Responsibilities

2.1 Organisation Chart

Figure 2.1 below presents a simplified organisation chart. Whilst company–wide standards and guidance is cascaded down to operating sites, and assistance is provided cross-functionally, the roles specific to land-based activities are shaded light blue.

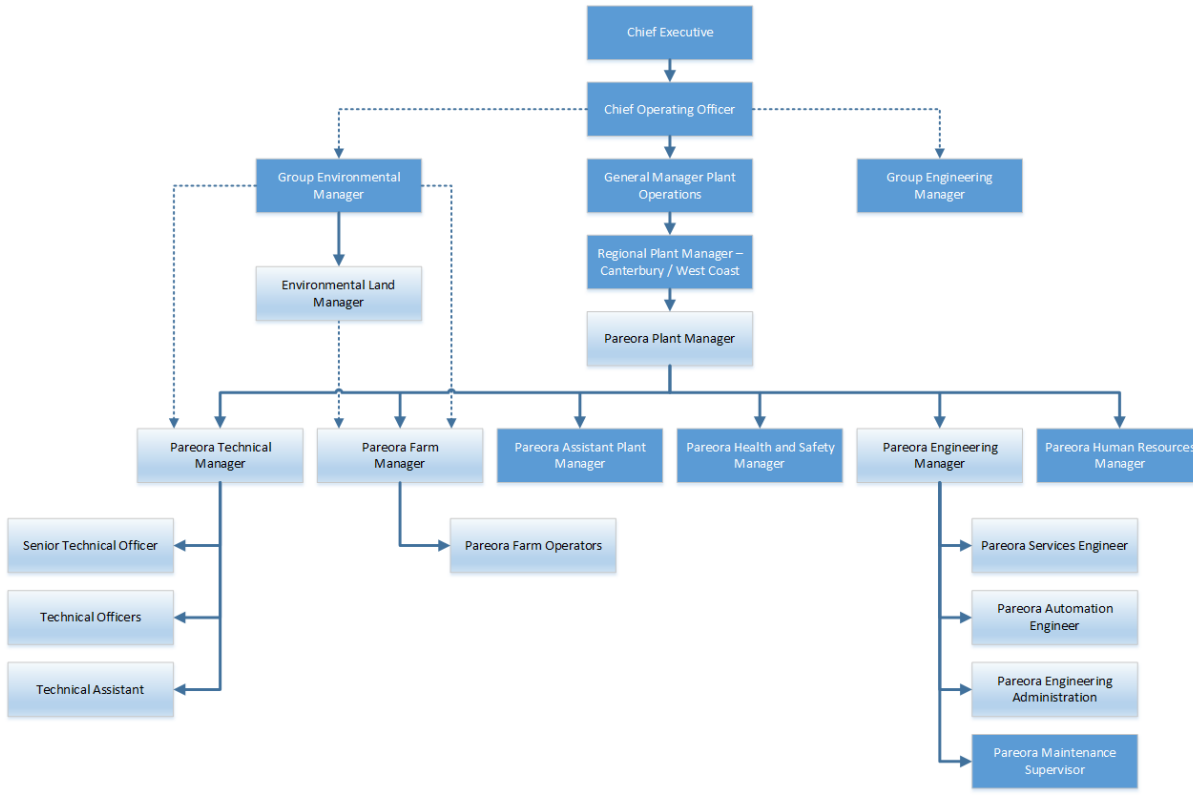

Figure 2.1: *Simplified organisation chart.*

2.2 Site Responsibilities

A summary of site responsibilities is provided in Table 2.2 below.

Plant Manager	• Is responsible and accountable for their site. • Appoints competent line personnel to take responsibility and accountability for environmental performance at site-level; clearly specifying their roles, KPI's, and delegation of responsibilities. • Provides resources to control risks associated with this operation.
Technical Manager	• Communicates to relevant internal and external parties, including annual reporting and circumstances where an incident may have occurred. • Provides the necessary resources to achieve monitoring and reporting objectives.
Environmental Land Manager (Group Environmental)	• Provides guidance and direction to Pareora Farm Manager. • Assists to develop land management budgets, develop and maintain land management systems and procedures.
Senior Technical Officer	• Responsible for the day-to-day oversight of the technical department and monitoring programme.
Technical Officers	• Provides back-up for monitoring and maintenance of data within the Environmental Paddock.
Technical Assistant	• Responsible for carrying out monitoring and maintaining data within the Environmental Paddock.
Engineering Manager	• Has overall responsibility for the day-to-day operation and maintenance of equipment and services. • Provides the necessary resources to achieve operational objectives and maintaining services.
Services Engineer	• Active involvement. • Supervises the day-to-day servicing and maintenance of wastewater services.
Automation Engineer	• Active involvement. • Responsible for maintaining technical and electrical services at the plant.
Engineering Administration	• Responsible for maintaining monitoring and operational data within the Environmental Paddock.
Farm Manager	• Responsible for the day-to-day operation and management of the land-based wastewater disposal, composting operations, coastal discharge and wastewater treatment plant. • Provides the necessary resources to achieve operational objectives. • Selection, approval and engagement of required support contractors.
Farm Operators	• Active involvement. • Responsible for carrying out tasks in managing the operations of the land-based wastewater disposal, composting operations, coastal discharge and wastewater treatment plant. • Responsible for alerting management to all environmental incidents or hazards which may result in an environmental incident, regardless of the nature or scale.
Contractors	• Active involvement. • Responsible for carrying out tasks in accordance with their contractual requirement. • Responsible for alerting management to all environmental incidents or hazards which may result in an environmental incident, regardless of the nature or scale.

Table 2.2: *Summary of site responsibilities.*

3 Health, Safety, Environmental and Training

Health, safety and environmental management is a cornerstone of all Silver Fern Farms operations, with an emphasis on zero harm to people or the environment.

Training awareness is conducted to all employees and contractors as part of induction and onsite awareness sessions.

Training systems are such to ensure that any person(s) performing a task is competent in the activity and aware of hazards, risks, controls and expected behaviours in relation to their workplace activities.

❖ Systems and Controls

These aspects are managed through a series of company policies and procedures; on-site manuals, supporting programmes and task instructions:

Element	**Programme Type**	**Document ID** (if applicable)
ORA Health and Safety Policy	Company Policy	-
Environmental Policy	Company Policy	-
Induction	Company Standard	-
Training Coordinators Manual	Company Guidance	-
Pareora Health and Safety Manual	Site System	-
Site Specific Aspects, e.g., o Site induction o Contractor induction o Isolation tagging o Hot work permit o Confined spaces o Working at heights o Project management	Various*	-

*There are multiple documents that include on-site H+S management – the Site ORA Health and Safety team administer these.

4 Wastewater Treatment System

Wastewater is sourced from across Silver Fern Farms Pareora operations (primary butchery, secondary butchery, animal assembly, composting and areas of potentially contaminated stormwater). Control of 'wet' activities within operational areas has direct influence on volumes and loadings of the wastewater discharged from those areas, this is largely influenced by food safety requirements.

Figure 4 below shows a simplified schematic of the wastewater treatment system.

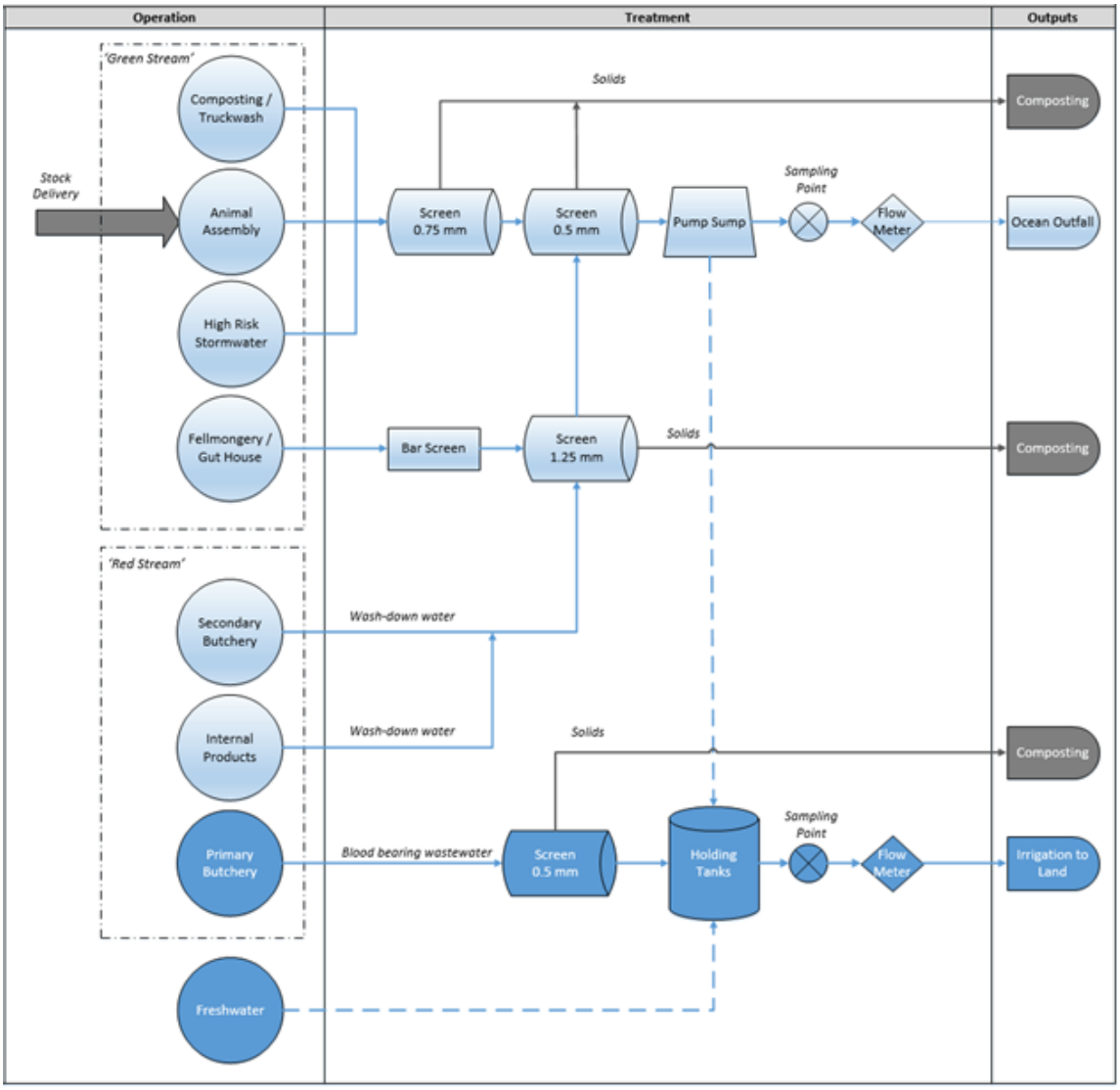

Figure 4: *Simplified schematic of the wastewater treatment system.*

There are two separate waste streams associated with the processing plant operations. These are generally known as:

- Green stream – wastewater from the animal assembly, composting, fellmongery / gut processing and potentially contaminated stormwater.
- Red stream – blood bearing wastewater from the primary butchery, and wash-down water from the secondary butchery and internal products.

Both wastewater streams undergo primary treatment and are mechanically screened for the recovery of solids through a series of reducing sized screens, ending with 0.5mm. Recovered solids are transported and processed to the onsite composting facility.

Following screening, wastewater from the green stream is directed to the pump sump before being discharged to land irrigation and/or to the coastal marine area through the ocean outfall.

Blood bearing wastewater from the primary butchery (red stream) is solely irrigated to land. Wastewater is held within separate holding tanks, which can be diluted with fresh water or wastewater from the green stream, prior to being discharged onto company owned land via spray irrigation.

4.1 Management of Wastewater Volume and Loading

There are a number of activities carried out across operational areas to manage the flow of wastewater and the overall contaminant loadings where possible.

Note, stock type and throughput has a direct bearing on the wastewater volume and loading at any particular time. In addition, food safety cleaning requirements may also have a strong influence over wastewater volumes, e.g., if there is a global food safety issue MPI will automatically defer to increased cleaning requirements to protect NZ supply to those global markets.

❖ **Systems and Controls**

Wastewater volumes and contaminant loadings are managed by:

Element	Programme Type	Document ID (if applicable)
Cleaning – between breaks and shifts	Task Instruction	414B
Containment Procedures	Task Instruction	-
Automatic chemical dosing systems (where possible)	System Design	-
Water flow restriction valves on sterilisers within the primary and secondary butchery	System Design	-
Separation of wastewater streams – 'Red' and 'Green' streams	System Design	-
Preferential discharge to land	System Design	-

4.2 General Operation and Maintenance

Operational and maintenance procedures are in place for individual components of the wastewater treatment plant.

All plant and equipment is operated, maintained, inspected and tested using systems and procedures that manage risk.

Procedures control the operation and maintenance of plant and equipment that have a potential to impact performance. This plant and equipment is maintained, inspected and tested on a regular basis to ensure fit for purpose.

❖ **Systems and Controls**

General operation of the wastewater plant is managed by:

Element	Programme Type	Document ID (if applicable)
Ten Commandments of Effluent Management	Task Instruction	400
Routine inspection and maintenance of equipment as required	Performance Standard Preventative Maintenance Scheduling	-
Annual inspection and maintenance	Preventative Maintenance Scheduling	-
PLC Alert if 'Fault' condition	Alert - SCADA & Cell	
Environs / Solid Waste Disposal	Task Instruction	205

4.2.1 Electrical Control System

The controls for the wastewater treatment plant electrical system are located at the wastewater plant. The system is connected to a central PLC and local computer monitor to display the SCADA.

The switchboard for these systems is located in the same area and allows all components of the wastewater plant to be controlled manually if necessary.

❖ **Systems and Controls**

Electrical control of the wastewater plant is also managed by:

Element	Programme Type	Document ID (if applicable)
Manual Control	System Design	-

4.2.2 Primary Treatment

A number of different screens are used to remove gross solids from the 'green' wastewater stream; 1 x bar screen, and 3 x rotating screens (contrashears).

The 'red' wastewater stream is only irrigated to land, and as such is independently streamed, and screened through a rotating screen (contrashear) at the wastewater plant.

❖ **Systems and Controls**

The primary treatment system is also managed by:

Element	Programme Type	Document ID (if applicable)
Automated spray cleaning – removes fouling on screens	System Design	-
Visual inspection – checking screen display, wear and tear	Preventative Maintenance Scheduling	-
Effluent Solids Disposal (Effluent Outfall)	Task Instruction	210

4.2.3 Pipework and Valves

Regular routine maintenance of the pipelines and valves at the wastewater treatment plant is essential to provide reliable operation.

❖ **Systems and Controls**

To ensure pipelines and valves remain operational, the following is also undertaken:

Element	Programme Type	Document ID (if applicable)
Regular inspection of exposed pipes, fittings and valves	Preventative Maintenance Scheduling	-
Replacing pipes, fittings and valves as needed	Preventative Maintenance Scheduling	-
Painting pipework's with corrosion protection paint	Preventative Maintenance Scheduling	-
PLC alert if valves are in a 'Fault' condition	Alert - SCADA & Cell	-

4.2.4 Pumps

The wastewater treatment plant has three pumps (two operational and one spare).

❖ **Systems and Controls**

Pumps within the wastewater treatment plant are also managed by:

Element	Programme Type	Document ID (if applicable)
Daily visual inspection to monitor pumps operation	Preventative Maintenance Scheduling	-
Annual pump overhaul – replace one pump with spare	Preventative Maintenance Scheduling	-
PLC alert if a pump is in a 'Fault' condition	Alert - SCADA & Cell	-

4.2.5 Pump Sump Operation

Under normal flow conditions, wastewater is pumped from the holding tanks to the land irrigation network.

❖ **Systems and Controls**

Discharges to the land irrigation network are also managed by:

Element	Programme Type	Document ID (if applicable)
Level sensors - automatically turn on / off the pump as required. If the tanks reaches the set low point, discharge stops.	PLC Control	-
PLC – alert if high tank water levels, 'Fault' condition	Alert - SCADA & Cell	-

4.2.6 Flow Meter

A flow meter is located on the pipe between the pump and the irrigation network.

The flow meter provides both instantaneous and totalised flows discharged volumes and is linked back to the sites PLC control and SCADA system.

❖ **Systems and Controls**

The discharge flow meter is also managed by:

Element	Programme Type	Document ID (if applicable)
Discharge volumes	PLC Monitoring	-
Regular inspection of exposed pipes, fittings and valves	Preventative Maintenance Scheduling	-
Five yearly flow meter verification – undertaken by a suitably qualified technician	Preventative Maintenance Scheduling	-

4.2.7 Discharge Scheduling

Discharges to the land-based irrigation areas are determined by irrigation scheduling, principally based on soil moisture conditions. Due to the nature of the underlying soils, land-based irrigation activities across the Silver Fern Farms Pareora irrigation areas are largely moisture constrained rather than nutrient constrained.

Once the ratio for the land discharge has been determined, parameters are programmed into the sites SCADA which opens the flow control valve to the required irrigation network(s) to the set specifications.

❖ **Systems and Controls**

Discharges to the land-based irrigation areas are managed by:

Element	**Programme Type**	**Document ID** (if applicable)
Soil Moisture Monitoring – Manual	Task Instruction	-
Soil Moisture Monitoring - Aquaflex	PLC / SCADA	-

5 Irrigation Network

This section outlines the systems and procedures in place for the management of the land-based irrigation network. The irrigation network, systems and controls were designed specifically for Silver Fern Farms Pareora type of wastewater, standard irrigation systems will simply not operate.

The land-based irrigation network consists of a combination of five Centre-Pivot travelling irrigators, and multiple series of lateral-move K-Line irrigation pods.

Development of the irrigation network has been carried out as a step-wise project based budget.

Both irrigation systems are operated through the PLC-SCADA, with real-time monitoring of soil moisture, wastewater flow, and onsite weather station parameters.

5.1 Centre-Pivot and K-Line

Figure 5.1(a) and 5.1(b) below, show the Centre-Pivot and K-Line irrigators utilised across the Site.

Figure 5.1(a): *Centre-pivot irrigator.*

Figure 5.1(b): *K-line irrigators.*

Whilst every component is designed for peak reliability, performance and efficiency, the irrigators and associated equipment are nevertheless regularly inspected for wear & tear, and overall ongoing integrity.

Wastewater applications to land are managed through a series of on-site procedures, manuals and task instructions that outline corrective actions for pipeline failures, opening and closing pipeline valves, flushing of wastewater main lines, and the operation and maintenance of irrigators.

❖ Systems and Controls

The systems and controls in place to maintain irrigation infrastructure are:

Element	Programme Type	Document ID (if applicable)
Ten Commandments of Effluent Management	Task Instruction	400
Routine inspection and maintenance of equipment	Performance Standard Preventative Maintenance Scheduling	-
Annual inspection and maintenance	Preventative Maintenance Scheduling	-
Quarterly inspection and maintenance	Preventative Maintenance Scheduling	-
PLC Alert if 'Fault' condition	Alert - SCADA & Cell	-
Real Time Monitoring – Moisture, Flow, Wind	SCADA	-
Annual weather station verification – undertaken by qualified professional	Preventative Maintenance Scheduling	-
Manual Control (if required)	System Design	-

5.2 Irrigation Area

Silver Fern Farms Pareora currently utilises around 141 hectares, of the total 397 hectares land holding, for land-based wastewater irrigation, shown below in Table 5.2.

	Irrigation Method	Irrigator	Area (ha)
Terrace Block	Fixed centre-pivot irrigators	Pivot 1	26.6
		Pivot 2	13.72
		Pivot 3	23.18
		Pivot 4	16.09
		Pivot 5	14.8
	Movable K-line irrigation	Hill top K-line	32.6
Village Block	K-line irrigation	Village K-line	14

Table 5.2: *Irrigation method per Block*

Note, the River Flat Block is yet to be developed for irrigation activities. However, groundwater is currently being monitored as a pre-development baseline assessment.

The Terrace Block area is moderately rolling land, with heavier soils and areas of impeded drainage. A field tile drainage system discharges overland to the central gully, and through a three stage subsurface flow gravel-bed wetland (rock filter) established in the base of the gully to remove nutrients and other contaminants in the drainage water.

The Village Block area is flat land between the processing operation and the Terrace Block with similar imperfectly drained heavy soils.

Each area has been developed under adaptive management as a 'cut-and-carry' herbage production system with vegetation harvested around five times each season. No stock grazing is undertaken on the land-based wastewater irrigation areas unless required as a management tool for intermittent pasture control.

Shelter lines are maintained around irrigation areas providing a visual and spray drift buffer to neighbouring properties. These are regularly trimmed to ensure size and shape is maintained.

No artificial fertilisers are applied to the land-based wastewater irrigation areas unless required to correct a nutrient imbalance.

All land-based maintenance / development activities are planned for on a seasonal basis and managed through the annual budget process.

Vegetation harvesting, land development and management is largely carried out through contractual arrangements. Most of the vegetation grown is sold 'standing' through the Agricultural contractor, small amounts are retained on-site for feed as required.

❖ Systems and Controls

The systems and controls in place to maintain the irrigation areas are:

Element	Programme Type	Document ID (if applicable)
Annual Soil Testing	Task Instruction	-
Annual Budget	Group Standard	-
Annual inspection and maintenance	Preventative Maintenance Scheduling	-
Quarterly inspection and maintenance	Preventative Maintenance Scheduling	-
Agricultural Contractor	Contractual	-
Rural Contractor (as required)	Contractual	-
Mixing of Chemicals (agri-)	Task Instruction	600
Chemicals (agri-)	Task Instruction	601
Spill Containment Procedures	Task Instruction	-
Chemical Storage (agri-)	HSNO	-
Environmental Guidance Note – Outdoor Burning	Group Standard	-

6 Environmental Monitoring and Measurement

Assurance of activities is achieved by monitoring, auditing and reviewing performance and systems to identify trends, measure progress, assess compliance and drive continual improvement.

Monitoring forms an integral part of this management plan to ensure performance indicators are being met, and to identify where additional measures may be required. Each of the applicable resource consents include specific monitoring requirements to measure the performance of the management activities and a programme for implementation.

Key monitoring activities are summarised below.

6.1 Monitoring

The level of environmental monitoring is conducted in conjunction with consent requirements.

Environmental samples are collected by appropriately trained / suitability experienced personnel and are analysed by a laboratories IANZ accredited.

Table 6.1 below summarises the compliance monitoring undertaken to monitor the effects of land-based discharge of wastewater.

Activity	Frequency
Discharge volume	Daily
Soil moisture	Real-time Weekly
Rock filter (location provided in Appendix One)	March / October
Wastewater 24 hour flow proportional sample	Weekly
Pre-development River Flat groundwater monitoring bores (location provided in Appendix Two)	Monthly
Soil analysis	Annually

Table 6.1: *Monitoring summary (refer to appropriate resource consent for detail)*

To manage and maintain all data requirements from environmental monitoring, the systematic capture of data is held within the Silver Fern Farms 'Paddock' secure intranet data warehouse – "Pareora Consents". The control of access to this data storage is managed in order to avoid inadvertent data loss or changes.

The data is also presented by way of trend graphs in order to quickly evaluate performance. Access to view the trend graphs is provided up to Group Manager / General Manager.

❖ Systems and Controls

Routine monitoring is managed by:

Element	Programme Type	Document ID (if applicable)
Effluent sampling	Task Instruction	308
Groundwater Sampling (River Flats)	Task Instruction	-
Effluent & Blood Wastewater Sampling	Task Instruction	005
Surface Water Sampling (Rock Filter)	Task Instruction	-
Soil Sampling	Task Instruction	-
Services Report	Preventative Maintenance Scheduling	-
Wastewater Discharges – Sea and Land	Data Warehouse	-
Wastewater Quality -24 Hour and Grab Samples	Data Warehouse	-
Groundwater Monitoring – Gallery and Bores	Data Warehouse	-
Soil Analysis	Data Warehouse	-
Rock Filter – Nitrate Nitrogen Concentrations	Data Warehouse	-

7 Incidents, Emergencies, and Response Measures

Environmental incidents and emergencies are reported, corrective action undertaken, investigated and analysed. Procedures and resources are in place to effectively respond to any such events.

The manager responsible for the work area where an incident occurs is responsible for ensuring the appropriate steps are undertaken. Incident details, corrective actions taken and learnings are shared across the company.

In the event of impending adverse weather or other conditions, appropriate precautionary measures may be undertaken to safeguard personnel, property, and/or the environment.

Depending on the consequence of the incident, the relevant internal and external parties are notified in accordance with established timeframes and/or legislative requirements.

7.1 Significant Event

In a significant emergency event, the appropriately trained on-site, and/or off-site, Emergency Response Team(s) may be mobilised to manage the situation.

❖ Systems and Controls

In a serious event the following procedures shall be implemented:

Element	Programme Type	Document ID (if applicable)
Containment Procedures	Task Instruction	
Crisis Management Plan Pareora	Site Management Plan	-
Emergency Procedures	Task Instruction	805 & 806

7.2 Environmental Incident

In the event of an incident, certain steps are required to be followed. These include:

- Conducting an incident investigation.
- Generating a “Flash report” within 24 hours of the incident occurring.
- Notifying affected parties, both internal and external, of the incident and corrective / preventative actions taken.

Any incidents or near misses, irrespective of whether damage to property or equipment resulted, are reported through ‘Flash’ reporting and investigated with recommendations made where required on how to prevent a recurrence or deal with any deficiencies in the appropriate systems and controls.

❖ Systems and Controls

Environmental incidents are managed by:

Element	Programme Type	Document ID (if applicable)
Containment Procedures	Task instruction	-
Flash Report	Group Standard	-
Incident Investigation	Task Instruction	826
Corrective Actions Investigation	Task Instruction	1615
Corrective Actions for Pipeline Failure	Task Instruction	403

7.3 Enquiry / Complaints Handling

Enquiries and complaints may occur via a number of different mechanisms whether coming from internal or external sources.

All environmental related enquiries and complaints are received, handled, responded to and recorded following a systematic process in accordance with incident management standards and guidelines.

To handle complaints, the responsible personnel shall determine the appropriate corrective and preventative actions to ensure the actions are implemented effectively to rectify the problem.

❖ Systems and Controls

In the event that a complaint is received, complaints are managed by:

Element	**Programme Type**	**Document ID** (if applicable)
Resource Consent Complaints	Task Instruction	200
Recording Complaints	Task Instruction	7028
Pareora Complaint Register	Data Warehouse	-

8 Environmental Reporting and Review

Environmental performance reporting is carried out to both internal and external parties on a regular basis. Regulatory annual reporting is provided to Environment Canterbury is carried for all relevant activities across the Site, including coastal activities.

An interpretive annual report is provided to Environment Canterbury prior to 31 August each year. The report summarises the Sites environmental performance for the seasonal reporting period 1 July – 30 June, including:

- A description of the activities carried out over the past season;
- A comprehensive review of the monitoring results and any complaints over the season, including a comparison of the results against:
    - Relevant statutory requirements, limits or performance measures / criteria including where applicable any non-compliance over the last season, and a description of the actions that were, or are being, taken to ensure compliance;
    - Trends in monitoring results.
- A description of any additional measures that will be implemented over the next season to improve the environmental performance.

Monthly environmental performance reporting is provided by the Site to senior management, who in turn report on a monthly basis the environmental performance each Operating Site to the Silver Fern Farms Board.

8.1 Environmental Performance

Environmental performance reporting is reported in accordance with the required timeframes as required internally and externally.

❖ **Systems and Controls**

Reporting requirements are managed by:

Element	Programme Type	Document ID (if applicable)
Monthly Environmental Report	Internal Reporting	-
Annual Environmental Performance Report	External / Internal Reporting	-

8.2 Performance Assessment

Routine environmental performance reviews, formal and informal, are conducted by both Silver Fern Farms personnel and external parties, including regulatory agencies. The findings of these reviews are recorded and actions and/or recommendations addressed and tracked as required.

❖ Systems and Controls

Environmental performance reviews are managed by:

Element	Programme Type	Document ID (if applicable)
Environmental Advice Note	Group Environmental Review	-
Contracted Review (as required)	Contractual	-
Environment Canterbury Review (as required)	Legislative	

8.3 Environmental System Assessment

Silver Fern Farms takes the opportunity during the annual reporting process to review the suitability and effectiveness of the Integrated Land Management Plan, in addition to the Environmental Management Systems for the Site.

This Management Plan may also be reviewed at any time depending upon triggering events (carried out as appropriate and based on the magnitude of the trigger):

- Inclusion of lessons identified through incident investigation.
- Inclusion of audit outcome or finding.
- Change in nature of activity and associated risks.
- Change in regulatory or Company requirements.

Consistent with the principles of continuous improvement, the Silver Fern Farms Pareora controls and other related documents will be periodically updated.

If amendments to the Management Plan are made, the updated plan will be submitted to Environment Canterbury shortly thereafter as is standard practice.

Appendix One – Rock Filter

Appendix One: *Rock Filter*

Appendix Two – River Flat Groundwater Monitoring

Appendix Two: *River Flat Groundwater Monitoring*