Notice is given that an ordinary meeting of the Nelson Regional Sewerage Business Unit will be held on:

Date:	**Friday 15 September 2017**
Time:	**2.30 pm**
Meeting Room:	**Ruma Marama**
Venue:	**Nelson City Council**

Nelson Regional Sewerage Business Unit

AGENDA

MEMBERSHIP

Chairperson	Michael Higgins
Members	Cr Kit Maling
	Cr Tim Skinner
	Cr Stuart Walker

(Quorum 2 members)

Contact Telephone: 03 543 8524
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Note: The reports contained within this agenda are for consideration and should not be construed as Council policy unless and until adopted.

AGENDA

1 OPENING, WELCOME

2 APOLOGIES AND LEAVE OF ABSENCE

Recommendation
That apologies be accepted.

3 DECLARATIONS OF INTEREST

4 PUBLIC FORUM

5 CONFIRMATION OF MINUTES

That the minutes of the Nelson Regional Sewerage Business Unit meeting held on Friday, 30 June 2017, be confirmed as a true and correct record of the meeting.

6 PRESENTATIONS

Nil

7 REPORTS

7 REPORTS

7.1 GENERAL MANAGER'S REPORT

Information Only - No Decision Required

Report To:	Nelson Regional Sewerage Business Unit
Meeting Date:	15 September 2017
Report Author:	Richard Kirby, General Manager
Report Number:	NRSBU17-09-01

1 Summary

1.1 This is the General Manager's three-monthly update report.

2 Draft Resolution

That the Nelson Regional Sewerage Business Unit Committee receives the General Managers Report, NRSBU17-09-01.

3 Purpose of the Report

3.1 To report on the Nelson Regional Sewerage Business Unit (NRSBU) operational activities over the last three months and outline what is proposed over the next few months.

4 Aberrational (Accidental) Discharge Consent

4.1 The NRSBU lodged an application for a resource consent with the consenting authority (Nelson City Council) on 23 July 2015. The application was publicly notified in August/September 2016 and submissions closed at the beginning of November 2016.

4.2 Following discussions with the consenting authority, the NRSBU applied for and was granted a suspension in the processing of the applications to allow for caucusing between the NRSBU witnesses and the consent authority advisers.

4.3 A follow up caucusing meeting has been scheduled for the end of September 2017 and the process is on track for the hearing scheduled for December 2017.

	Estimate	Cost to date
Landmarklile	$ 60,104.00	$ 38,456.60
Legal	$ 71,282.00	$ 42,301.00
Environmental assessment	$ 75,000.00	$ 55,178.41
Engineering	$ 14,500.00	$ 8,376.25
Iwi Liaiso/CIA	$ 2,500.00	$ 2,500.00
Public Health	$ 21,000.00	$ 10,975.70
Recreation	$ 1,140.00	$ 1,140.00
Hydrodynamic model	$ 20,000.00	$ -
Consent fees	$ 65,000.00	$ 33,583.79
Total	$330,526.00	$ 192,511.75

5 Biosolids Research Trial and Biosolids Consent Renewal

5.1 The NRSBU has a consent to apply biosolids amongst the trees on Moturoa/Rabbit Island. This consent expires in November 2020.

5.2 The NRSBU has part funded research conducted by SCION on the effects of biosolids application on the productivity of the forest at a trial site on Rabbit Island. SCION staff met with NRSBU officers in July 2017 to discuss work that is required to demonstrate that the biosolid application area will have capacity to receive biosolids for a further 20 years beyond the current consent expiry date.

5.3 SCION explained that changes in Institute of Environmental Science and Research funding strategies/priorities will result in this project being underfunded to the extent that they will not be able to continue with this project without further financial contributions from other sources. The SCION representatives could not quantify the value of funding that is required to continue with this project.

5.4 SCION agreed to develop a price schedule of all the activities required over the next two to three years that will be required to inform the next resource consent application. This funding proposal will be submitted for consideration by the NRSBU.

6 Bell Island Discharge Consent Renewal

6.1 The discharge consents for the Bell Island Wastewater Treatment Plant expire on 7 February 2018.

6.2 The consent application is programmed to be lodged in early November 2017.

6.3 The NRSBU has undertaken some public consultation on the consent application. The first was a stakeholder meeting held on 15 June 2017 at the Headingly Centre. Approximately 20 persons attended representing various stakeholders, including iwi.

6.4 A hui was held at Tasman District Council on 7 July 2017. This was followed by a site visit to Bell Island. There was some good feedback from iwi and Cultural Impact Assessments (CIAs) are currently being drafted. At this stage there are likely to be three CIA's developed. The NRSBU has commissioned two CIAs at this stage. A third proposal is still to be submitted.

6.5 While the CIA's are important, they will not be critical for lodgement.

6.6 The consent application estimates and the costs to date are outlined in the following table.

	Contract Value/Estimate	Cost to date
Primary consultant	$220,000	$111,806
Legal	$40,000	$37,768
Iwi Liaison/CIA	$16,000	$6,031
Environmental assessment	$70,000	$36,944
Hydrodynamic model	$60,000	$0
Hydrodynamic Field work	$25,000	$23,490
Iwi facilitation (Estimate)	$15,000	$345
Consent fees (Estimate)	$30,000	$0
Total	$476,000	$216,384

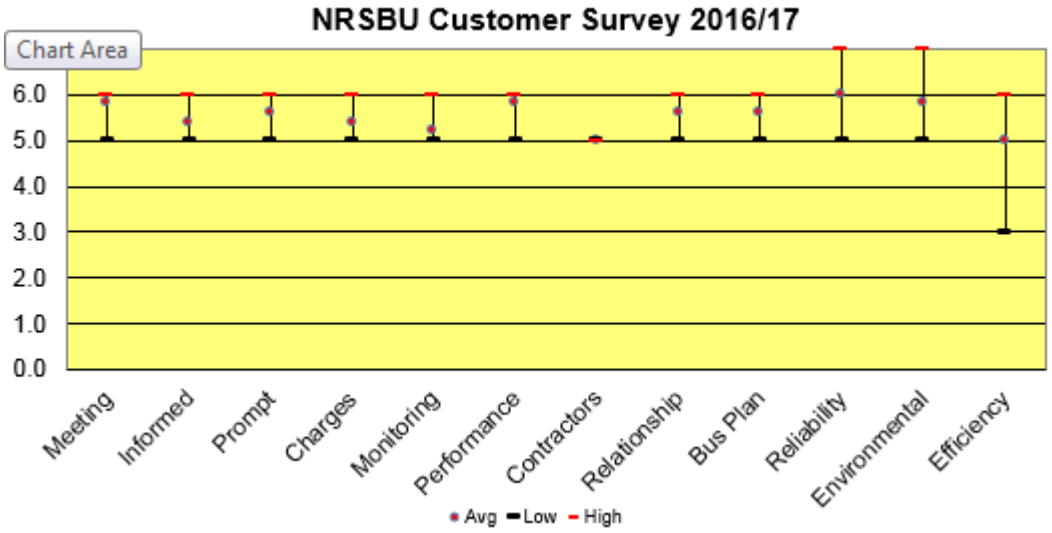
6.7 One of the issues that has arisen during the preparation of the discharge consent relates to Emerging Organic Contaminants (EOCs). These have been defined as synthetic or naturally-occurring chemicals or any microorganisms not commonly monitored in the environment, but which have the potential to enter the environment and cause known or suspected adverse ecological and (or) human health effects. Municipal wastewater treatment plant (WWTP) effluent is recognised as a major source of EOCs into the environment.

6.8 The NRSBU has contracted the Cawthron Institute and Northcott Research Consultants Limited (by subcontract) to analyse a suite of EOCs in the effluent from the Bell Island WWTP.

6.9 The concentrations of EOCs measured in the effluent of the Bell Island WWTP are considerably lower than those recognised to represent a risk to freshwater and marine organisms. This suggests EOCs represent a negligible risk to aquatic organisms in the receiving environment. In addition, the effluent will be subject to dispersion and dilution upon

discharge to the environment, which would further reduce the concentrations of these EOCs. EOCs entering the receiving environment are likely to be subject to loss and removal through a range of microbial and chemical degradation processes, and adsorption to sediment particles.

7 Customer Survey



7.1 The following comments were received:

Comments
In the last year what have we done well?
Provided good service.
Maintained the operation of the treatment plant
Provide advice on discharge issues
Helped resolve customer pump station issues
In the last year what didn't we do well?
It just costs to much, but we are looking to further treatment.
Shoud have reviewed the charging formula for whatever discharges to ensure customer bear fair share of overhead and variable costs.
What can we do to improve our service in the future?
Keep cost under control.
Ensure we get a good outcome from the resource consent process.
As staff changes, better information packs or refreshers.
Review the discharging model.
Are there any other qualities you think are desirable, and how does the business unit rate on those?
Nil
Any other comments?
Nil

7.2 An average score of over five was maintained (a score of 5.5 was achieved).

8 Valuation 31 March 2017

8.1 The NRSBU has just completed a revaluation of its assets. Opus International Consultants were engaged to complete this primary valuation.

8.2 The current value of the NRSBU's infrastructure assets is $58.951 million with an assessed accuracy level of ±10-15%.

8.3 The following table provides a summary of the valuation movement.

Gross replacement cost 30 June 2014	Gross replacement cost 31 March 2017	Percentage movement	Capital expenditure 2014-2017	Percentage revaluation movement per annum
$72,839,542	$84,832,436	16.5%	$578,445	15.5%

8.3.1 The movement in replacement value is associated with increases in preliminary and general (P&G) and on-costs. P&G costs have increased from around 5% to 17% over the past decade. This is a reflection of the uplift in demand for construction where supply is constrained due to skill shortages in the contracting industry.

8.3.2 The valuation includes 15% for P&G costs and 20% for on-costs.

8.4 The valuation has included some recommendations that the NRSBU need to consider implementing. These are outlined as follows:

8.4.1 Formalise a regular audit of the asset registers to verify completeness and accuracy. This would involve checks on recent work to determine whether the database is being updated regularly but also to ensure capital investment and asset disposal/write-offs have been correctly accounted for.

8.4.2 Undertake more rigorous checking that additions and deletions are appropriately recorded in NRSBU databases. In particular, making sure that effective age information is recorded to capture capital renewal works and appropriately reflect the value write-off to existing assets which are damaged/destroyed during construction works.

8.4.3 Undertake a review of the condition assessment ratings recorded in the database, assigning a name and date of verification.

8.4.4 Improved allocation of capital investment in a form suitable for valuation purposes. That is at component level and split between renewal of existing assets and new/improved assets.

8.4.5 Create a data file of all capital construction works to record actual project costs.

8.4.6 Ongoing analysis of project costs to monitor trends and divergence of cost rates from the cost rates used in the current valuation.

8.4.7 Continue to record condition/performance of assets for assessing remaining life expectancy of assets.

8.5 The processes to implement these improvements are contained in the improvement plan section of the Draft NRSBU Wastewater Asset Management Plan 2017.

9 Draft NRSBU Annual Report 2016/2017

9.1 The Draft Annual Report for 2016/17 is attached (**Attachment 1**).

10 Draft Wastewater Asset Management Plan 2017

10.1 The Draft NRSBU Wastewater Asset Management Plan is **attached** under separate cover.

10.2 It should be noted that this asset management plan was developed utilising the outcomes of the monitoring of the receiving environment. It is also based on the current process management at Bell Island and the assumption that the discharge would be subject to similar consent conditions to what currently exist.

10.3 This asset management plan also includes funding should further improvements be needed to meet new discharge consent conditions.

10.4 The financials in the draft plan will be amended once the 2018/19 business plan has been considered and approved in December 2017.

11 Contract 3458 – Operations and Maintenance

11.1 The reticulation and treatment operations have continued as normal over the last few months. The effluent discharge continues to meet consent conditions and sludge produced at the treatment plant continues to comply with Class A biosolid quality.

11.2 Continuous monitoring of the inlet quality, using the S::can has demonstrated that there are peaks of sulphides coming through the network. In order to protect the old concrete pipe from potential corrosion it has been decided to remove it from service and utilise the duplicate pressure main across the estuary.

11.3 This decision was based on;

11.3.1 Ensuring the flow to Bell Island is not compromised.

11.3.2 The increased velocity of wastewater is well within the capacity of the new pipeline in terms of abrasive resistance.

11.3.3 The old concrete pipe is flushed and maintained in a good condition should it be needed in the future.

11.3.4 Including funding in the Business Plan 2017/18 to convert the return pipe to allow for the flushing of the old concrete pipeline to maintain its serviceability.

11.4 The augur on milliscreen No1 was replaced and the old augur will be refurbished and used as a critical spare for the both milliscreens.

11.5 The primary sludge continues to settle well and there has been no need to run the gravity belt thickener. This diverts the use of chemicals and generate costs savings.

11.6 The ponds are performing well but the condition of the facultative ponds continues to be variable.

11.6.1 Monitoring has shown that the loads to the three facultative ponds are not equally shared. Under normal flow conditions the load to F2 is higher than the load to F1, and the load to F1 is higher than the load to F3. During high inflow periods F1 receives increased raw effluent inflows compared to the other two ponds. Work is in

progress to find the correct settings for penstocks so that the ponds can be more evenly loaded.

11.6.2 The nine new wind powered mixers have been in place for more than three months, with no adverse effects observed. To date we have not been required to run the electrically powered mixers in this pond creating savings of the electricity cost.

11.6.3 A review of the performance of the ponds will be carried out in November 2017 to establish (compare) the effects of the wind mixers on the sludge and quality of effluent in the ponds.

12 Contract 3619 – Biosolids Operation

12.1 The biosolids operations are tracking to programme without incident.

13 Key Performance Indicators

13.1 The outcomes of key performance indicators for the three-month period to 31 July 2017.

Environmental: Treatment and Disposal			
RMA consent - wastewater Discharge to Coastal Marine Area	RMA Consent - Discharge of Contaminants to Air (Odour complaints)	RMA Consent - Discharge of Contaminants to Land	Equipment Failure of critical components within treatment and disposal system
Environmental: Pump Stations			
Odour complaints from pump stations	Pump station wet weather overflows	Pump station overflows resulting from power failure	Pump station overflows resulting from mechanical failure
Environmental: Pipeline			
Reticulation breaks	Air valve malfunction		
Capacity: Overloading system capacity			
Treatment & Disposal	Pump Stations		
Reliability: Equipment failure of critical components			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for emergency and urgent maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Responsiveness: Speed of response for routine and programmable maintenance works			
Treatment & Disposal	Pump Stations	Pipelines	
Key customer relationships: Overall satisfaction			
Treatment & Disposal	Pump Stations	Pipelines	

14 Compliance Outcome

14.1 The compliance outcome for the year to 31 July 2017 is outlined in the following table.

i)	Resource Consent Compliance (rolling 12 month record)	
	➢ Discharge to Estuary Permit	Achieved.
	➢ Aberrational discharges (Consent for Aberrational Discharges within Nelson City Council area is being sought at present)	No overflows during the past 12 months.
	➢ Discharge to Air Permit	100% Compliance
	➢ Biosolids Disposal	100% Compliance

	➢ Discharge treated waste water to land 100% Compliance
ii)	**Odour Notifications**
	➢ Past three months Nil. ➢ Last 12 months Nil.
iii)	**Overflows**
	➢ Past three months Nil. ➢ Last 12 months Nil.
iv)	**Speed of response for maintenance works**
	In past three months: ➢ Seven call outs were recorded. • Power cut to Bell Island (unplanned). • Milliscreen number 1 faulted twice. • RAS pump faulted while second RAS pump was out for maintenance. • ATAD power tripped out. (Power spike?) • Aeration basin power tripped out. (Power spike?) • Primary sludge transfer pipeline blockage. ➢ Four call outs for pump station events. ➢ Two calls outs were for low flow events at the Airport pump station (Pump 2 at Airport). Operators changed the operating range of the pumps so that pumps can maintain positive flow against residual pipeline pressure during heavy rain events. ➢ One call out for low flow event at the Saxton Road pump station. ➢ One call out for a blockage on pump 2 at the Airport pump station.
	➢ Response within 30 minutes. Achieved.

15 Five Yearly Discharge Consent Report

15.1 The five yearly review of impact monitoring of the receiving environment was considered by the NRSBU at its meeting 10 March 2017.

15.2 Cawthron reported that the monitoring results have shown that there is no evidence that Bell Island discharges cause distress within the receiving environment.

15.3 The performance of the Bell Island discharges in terms of the consent conditions is outlined in the Fact Sheet (**Attachment 2**). The following conclusions were reported to the consent authority:

15.3.1 Monitoring carried out has generally shown that the discharge of treated wastewater from Bell Island is within consent limits and that the effects on the environment are minor. Trends are generally showing that continued operation of the wastewater treatment plant is unlikely to cause distress to the receiving environment.

15.3.2 The increase in effluent discharged to the wastewater treatment plant has been moderate and is mainly associated with stormwater inflow and infiltration. With the reticulation networks discharging to the NRSBU network aging, it is important that

the business unit works closely with the two councils to improve the management of the networks.

15.3.3 The loads to the wastewater treatment plant have not increased at historically projected trends. Trend projections based on loads received since the introduction of the revised Disposal of Tradewaste Agreements with the five customers in 2007, designed around demand management principles, show that loads discharged to the treatment plant are decreasing or have flat-lined.

15.3.4 The Carbonaceous Biological Oxygen Demand and Suspended Solids trends suggest that these loads have increased gradually over time and the NRSBU has developed and is implementing programmes to manage the sludge build up in the ponds.

16 Review of Action Plan Implementation – 2014 Asset Management Plan and 2016/2017 Business Plan

16.1 The following table indicates the draft time lines for the individual action items:

IP	Business Plan Action	Target Date	Completion Date	Comments
1	Review manuals annually.	April 2017	August 2017	Completed.
2	Consolidate all natural disaster information and review 3 yearly.	October 2017		Work will be carried out as part of next asset management review.
3	Internal benchmarking carried out annually.	June 2016	August 2016	Completed.
4	Review risk of contributors leaving NRSBU.	June 2016	December 2015	Completed.
5	Review capacity of treatment components.	December 2017		Expect treatment plant model to be in place late 2017. This will follow an assessment of S::can results.
6	Programme for pipe inspections.	August 2017	August 2017	Included in O&M manual.
7	Annual review of contractor performance.	December 2016	June 2016	Completed.
8	Screen upgrade.	April 2017	June 2017	Completed
9	Review secondary sludge separation.	December 2017		Depends on completion of treatment plant model.
10	Construction second sludge storage tank.	June 2018		Delayed from June 2016.

IP	Business Plan Action	Target Date	Completion Date	Comments
11	Develop sludge removal programme.	May 2018		Subject to review of the performance of the improvement of mixing in F2.
12	Review effluent discharge management.	March 2016	January 2016	Competed.
13	Renewal of effluent discharge permit	August 2018		On schedule.
AP	**AMP Action**	**Target Date**	**Completion Date**	**Comments**
1	Annual customer survey.	March 2017	August 2017	Responses have been received from two of the five contributors. Reminders have been sent out and representatives contacted by telephone.
2	Business Continuity Plan review.	June 2016	June 2016	Completed.
3	Consider benefits of succession planning and how it might be implemented once governance issues (TDC and NCC) have been resolved.	June 2016	June 2016	Completed.
4	Review of security required at all facilities.	March 2016	May 2016	Completed.
5	Monitor sludge levels in ponds and ascertain long term removal and disposal requirements.	March 2016	February 2016	Completed.
6	Improve reporting requirements for asset condition, performance and maintenance from maintenance contractor.	March 2016	April 2016	Completed.
7	Implementation of internal bench marking (using historical data) of NRSBU network, pump stations, treatment and disposal facilities.	October 2017		Still to be initiated
8	Develop Demand Management Policy.	June 2016	June 2016	Completed.

17 Health and Safety

17.1 There have been 13 inductions and 226 visitors to the Bell Island WWTP over the past three months.

17.2 Three Health and Safety incidents were reported.

17.2.1 Operator locked out electrical unit in “on” position.

17.2.2 Bag of used syringes and needles found abandoned at the Saxton Road pump station.

17.2.3 New lifting strops were acquired for pump stations as required by regulations.

17.2.4 Operator sustain a back strain lifting a hose.

18 Financial Status

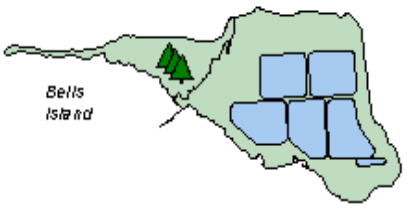
18.1 Expenditure is tracking to budget.

19 Status Report

19.1 The Status Report is attached (**Attachment 3**)

20 Attachments

Nelson Regional Sewerage Business Unit



Draft Annual Report 2016/17

1. Background

1.1 This Annual Report is a review of what has been achieved by the Nelson Regional Sewerage Business Unit (NRSBU) in the 2016/17 financial year and its level of performance against Key Performance Indicators.

2. Discussion

2.1 The NRSBU achieved a surplus of $1,549,005.

2.2 Operating and maintenance costs were 9% over budget and resulted from incorrect timing of budgeting for resource consent monitoring and the cost of dealing with a break and blockage on the biosolids transfer pipeline.

2.3 Capital expenditure for the year totalled $1,793,254 and included remedial work to the secondary clarifier, the installation of a second milliscreen, the installation of wind generated mixers in one of the facultative ponds at Bell Island and the costs associated with the consenting of the NRSBU discharges.

2.4 A highlight during the year was the installation of wind generated mixers in one of the three oxidations ponds. The installation of these mixers has resulted in lower energy costs at Bell Island without any negative effects on the performance of the pond. Further testing will be carried out later this year to establish the effects of the introduction of this alternative mixing method on the sludge captured in the ponds.

2.5 All consent conditions were met during the year.

2.5.1 The effluent discharge quality has met the consent conditions for the year.

2.5.2 The sludge treated at Bell Island consistently met the requirements for A Grade biosolids.

2.5.3 The operation and maintenance contractor maintained a high level of Health and Safety vigilance and there were no lost time related to injuries during the past year.

Level of Service Performance

2.6 The levels of service recorded over the past three years have stayed reasonably consistent. The following table summarises compliance of the levels of service.

Level of Service	Function	Category	Target Technical Level of Service	Compliance		
				2014/15	2015/16	2016/17
Environmental Impacts	Treatment & Disposal	RMA Consent - Wastewater Discharge to Coastal Marine Area	100% compliance with consent conditions	Yes	Yes	Yes
		RMA Consent – Discharge of Contaminants to Air	100% compliance with consent conditions	Yes	Yes	Yes
		RMA Consent - Discharge of Contaminants to Land	100% compliance with consent conditions	Yes	Yes	Yes
		Equipment Failure of critical components within the treatment and disposal system	No equipment failures that impact on compliance with resource consent conditions	Yes	Yes	Yes
	Pump Stations	Odour complaints from pump stations	No odour complaints originating from pump	Yes	Yes	Yes
		Pump station wet weather overflows	No overflows for all pump stations	Yes	No 3 events	Yes
		Pump station overflows resulting from power failure	No overflow events occurring	Yes	Yes	Yes
		Pump station overflows resulting from mechanical failure	No overflow events occurring	No 3 events	No 1 event	Yes
	Pipelines	Reticulation Breaks	No reticulation breaks	Yes	Yes	1 event
		Air valve malfunctions	No air valve malfunction that result in wastewater overflows	Yes	Yes	Yes
Capacity	Treatment & Disposal	Overloading system capacity	Treatment and disposal up to all contracted loads and flow	Yes	Yes	Yes
	Pump Stations	Overloading system capacity	No overflow events occurring for the contracted contributor flows	Yes	Yes	Yes
Reliability	Treatment & Disposal	Equipment failure of critical components	No equipment failures that could lead to non-compliance with resource consent conditions	Yes	Yes	Yes
	Pump Stations			Yes	Yes	Yes
	Pipelines			Yes	Yes	Yes
Responsiveness	Treatment & Disposal	Speed of response for emergency and urgent maintenance works	Achievement of Response times specified in Maintenance Contract	Yes	Yes	Yes
	Pipelines	Speed of response for routine and programmable maintenance works	Achievement of Response times specified in Maintenance Contract	Yes	No	Yes
Key Contributor Relationships	Treatment & Disposal	Overall satisfaction	Agreed levels of service provided to all Contributors.	Yes	Yes	Yes
	Pump Stations		Robust charging structure is put in place	Yes	Yes	Yes
	Pipelines		Contributors are satisfied with Sewerage Scheme	Yes	Yes	Yes

2.7 A spillage occurred when a hole developed in the concrete lined ductile iron biosolid transfer pipeline. Investigations have shown this to have been an aberrational event and that the pipeline continue to be in good condition.

2.8 It is pleasing to see the decrease of wet weather overflow events following the completion of the regional pipeline upgrade project in March 2013.

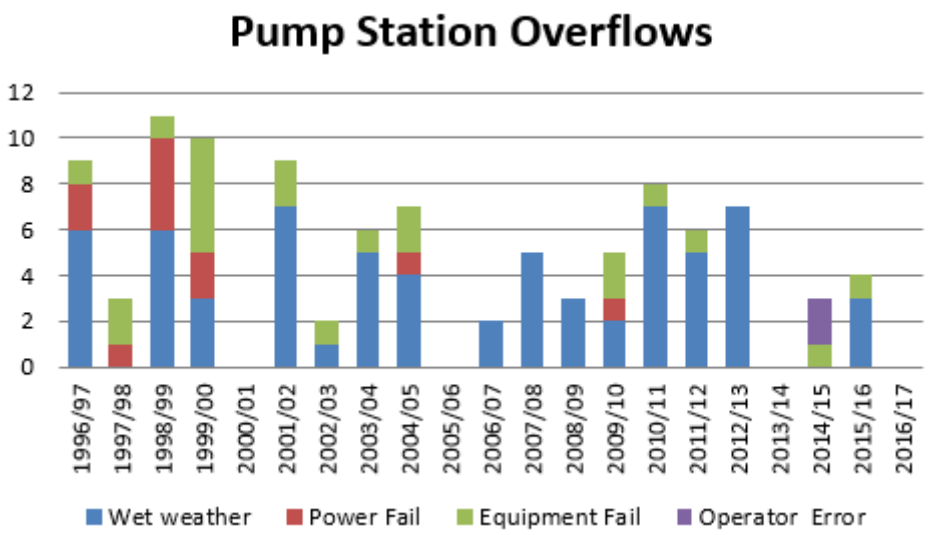


Figure 5: Pump Station Overflow Causes

2.8.1 No overflow occurred during the 2016/17.

2.8.2 While the NRSBU has investigated a number of odour complaints these were generally found to be associated with effects of activities outside the control of the NRSBU. None of the complaints investigated required any remedial response on the part of the NRSBU.

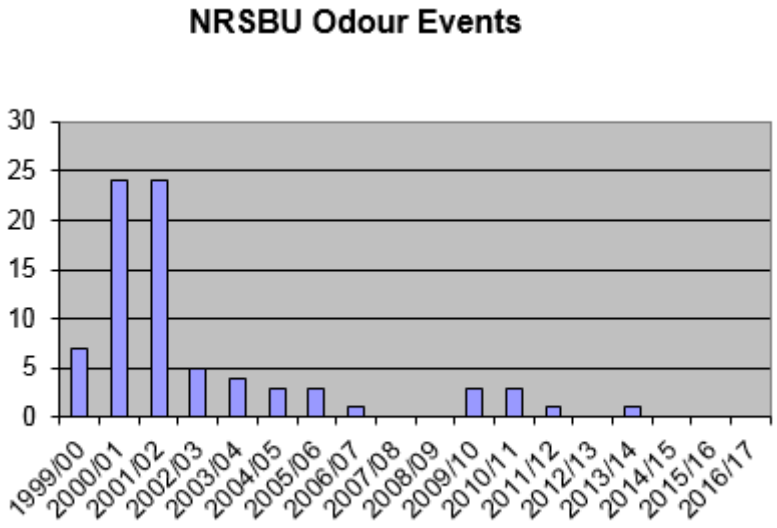


Figure 6: Odours

Customer Group

2.9 Four Customer group meetings were held during the year. Customers continue to see cost effective and efficient operation of the regional scheme as the most important task of the NRSBU and this is a high priority for the Joint Committee.

2.10 The survey also showed that most customers feel that the NRSBU is responsive to their needs. (The survey is marked out of 7). The following table summarises the results of the customer surveys.

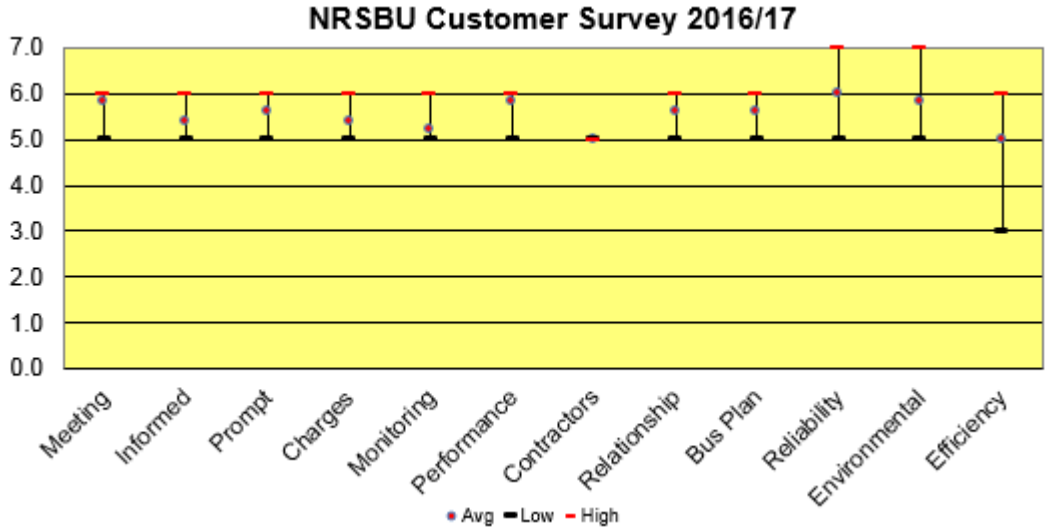


Figure 4.2: Customer Survey Results 2016/2017

Performance Measured Against Strategic Business Objectives

2.11 The strategic goals of the NRSBU set the basis for performance measurement and longer term strategies. Seven Key Result Areas are identified and a set of Key Performance Indicators developed to measure the performance of the NRSBU. The following section reports the performance of the NRSBU towards achieving the 2016-17 performance objectives. The following table outlines the performance objectives, key performance measures and what was achieved:

2.12 "5.1 Wastewater reticulation, treatment and disposal services meet customers' long term needs."

Objective	Key Performance Measures	Performance
Sufficient reticulation, treatment and disposal capacity is available for loads received.	Loads do not exceed the capacity of system components.	Achieved.
Intergenerational equity is maintained.	Loans are repaid over 30 years (the average life of the assets).	Achieved. The distribution to shareholders, as measured over a three year period, does not breach this requirement.

Customers are encouraged to engage with the organisation and are satisfied with the service.	All customer representatives attend at least 75% of customer meetings.	Achieved.
	Customer surveys show an average score of at least 5 out of 7 on satisfaction with services.	An average of 5.5 was achieved.
Levels of service are defined in all contracts and are met.	100% compliance with service level agreements by all major contractors.	Achieved.

2.13 "5.2 The cost of wastewater reticulation, treatment and disposal services are minimised"

Objective	Key Performance Measures	Performance
The costs of reticulation, treatment and disposal processes are minimised.	The operational costs of reticulation, treatment and disposal processes are maintained under the cost for these services at 30 June 2013 when adjusted by the Producer Price Index.	Achieved. The cost of operations is 2% lower than operational cost for the year ending 30 June 2013. (The Producer Price Index was 6.1% over this period)
	All capital projects are delivered within budget.	Not achieved. Programmed capital projects delayed to allow for review of pond optimisation. (Refer section 2.4)
The economic lives of all assets are optimised.	Three yearly independent audit of asset management practices confirms this.	Achieved. No comment received from Audit New Zealand.
Customers understand the benefits of demand management and the costs, risks and environmental implications of increasing demand.	That progress made by NCC and TDC with implementation of load management policies, priorities and plans will be reported on by June 2016.	Both Councils have developed inflow and infiltration strategies in their asset management plans and these strategies are part of their Long Term Plans.
	Combined Loads do not exceed the capacity of	Achieved.

	the components of the system.	
Technology choices are well understood and are proven to be reliable, sustainable and cost effective.	All significant technology choices are supported by cost benefit analysis, independent peer review, energy efficiency analysis, risk analysis and, where appropriate, by other users of those technologies.	Achieved.

2.14 "5.3 Risks associated with the services provided are identified and mitigated to a level agreed with customers and owners"

Objective	Key Performance Measures	Performance
Risk management plans include all significant health and safety, environmental, cultural, social economic and contractual risks.	No event, which impacts on agreed levels of service, occurs that has not been identified in the Nelson Regional Sewerage Business Unit risk management plans.	Achieved.
	Customer representatives review and approve the risk management plan annually and following any incidents which require activation of the plan.	Contributors were invited and took part in the long term strategy workshop of the NRSBU in June 2017.
Contingency plans adequately address emergency events.	Customer representatives review and approve the plans annually.	Not achieved. These matters are considered during the development of the asset management plan and considered at customer meetings.
	Effectiveness of plans is reviewed and confirmed following incidents which require activation of the plan.	Incidents reported in quarterly reports and considered at customer meetings.

2.15 "5.4 We engage the right people, with the right skills and experience"

Objective	Key Performance Measures	Performance
Those engaged with the Nelson Regional Sewerage Business Unit have the right skills, experience, and support to perform well.	Annual staff performance reviews include assessment of the skills and experience required in their role in Nelson Regional Sewerage Business Unit and their development needs are identified and met.	Continued.
	Development and succession plans are in place.	Continued.
	The Board reviews its performance at least every two years.	No review carried out during 2016/17.
Operation and maintenance manuals reflect best practice for the management of the plant and reticulation systems and are followed consistently.	An independent audit every three years confirms this.	Achieved.

2.16 "5.5 Nelson Regional Sewerage Business Unit operates sustainably and endeavours to remedy or mitigate any identified adverse environmental, social or cultural impact"

Objective	Key Performance Measures	Performance
Nelson Regional Sewerage Business Unit minimises adverse environmental, social and cultural impacts where this is economically viable.	That progress towards meeting energy efficiency targets are reported on and reviewed annually.	Achieved. Reported in quarterly reports.
	Current capacity to utilise beneficial application of biosolids to land is sustained.	100% of biosolids treated at Bell Island are beneficially applied to Radiata pine plantations belonging to Tasman

		District Council and Nelson City Council.
	Beneficial economic and environmental reuse of treated waste water is maintained or increased.	The lessee continued to use the irrigation system on Bell Island.
	Environmental, social and cultural impacts are considered in all decision making.	Not measured.

2.17 "5.6 Good relationships are maintained with all stakeholders.

Objective	Key performance Measures	Performance
Shareholders are satisfied with the strategic direction and the economic performance of the business unit.	All strategic and business plans are approved by shareholders.	Achieved. The Business and Strategic Plans were considered by both owners.
	All budget projections are met.	Not achieved. The operation and maintenance budget was exceeded by 9%.
Good relationships are maintained with all stakeholders including owners, iwi, customers, contractors, neighbours, and the wider community.	All complaints or objections are addressed promptly.	Achieved.
	All applications for resource consents are approved.	Achieved.
	Up to date information on activities and achievements are publicly available.	The NRSBU website is reviewed annually and updated as required.

2.18 "5.7 All statutory obligations are met."

Objective	Key Performance Measures	Performance
All statutory obligations are identified and met and are included in contracts with suppliers.	100% compliance with all statutory obligations.	Achieved.

All resource consents requirements are met.	100% compliance with all statutory obligations.	Not achieved. Irrigation took place on five occasions where more than 20mm of rainfall was registered.

Capital Expenditure 2016/17

2.19 The following table lists the extent of renewals that were undertaken in 2016/17;

	Budget 2016/17	Actual 2016/17
Renewal	$ 1,040,000	$ 1,060,560
Upgrade	$ 765,000	$ 732,693
Total	**$ 1,805,000**	**$ 1,793,253**

Renewal work included the following work:

- Renewal of three biosolids storage tanks at Rabbit Island.
- Replacement of four pumps used for the circulation of sludge in A-train (ATAD).
- Replace milliscreen drum and auger.
- Replace outfall penstock.
- Refurbishment of the secondary clarifier.
- Replace DAF chain drive.
- Replace power switch and interruptible power supply at Aeration Basin.

Upgrade work included

- Procurement of roving spectrometer to improve wastewater quality monitoring.
- Upgrade step screen to a milliscreen (Duplication of inlet screen).
- Installation of wind generated mixers in facultative pond F2.
- Aberrational and Bell Island Discharge Consents.

2.20 Renewals are programmed based on expected life and condition assessments carried out as part of the annual valuation review. During the year that the renewal is programmed the asset condition is reviewed before the renewal is confirmed and completed.

Scheme Capacity Trends

Capacity	Average flow m^3/day	Peak flow l/s	BOD kg/day	COD kg/day	SS kg/day	TKN kg/day	TP kg/day
Estimated Capacity	25,920	1,508	12,226	28,000	11,000	750	230

Figure 2.21: Bell Island Wasterwater Treatment Plant Capacity

2.21 The average inflow to Bell Island is trending well below the projections used for the 2006 capacity review.

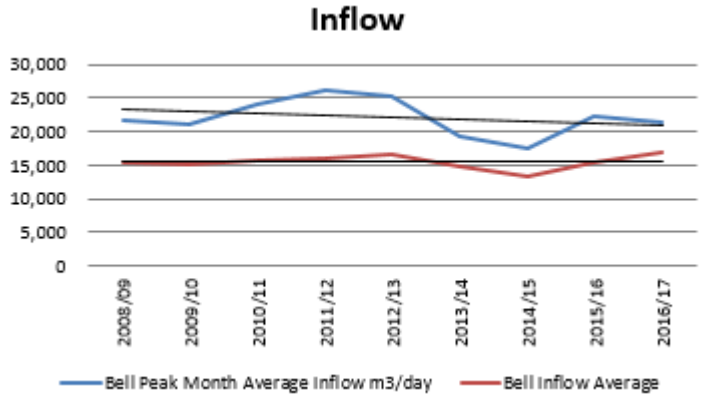


Figure 2.22: Shows the increased inflows into Bell Island

2.22 The total suspended solids design parameters (2 day peak and 95 percentile values) have shown a significant decrease since the disposal of trade waste agreements were put in place. It is considered that this decrease results from the improved on site wastewater treatment by the three industrial contributors leading up to and following the implementation of the customer contracts that were signed in 2007.

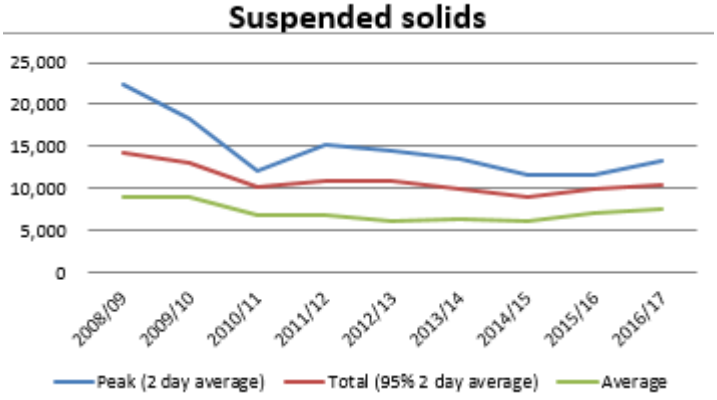


Figure 2.23: Decrease in peak suspended solids following the signing of the Disposal of Trade Waste Agreement

2.23 The biological oxygen demand in the inflow has not increased at the trends projected in the 2006 capacity review.

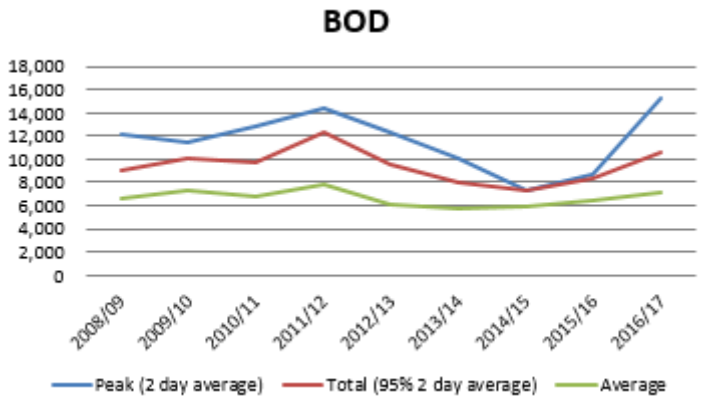


Figure 2.24: Biological oxygen demand

2.24 The chemical oxygen demand is trending lower. The trade waste agreements continue to provide an incentive for industrial customers to improve on site treatment of waste water.

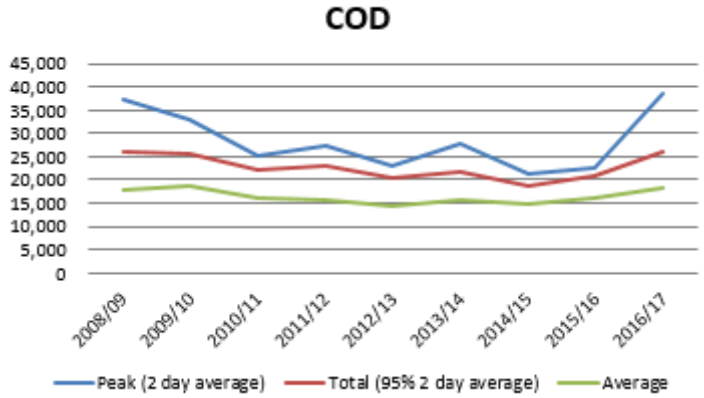


Figure 2.25: Chemical oxygen demand

2.25 The Total Kjeldahl Nitrogen (TKN) and Total Phosphorous (TP) in the effluent discharged to Bell Island has decreased has over time and little change in the nutrient levels in discharges from Bell Island has been observed.

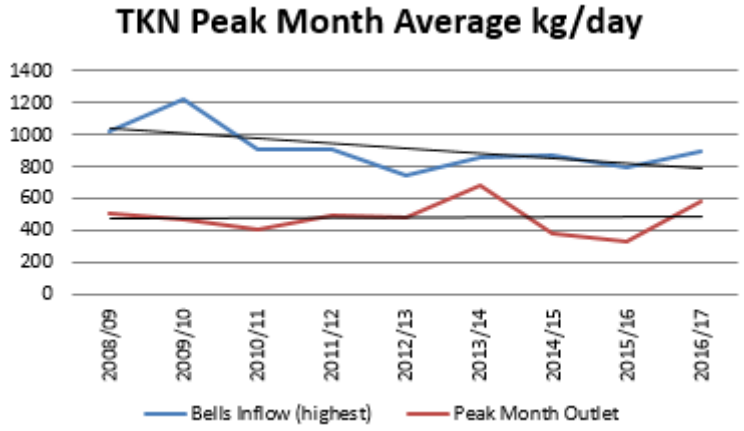


Figure 2.26: Shows a decrease in the nutrients received at Bell Island

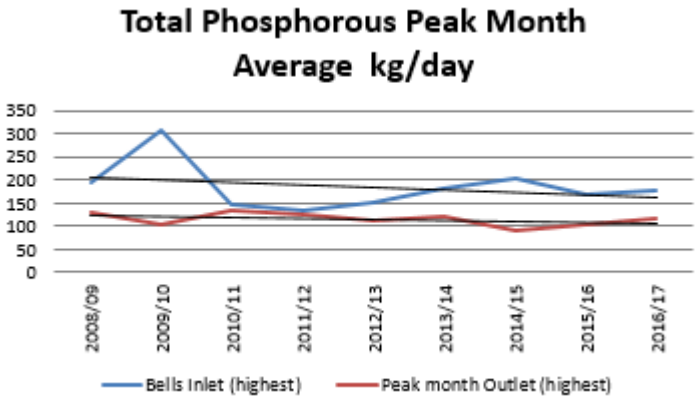


Figure 2.26a: Shows a decrease in the phosphorous received at Bell Island

2.26 The average total nitrogen and total phosphorous loads discharging from Bell Island is less than 50% of the resource consent limits.

2.27 The graph below shows that the application of nitrogen at Rabbit and Bell Island through biosolid application is within the capacity of these areas to receive nitrogen.

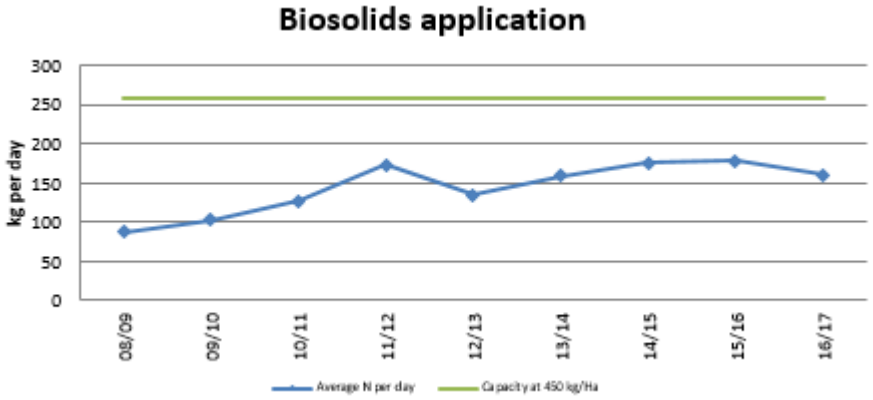


Figure 2.27: Average daily biosolids application

2.28 The diversion of solids away from the ponds since the completion of the primary clarifier upgrade is significant. This allows flexibility in the management of sludge treatment at Bell Island without compromising the ponds.

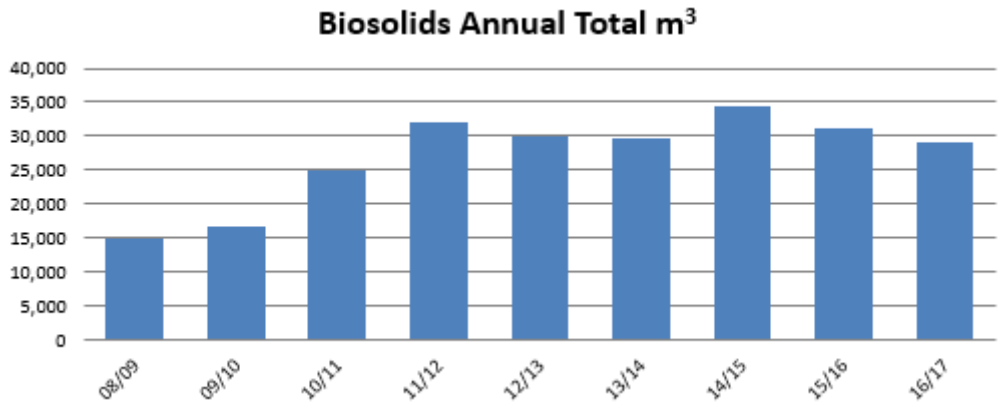


Figure 2.28: Dry solids diverted to pine plantations

Conclusion

2.29 Analysis of the scheme capacity trends confirms that peak loads have been shaved significantly since 2007 and that there is adequate capacity within the system to treat wastewater discharged to Bell Island.

Financial Performance

2.30 Explanations for major variations from the Nelson Regional Sewerage Business Unit's 2016/17 Business Plan are as follows:

Statement of Comprehensive Income

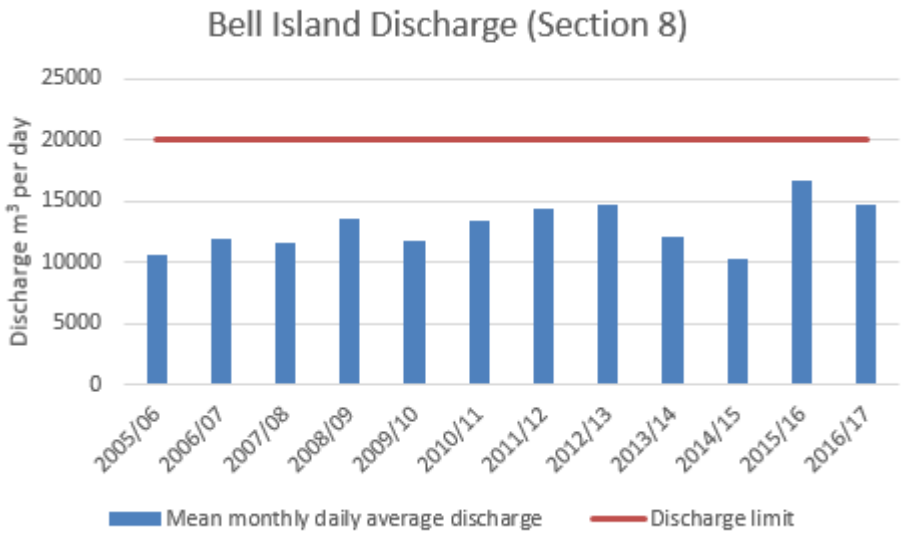
2.31 Total Income is $750,426 less than budget due to lower interest rates reducing the rate of return on capital.

2.32 Total Expenses are $113,919 less than budget largely due to interest being $384,342 less than the budget due to a reduction in interest rate paid.

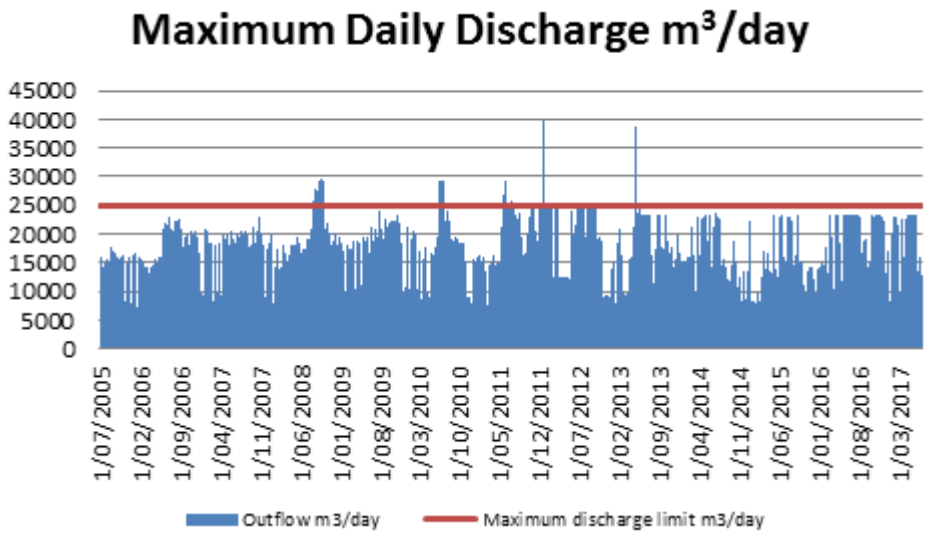
FACT SHEET

NRSBU: RESOURCE CONSENT NN000539V1

1.1. Section 8. "The mean daily flow of effluent discharges over a one year period shall not exceed 20,000 cubic metres per day (m^3/day)".



1.2. Section 8 continued. "The total volume of discharges shall not exceed 25,000 cubic metres (m^3) during any 24 hour period, including the 1,040cubic metres per day (m^3/day) spray irrigated to land approved under RM071151".

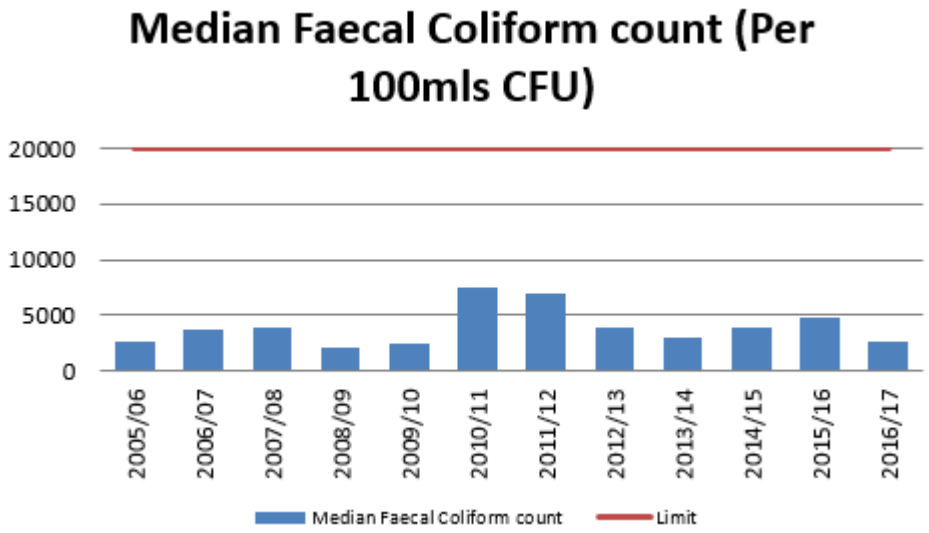


1.3.

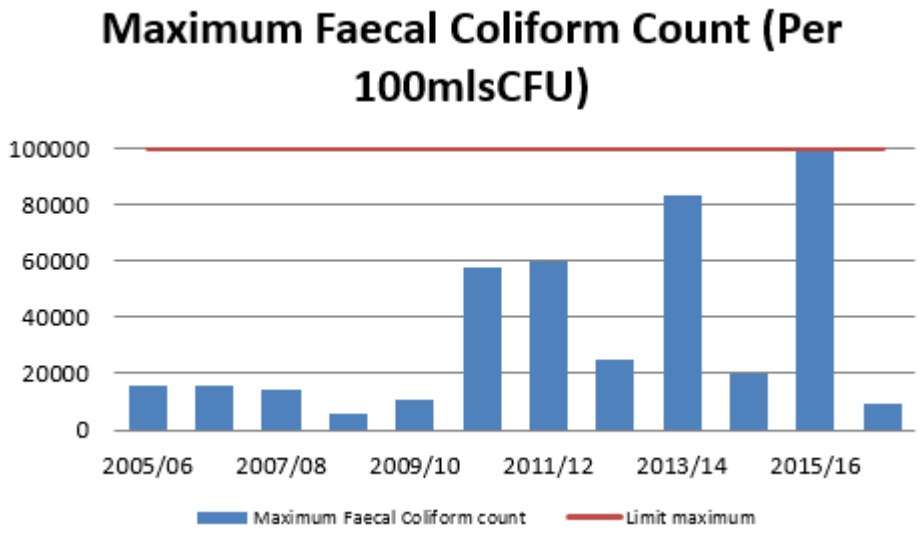
Section 9. "The discharge of effluent is authorised for a period of up to three hours after any high tide at the outfall, under normal operating conditions."

The outfall gate is set so that it will not allow a discharge exceeding 11,900m3 per discharge or three hours (Whichever limit is reached first).

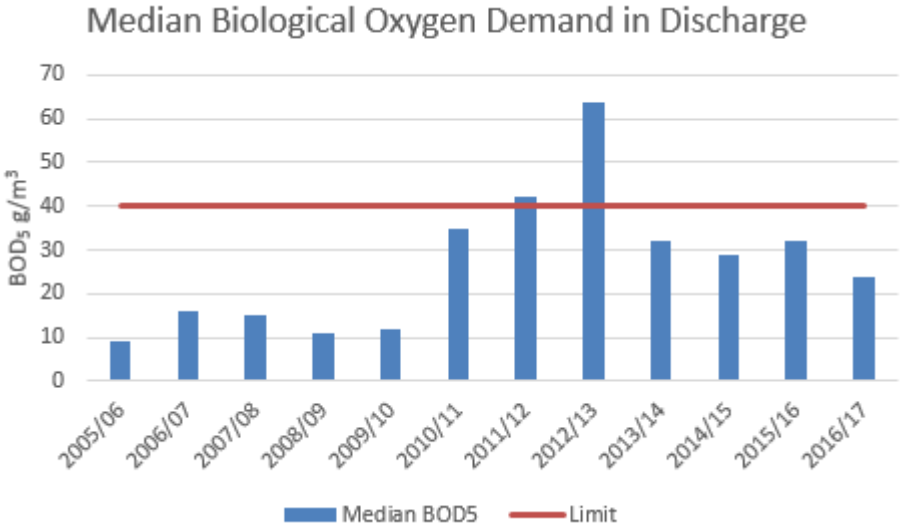
1.4. Section 11. a) "The median faecal coliform count over a one-year period shall not exceed 20,000 per 100mls CFU"



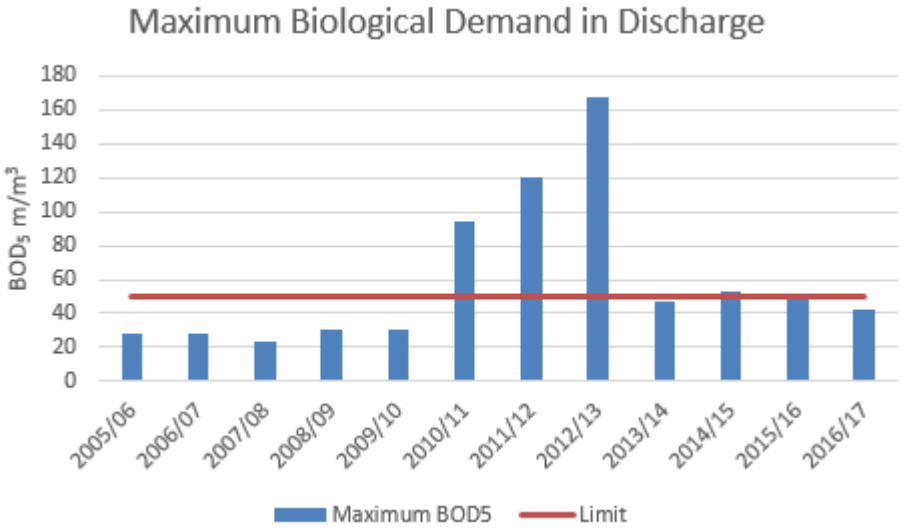
1.5. Section 11. a) continued.."and not more than 6.25% of samples shall exceed 100,000mls CFU"



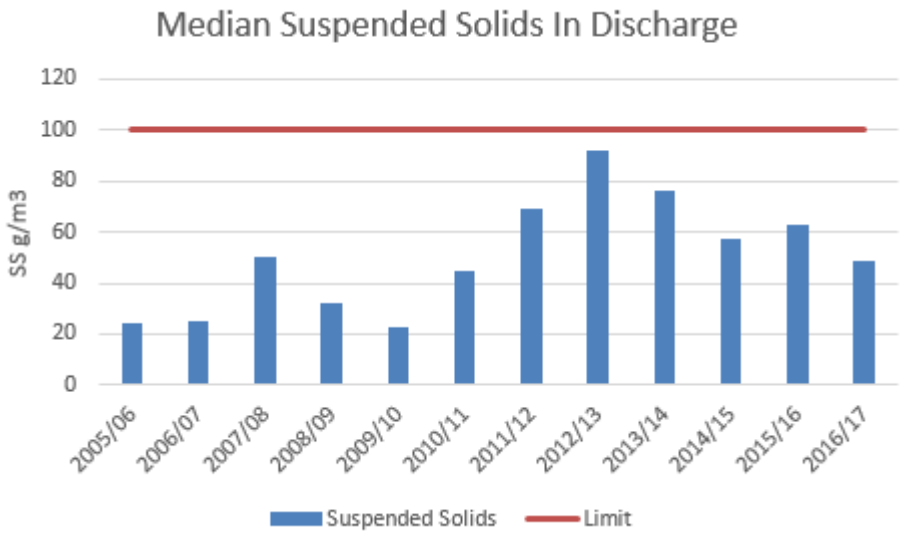
1.6. Section 11 b) "The median five-day Biological (Biochemical) Oxygen Demand (BOD) concentration over a one-year period shall not exceed 40g/m3."



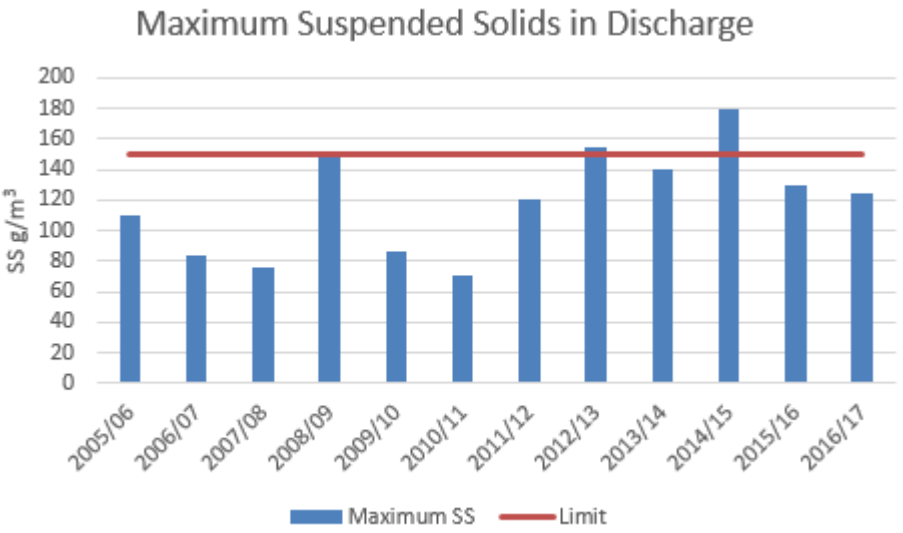
1.7. Section 11 b) continued "and no more than 6.25% of the samples shall exceed 50g/m^3.



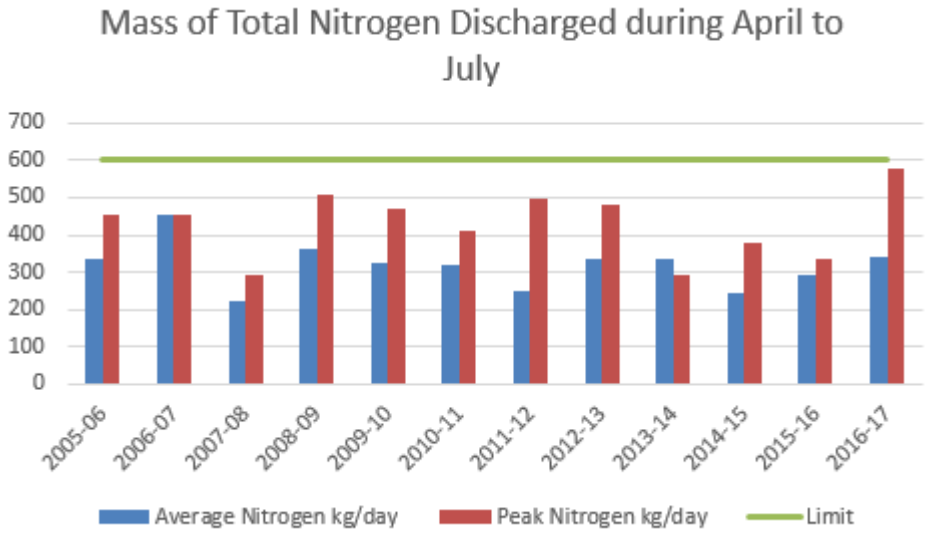
1.8. Section 11 c) "The median Suspended Solids (SS) concentration over a one-year period shall not exceed 100 g/m^3 "



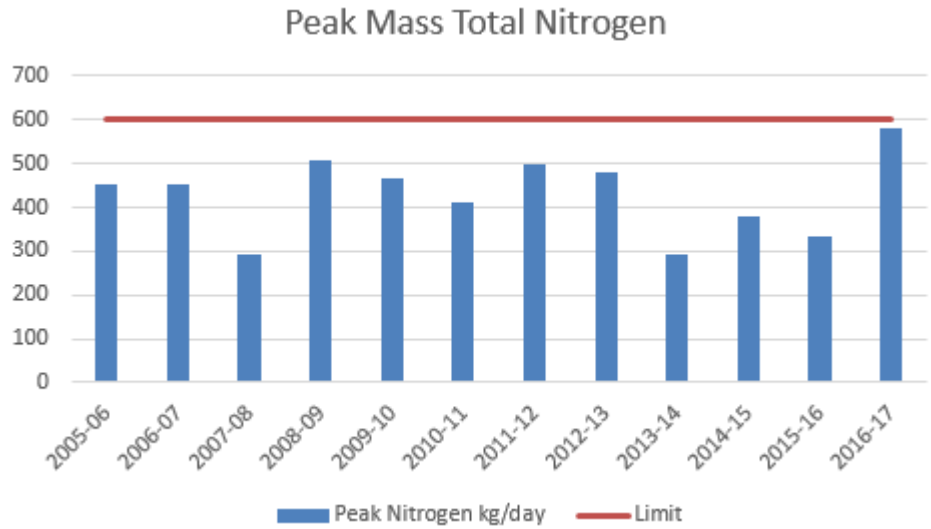
1.9. Section 11 c) continued "and no more than 6.25% shall exceed 150g/m^3."



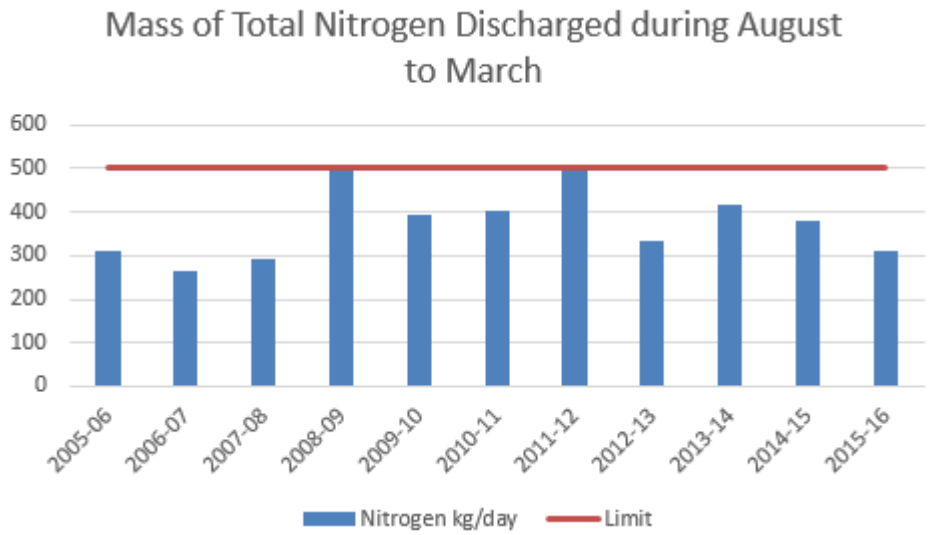
1.10. Section 12 d) "Over the period 1 April to 31 July of any year the median mass of total nitrogen discharged daily shall not exceed 500kg/day"



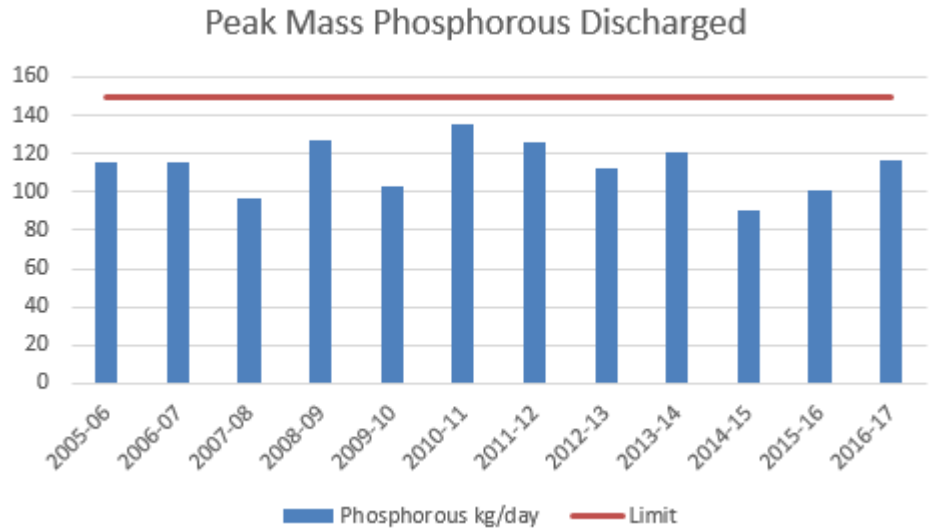
1.11. Section 12 d) continued "and at least 87.5% of samples shall be less than 600kg/day."



1.12. Section 11 e) "Over the period 1 August to 31 March in any year the mass of total nitrogen discharged daily shall not exceed 500kg/day for at least 87.5% of samples taken, and shall at no time exceed 600kg/day."



1.13. Section 11 f) "The mass of total phosphorous discharged daily shall be less than 150kg/day for at least 93.75% of samples and shall at no time exceed 180kg/day."

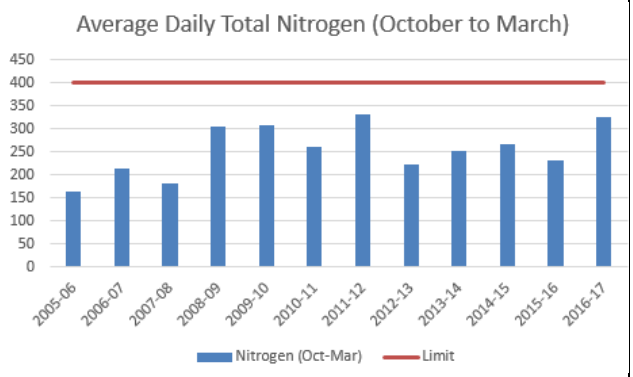


1.14. Section 11 g) "The amount of the following substances, in grams per cubic metre (g/m^3) of effluent, shall not exceed the following:"

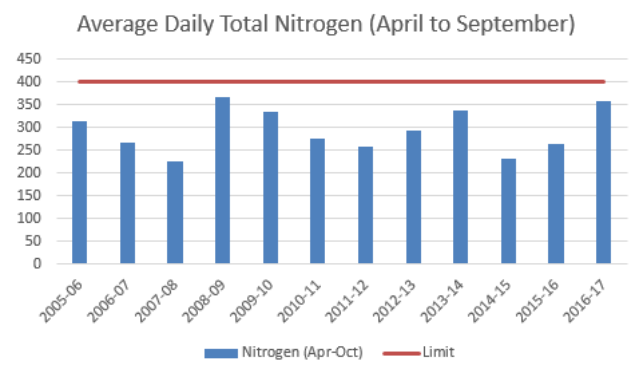
	Cadmium	Copper	Nickel	Zinc	Chromium	Lead	Arsenic	Sulphide	Cyanide	Phenols	Mercury
Limit	0.28	0.028	0.28	0.6	0.176	0.176	0.5	0.44	0.16	16	0.016
2005	<0.0005	0.003	0.009	<0.01	0.009	<0.003	<0.01	<0.2	<0.001	0.03	<0.0002
2006	<0.003	<0.005	0.01	<0.05	0.009	<0.002	<0.05	<0.5	<0.001	0.02	<0.0002
2007	<0.0005	0.005	0.0031	0.013	0.006	0.006	<0.01	<0.2	0.001	<0.01	<0.0002
2008	<0.0005	0.003	0.0025	<0.005	0.01	<0.003	<0.01	<0.2	0.002	<0.01	<0.0002
2009	<0.0005	0.002	0.0019	0.006	0.006	0.004	<0.01	<0.2	<0.001	<0.01	<0.0002
2010	<0.0005	0.013	0.0022	0.011	0.004	<0.003	<0.01	<0.2	0.001	0.002	<0.0002
2011	<0.0005	0.002	0.0059	0.009	0.005	<0.003	<0.01	<0.2	0.003	<0.01	<0.0002
2012	<0.0003	<0.003	0.004	0.01	0.008	<0.001	0.006	0.028	0.0011	0.017	<0.0003
2013	<0.00005	0.0049	0.0035	0.013	0.0053	0.00021	0.0033	<0.1	0.02	<0.01	<0.00005
2014	<0.00005	0.0084	0.0036	0.017	0.0031	0.00032	0.0024	<0.1	<0.005	<0.05	<0.00005
2015	<0.00005	0.0027	0.00031	0.0077	0.0038	0.00022	0.0033	<0.1	<0.005	<0.025	<0.00005
2016	<0.00005	0.0032	0.0032	0.017	0.0027	0.00026	0.0039	<0.1	<0.005	<0.025	<0.00005
Max value as percentage of Limit	0.00%	46.43%	3.57%	2.83%	5.68%	3.41%	1.20%	6.36%	12.50%	0.19%	0.00%

1.15. Section 15A "In the event that the following effluent triggers are exceeded, the monitoring intervals specified in Annex 3 (five yearly for Part A and six monthly for Part B) shall be reviewed when:

- Average daily loadings of total nitrogen for summer, (October – March) and winter (April – September) exceed 400kg."

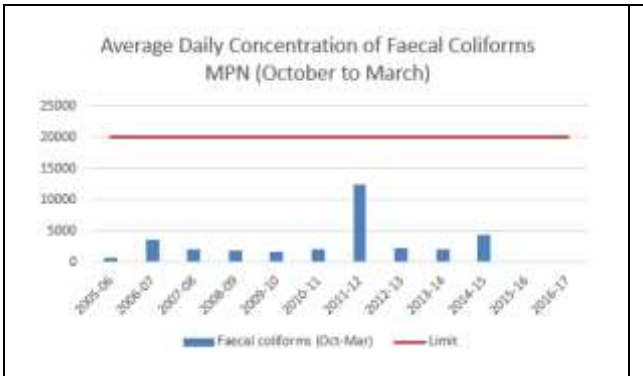


Summer (October – March)

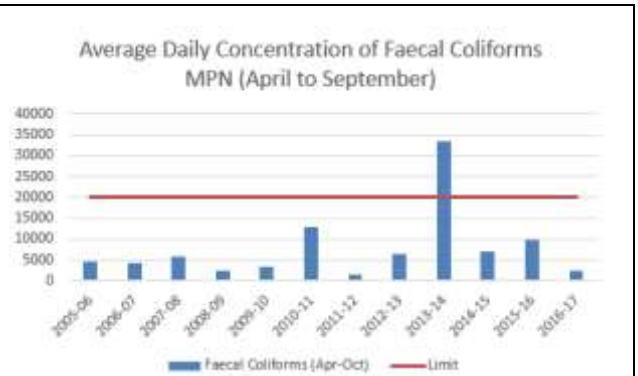


Winter (April to September)

- "Average daily concentrations of faecal coliforms for summer, (October – March) and winter (April – September) exceed 20,000 MPN or CFU/100ml."



Summer (October – March)



Winter (April to September)

NRSBU STATUS REPORT - 15 September 2017							
No	**Meeting Date**	**Document Number**	**Report Date**	**Report Title / Item Title**	**Officer**	**Resolution or Action or Issue**	**Status**
a	30/06/17	A1971112	30/06/17	Minutes	R Kirby	General Manager to request TDC to reconsider their contribution to the cost of the SCION biosolids trial site study and reinfi-orce thbe economic benefits that will accrue to TDC.	Continue.
b	10/03/17	R7164	10/03/17	GM report		Treated wastewater recirculation.	The trial was completed in April 2017 and the outcome is being reviewed and will be reported on in a future GM report.
c	24/06/16	M1761	24/06/16	Minutes	J Thiart	Review of Trade Waste Agreement Amendments.	Signed agreements received from TDC and Alliance. Reminders sent to other contributors.
d	24/06/16	M1761	24/06/16	Minutes	J Thiart	Cawthron assessment of the capacity of Bell Island for the disposal of sludge to land.	Project defered until we have evaluated the outcome of the Accel-o-Fac upgrade of the ponds.
e	24/06/16	M1761	24/06/16	Minutes	R Kirby	Accidental discharge consent application.	The hearing is set to take place at the beginning of December 2017. Update included in GM report.
1	10/03/17	R7164	10/03/17	GM report		Approves expenditure up to $29,000 in the 2017/18 year for the initial eradication treatment of Argentine Ants at Bell Island, svcheduled for November 2017.	The initial baiting for Argentine Ants were carried out in March 2017 and the success of the programme will be evaluated in October 2017.
2	9/12/16	M2249	9/12/16	Minutes	J Thiart	Requests that the outcome of the monitoring be reported back to the NRSBU for approval prior to the remaining 50% payment being made to Gurney Environmental.	The mixers have been installed in April 2017 and evaluation is continuing.
3	19/06/15	M1272	19/06/15	General Manager's report		THAT NRSBU contribute an amount of $20,000 for the completion of the research by SCION payable on receipt of the final environmental report; AND THAT NRSBU contribute an amount of $10,000 payable on receipt for the final harvest report.	Awaiting report from SCION
4	22/06/12	1307226	22/06/12	Bell Island Energy Audit	J Thiart	AND THAT the optimisation of O_2 levels in the aeration basin will be considered as part of the waste water treatment capacity review; AND THAT the cost of changing the point of supply for the ponds and irrigation pump station will be investigated in order to establish the return on capital investment.	To be included in AMP. Contractor instructed to investigate the cost of integrating the power supply to the ponds and the irrigation pump station.