AGENDA

Ordinary meeting of the

Nelson Regional Sewerage Business Unit

Friday 16 September 2016
Commencing at 1.00pm
Ruma Mārama, Level 2A
Civic House
110 Trafalgar Street, Nelson

Membership: Nelson City Councillor Ruth Copeland, Mr Derek Shaw, Tasman District Councillors Barry Dowler and Michael Higgins

M2125

Guidelines for councillors attending the meeting, who are not members of the Committee, as set out in Standing Orders:

- All councillors, whether or not they are members of the Committee, may attend Committee meetings (SO 2.12.2)
- At the discretion of the Chair, councillors who are not Committee members may speak, or ask questions about a matter.
- Only Committee members may vote on any matter before the Committee (SO 3.14.1)

It is good practice for both Committee members and non-Committee members to declare any interests in items on the agenda. They should withdraw from the room for discussion and voting on any of these items.

Nelson Regional Sewerage Business Unit

16 September 2016

Page No.

Apologies

1. Confirmation of Order of Business

2. Interests

2.1 Updates to the Interests Register

2.2 Identify any conflicts of interest in the agenda

3. Public Forum

4. Confirmation of Minutes

4.1 24 June 2016 **5 - 9**

Document number M1959

Recommendation

<u>THAT</u> the minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 24 June 2016, be confirmed as a true and correct record.

5. General Manager's report **10 - 45**

Document number R6501

Recommendation

<u>Receives</u> the report General Manager's report (R6501) and its attachments (A1517758, A1617464 and A1618644);

<u>Approves</u> a 50% contribution towards the cost of installing a second power cable to the Bell Island Wastewater Treatment Plant, up to a maximum of $223,500, excluding GST;

<u>Approves</u> funding the upgrade cost of improvements to the biosolids transfer pipeline from within the capital budget approved in the 2016/2017 Business Plan;

<u>Approves</u> progressing with engaging the appropriate expertise to prepare and submit a resource consent application that will allow for the renewal of the discharge of treated wastewater to the Waimea Inlet, discharge of treated wastewater to land at Bell Island, and the discharges to air related to the wastewater treatment plant at Bell Island.

6. Draft Nelson Regional Sewerage Business Unit Annual Report 2015/2016 46 - 79

Document number R6520

Recommendation

<u>Receives</u> the report Draft Nelson Regional Sewerage Business Unit Annual Report 2015/2016 (R6520) and its attachments (A1619083, A1619080 and A1623133);

<u>Approves</u> the Annual Report (R6520) subject to audit.

Nelson City Council
te kaunihera o whakatū

Minutes of a meeting of the Nelson Regional Sewerage Business Unit

Held in Ruma Mārama, Floor 2A, Civic House, 110 Trafalgar Street, Nelson

On Friday 24 June 2016, commencing at 1.01pm

Present:	Councillors M Higgins (Chairperson) and B Dowler (Tasman District Council), Councillor R Copeland (Nelson City Council), and Mr D Shaw (Nelson City Council Representative).
In Attendance:	Nelson Regional Sewerage Business Unit Manager (R Kirby), Senior Asset Engineer – Solid Waste (J Thiart), Industry Customers' Representative (P Wilson), Iwi Representative (M Hippolite), Management Accountant (A Bishop), and Administration Adviser (J McDougall)

Apologies

It was noted that Councillor Copeland would be a few minutes late.

1. Confirmation of Order of Business

There was no change to the order of business.

2. Interests

The Chairperson declared an interest with item 5.8 Contract 3619 – Biosolids Operation.

For future reference (as the item was not on today's agenda), the Chairperson declared an interest in the Rabbit Island hearing decision.

There were no updates to the Interests Register, and no further interests with items on the agenda were declared.

3. Public Forum

There was no public forum.

4. Confirmation of Minutes

4.1 11 March 2016

Document number M1761, agenda pages 5 - 8 refer.

Resolved NRSBU/2016/003

***THAT** the minutes of the meeting of the Nelson Regional Sewerage Business Unit, held on 11 March 2016, be confirmed as a true and correct record.*

Shaw/Dowler Carried

5. General Manager's report

Document number R5962, agenda pages 9 - 26 refer.

Attendance: Nelson City Councillor Ruth Copeland joined the meeting at 1.06pm.

The General Manager's report was discussed as follows:

5.1 Bokashi Logic project proposal

In response to a query, Nelson Regional Sewerage Business Unit Manager, Richard Kirby, advised that it was hoped to have enough details of the Bokashi Logic proposal for the September meeting so that a decision could be made on the next step.

It was suggested that any decision on the Bokashi Logic proposal might need to go to the owners (Tasman District Council and Nelson City Council) because of its significance, as the Nelson Regional Sewerage Business Unit committee only had four voting members.

5.2 Pond Sludge Management

It was noted that the ponds were desludged last in 1994-1996. It was advised that Pond 2 was not completely desludged at that time due to the lack of a location to receive the sludge.

In response to a question, Senior Asset Engineer – Solid Waste, Johan Thiart, advised that the proposal from Gurney Environmental stated that the sludge levels in the ponds would be reduced by 2.5 feet to 12 inches.

In response to a further question, Mr Thiart advised that action needed to be taken on pond 2 within 3 years, and within 7-10 years on ponds 1 and 3.

Mr Thiart advised that he would report back at the September meeting on the possibility of the Cawthron Institute undertaking a study of the capacity of Bell Island to receive the sludge.

In response to a request, Mr Thiart said he would circulate information about the Accel-o-Fac mixers/aerators included in the Gurney Environmental proposal.

Nelson Regional Sewerage Business Unit Manager, Richard Kirby, advised that he would provide information to the September meeting on the proposal received from Gurney Environmental.

5.3 Bell Island Spit Restoration

Nelson Regional Sewerage Business Unit Manager, Richard Kirby agreed to invite the Spit Restoration Group to make a presentation to the Board on their continued activities at the spit area at the December Board meeting.

5.4 Sampling and Laboratory Auditing

Nelson Regional Sewerage Business Unit Manager, Richard Kirby said that the accuracy of sampling and laboratory auditing had been discussed at the last contributor meeting, with a need identified for some processes to be sharpened. It was discussed whether testing was being undertaken in a consistent way and queried if the tests were reliable enough to reveal any systemic problems.

5.5 Trade Waste Agreement Amendments

Senior Asset Engineer – Solid Waste, Johan Thiart, noted that at the previous meeting it had been agreed to decide on the process as a group.

It was also noted that some industries occasionally needed to put an elevated load on the system and this could skew results. An example of this was discharging from log vats. These elevated loads would need to be scheduled around other contributors and it was confirmed that these matters were being discussed with other contributors.

5.6 Annual Customer Satisfaction Survey

Nelson Regional Sewerage Business Unit Manager, Richard Kirby noted the comments received from survey respondents, with some disappointment considering that costs had been more fairly allocated and a transparent agreed process used.

5.7 Contract 3458 – Operation and Maintenance

Nelson Regional Sewerage Business Unit Manager, Richard Kirby, advised that he recommended that the current contract (with Nelmac) be rolled over for a further two year period.

In response to a query, Mr Kirby advised that the contractor's performance had been evaluated and any deficiencies were either being addressed or had been addressed.

5.8 Contract 3619 – Biosolids Operation

Attendance: The Chairperson declared an interest with item 5.9 Contract 3619 – Biosolids Operation and left the meeting at 2.16pm.

It was noted that in 10.2, the date should be changed from December 2016 to December 2015.

The group asked for paragraph 10.4 to be amended to read:

With the sludge processing system, ATAD's, back to full capacity following remedial work it is projected that land available at Rabbit Island and Bell Island will be adequate for the application of all biosolids produced at Bell island for the next three to five years.

Attendance: The Chairperson returned to the meeting at 2.20pm.

Attendance: Councillor Higgins declared an interest in the Rabbit Island hearing decision.

5.9 Key Performance Indicators

In answer to a query, Nelson Regional Sewerage Business Unit Manager, Richard Kirby, advised that there had been three accidental discharges in the last three months. It was highlighted that it was impractical for all accidental discharges to be prohibited.

5.10 Compliance outcomes

Group members had no comment on this part of the report.

5.11 Health and Safety

The large number of visitors to the Bell Island Wastewater Treatment Plan was noted.

5.12 Financial

Management Accountant, Andrew Bishop, presented the financial report for the period ending 31 May 2016 (A1565151).

Mr Bishop noted that expenditure was below budget and that interest received was also below budget, reflecting the current economic environment. Mr Bishop noted that refunds would be being made this year.

Resolved NRSBU/2016/004

THAT the report General Manager's report (R5962) and its attachments (A1516705 and A1565151) be received;

AND THAT Contract 3458 Operations and Maintenance with Nelmac be extended on the same terms and conditions for another 2 years to 30th September 2018 at an annual cost of approximately $1,600,000 excl GST.

Copeland/Dowler Carried

6. NRSBU Demand Management

Document number R6063, agenda pages 27 - 31 refer.

Senior Asset Engineer – Solid Waste, Johan Thiart, presented the report.

Resolved NRSBU/2016/005

THAT the report NRSBU Demand Management (R6063) be received.

Shaw/Dowler Carried

Attachments

1. A1516705 – Bell Island Spit Restoration
2. A1565151 – Nelson Regional Sewerage Business Unit Financial Report for the period ending 31 May 2016
3. R6063 - NRSBU Demand Management

There being no further business the meeting ended at 2.56pm.

Confirmed as a correct record of proceedings:

_____ Chairperson _____ Date

REPORT R6501

General Manager's report

1. Purpose of Report

1.1 To report on the NRSBU operational activities over the last few months and outline what is proposed over the next few months.

Recommendation

It is recommended that the Committee

***Receives** the report General Manager's report (R6501) and its attachments (A1517758, A1617464 and A1618644);*

***Approves** a 50% contribution towards the cost of installing a second power cable to the Bell Island Wastewater Treatment Plant, up to a maximum of $223,500, excluding GST;*

***Approves** funding the upgrade cost of improvements to the biosolids transfer pipeline from within the capital budget approved in the 2016/2017 Business Plan;*

***Approves** progressing with engaging the appropriate expertise to prepare and submit a resource consent application that will allow for the renewal of the discharge of treated wastewater to the Waimea Inlet, discharge of treated wastewater to land at Bell Island, and the discharges to air related to the wastewater treatment plant at Bell Island.*

2. Bell Island Wastewater Treatment Plant - Electricity Supply

2.1 Currently there is only one electrical cable supplying power to Bell Island Wastewater Treatment Plant. This cable is owned by Network Tasman and crosses the estuary south of the plant. Only having one cable is a risk to the ongoing supply of power to the plant. If the cable was to fail,

Network Tasman has indicated that it could take at least a week to reinstate the supply.

2.2 This risk to supply was initially identified during Engineering Lifelines studies in the region.

2.3 The NRSBU has had ongoing discussions with Network Tasman over some time. Network Tasman has investigated and concluded that a second cable is the most cost-effective way of providing greater security of supply (see Network Tasman Letter 23 August 2016 attached)

2.4 After considering several options, Network Tasman has confirmed that the most cost-effective solution is running an underground cable from the overhead supply on Best Island, along the golf course fairway adjacent to the treatment plant access road, under the estuary and along to the treatment plant. Network Tasman has secured easements along the proposed route.

2.5 The total cost of the project is estimated at $447,000. This is greater than what Network Tasman had budgeted for the work. It has consequently requested that NRSBU consider sharing the cost 50:50. This would require NRSBU funding $223,500 (plus GST).

2.6 Although Network Tasman are contracted to supply electricity, it has not guaranteed to provide a continuous supply 100% of the time. This is not unusual as events do occur that can interrupt supply which are beyond Network Tasman's control. This includes the current cable failing.

2.7 The key issue for the NRSBU is the impact of no electrical supply for what could potentially be up to a week and in some more extreme events more than a week. The impacts would not only be compromised wastewater treatment but potentially the associated adverse environmental impacts.

2.8 The NRSBU has considered the option of installing standby generation, however the power demands to keep the plant fully operational render this option not cost-effective. Installing sufficient standby generation to only operate parts of the plant could be viable, however this would require capital investment plus ongoing maintenance to keep generation functional.

2.9 This could be verified by undertaking a more detailed cost-benefit analysis of the various options. However given the complexity of reducing the operability of the plant with its associated risks, it is considered that an investment of $223,500 by the NRSBU in this backup supply is warranted.

2.10 Network Tasman has confirmed that the proposed cable will have around 20% greater capacity than the current supply cable. Although this is not of benefit to the NRSBU now, it could be of benefit if any future upgrade at the plant is required.

2.11 Network Tasman will still own the cable, and have indicated that it will be connected so that in the event of any power disruption caused by the current cable failing, the proposed cable can be operating without delay. This means that the NRSBU funding cannot be capitalised by attributing it to a specific asset, however it may be considered as capital given that it provides an improved management of risk. This will require further assessment and probably consultation with the contributors to determine the most appropriate funding mechanism.

2.12 In the meantime it is recommended that the NRSBU approve funding of 50% of the cost of installing the second cable up to a maximum of $223,500 (plus GST).

3. Bokashi Logic Proposal

3.1 At its meeting 24 June, the NRSBU was given an update on progress with this proposal.

3.2 Although the Bokashi Logic proposal outlined a trial process, it did not include any details on a testing regime to demonstrate how the biosolids are affected by the introduction of the additive. Specific sampling and laboratory testing would be required to validate the results and it was unclear from the proposal who would be responsible for this cost.

3.3 In proposing the trial, Bokashi Logic requested a financial contribution of $9,000 to run the trial over a period of approximately 100 days.

3.4 The NRSBU requested this additional detail and has received a response from Bokashi which has outlined a revised trail involving 8 x 1,000 litre water tanks. The NRSBU has met Bokashi on site and been briefed on the revised proposal. These trials and the liability of the proposed costs are still being finalised.

4. Pond Sludge Management

4.1 At its meeting 24th June, the NRSBU were briefed on a proposal from Gurney Environmental regarding the installation of Accel-o-Fac aerators in the ponds to reduce sludge production and volumes. The intention was to undertake more research to achieve more certainty around the cost-effectiveness of this proposal and associated investment.

4.2 The NRSBU has progressed the investigations and this included meeting with a wastewater specialist at Massey University who has seen the equipment in the UK. The NRSBU obtained some feedback and suggested a course of action for further investigations.

4.3 We had hoped to complete the investigations and the due diligence on this proposal and present these findings to this meeting. However we have not completed this and we hope to report at the next meeting of the NRSBU in December 2016.

5. Coastal Effects - Bell Island Wastewater Treatment Plant Discharge.

5.1 The NRSBU has commissioned the Cawthron Institute to undertake twice-yearly (summer and winter) shellfish monitoring surveys. These are to identify any potential bacteriological water quality issues at inner Tasman Bay sites in the vicinity of the Bell Island Wastewater Treatment Plant outfall.

5.2 The surveys, first implemented in April 2008 are carried out in accordance with conditions of consent for Coastal Permit NN925584 (Annex 2, Part B; revised July 2007).

5.3 The latest Cawthon Institute Report No. 2814, March 2016 (as attached A1517758) describes the results of the February (summer) 2015-16 survey. This report confirms that there is no evidence that the treatment plant discharge has a significant effect on bacteriological water quality at the inner Tasman Bay sites.

5.4 It should be noted that Cawthron Institute is currently working on the five yearly sea bed and seawater characteristics monitoring, and is expected to report back to the NRSBU on those results by the end of October 2016. The reports will include the assessment of the summer and winter monitoring work carried out since the last report in 2011.

5.5 Cawthron Institute are of the view that an update to the 2001 study of nutrient and bacterial input from streams around the Waimea Estuary would be very useful in interpreting the Bell Island monitoring data, given likely changes in land-use and land-management practices in the interim.

5.6 All this information will be collated and incorporated into the NRSBU application to renew the discharge consent in the next couple of years.

6. Discharge Consent Renewal

6.1 The discharge consent for the Bell Island Wastewater Treatment Plant expires on 7 February 2018. The consent comprises the discharge of treated wastewater to the Waimea Inlet, the discharge of treated wastewater to land at Bell Island and the discharges to air related to the wastewater treatment plant at Bell Island.

6.2 Significant data sets are now available on the performance of the treatment plant in terms of the effects of discharges from Bell Island. Analyses of the performance of the treatment plant suggest that the improvements have facilitated compliance with the objectives of the consent.

6.3 The NRSBU needs to engage appropriate expertise to develop the application based primarily around the renewal of the consent. Although the expertise needs to keep an open mind, there has been significant investment in considering and assessing alternative options. Therefore

the engaged expertise needs to comprise appropriate legal and technical skills to review the collated information and prepare the most appropriate application to renew the consent.

6.4 The project will need to be managed actively to consolidate the consent application for lodgement with the consent authority in early August 2017.

6.5 The estimated cost of preparing and submitting an application is around $200,000. This funding is included as part of the renewals funding in the Business Plan 2016/17 and the balance will be included in the Business Plan 2017/18.

6.6 An assessment of the expertise required has been undertaken and it is intended that the NRSBU progress with engaging the relevant expertise and initiate the preparation of the consent.

6.7 It is therefore recommended that the Joint Committee approve the preparation and submission of a resource consent application for the discharges from the Bell Island Wastewater Treatment Plant.

7. Trade Waste Agreement Amendments

7.1 Following consultation with contributor representatives the Agreement for Disposal of Trade Waste has been amended.

7.2 The amended Draft Agreement for Disposal of Trade Waste (Draft Agreement) was circulated to the contributor representatives, consulted on and then discussed at the contributor meeting held on 16 March 2016.

7.3 Changes to The Agreement were reported to the Board at the meeting on 24 June 2016 and discussed at the contributor meeting on 29 June 2016.

7.4 Following this meeting the Draft Agreement was circulated to contributor representatives on 30 July 2016 for consideration.

7.5 Although a meeting was scheduled for 15 July 2016 to discuss the proposed changes, all five contributor representatives indicated that there was no need to have the meeting. It is now proposed to present the revised agreements to the contributor representatives for final approval.

7.6 All the contributors other than the Nelson City Council have indicated that they are in agreement with the amendments. Should Nelson City Council not agree with the amendments, then retaining the current agreement with Nelson City Council will not have an impact on the activities of the NRSBU.

8. Valuations

8.1 The NRSBU had intended to complete a primary based valuation by the 30th June 2016. For various reasons this has not occurred. There are still

some complexities with the NRSBU data which has delayed the progress of the primary based valuation.

8.2 Whilst the 30 June 2016 primary valuation was being undertaken it became apparent that its accuracy and reliability required further breakdown of specific items in the valuation register.

8.3 The process of reconciling the redeveloped fixed asset register with the valuation register demonstrated that there continue to be gaps in both registers. Some significant items in the valuation register were not sufficiently detailed to allow for an accurate valuation. (Significant electrical and control equipment was found to be lumped together without a description of individual components.)

8.4 The process of reconciling the registers is resource intensive, reliant on experience and familiarity with the physical assets. The NRSBU is assessing how best to progress with this work cost-effectively.

8.5 Consequently the original deadline of 30 June 2016 was not met and therefore cannot be included in the financial statements of the owners, Nelson City Council and Tasman District Council.

8.6 It is likely to take at least 6 to 8 weeks to componentise and value the assets that have traditionally been grouped together. Then a further 4 to 8 weeks to validate and integrate these into the valuation and fixed asset registers.

8.7 The NRSBU will focus on completing the alignment of the fixed asset register and valuation register before completing the primary valuation. The intention is to complete the primary valuation prior to 30 June 2017 for reporting to both Councils.

9. Contract 3458 – Operation and Maintenance

9.1 The reticulation and treatment operations have continued as normal over the last few months. Discharge continues to meet consent conditions and sludge produced at the treatment plant complies with Class A biosolids quality.

9.2 Ponds have performed well. It is likely that load will be diverted away from the activated sludge area and into the ponds. This is to utilise the capacity of the ponds earlier than normal and will result in energy savings in the aeration basin.

Biosolids Pipeline Blowout

9.3 In August 2016 there was a blowout in the biosolids pipeline. The blowout was located on Bell Island near the road causeway.

9.4 It took some time and effort to repair the blowout and determine the cause. An investigation has indicated that potentially 90-100m3 of biosolids were discharged. Some of the discharge was contained and an unknown volume discharged into the estuary.

9.5 The cause was a blockage. Four cut-outs along the concrete line steel pipeline were required to clear the blockages. A condition assessment that included sampling at four points along the concrete lined steel pipe showed that the blow out occurred at a weak point along the line. The four cut outs were reinstated to allow access to the rising main to clear future blockages.

9.6 The investigation into the event revealed that improved monitoring controls would better manage future blockages as and when they occurred.

9.7 An automated process review is underway including the option of implementing an automated mass balance between the Bell Island sludge transfer flow meter and the Rabbit Island sludge discharge flow meter. A number of possible improvements are being considered however these are reliant on remote data monitoring. Previous studies have shown that the Rabbit Island activities cannot be easily integrated with the Bell Island SCADA systems due to the significant cost associated with the construction of a suitable aerial to establish radio linkages.

9.8 The costs of the improvement works on biosolids pipeline have not been budgeted. It is therefore recommended that these be funded from the savings in the capital budget in the 2016/2017 Business Plan allocated to installing curtains ion the oxidation ponds.

Songer Street Pumpstation Blockages

9.9 Investigations into recent pump blockages at the Songer street pump station have demonstrated that the problems experienced at this pump station is associated with the recent express sewer bypass installed by Nelson City Council (NCC).

9.10 NCC is now working with its contractors, trade waste officers and asset engineers to develop strategies to improve the management of the bypass. This work includes investigating the source of the material causing the blockages. Public education aimed at awareness of the effects of disposing material such as sanitary wipes and rubber gloves on the sewerage network.

9.11 NCC is also designing and installing screening equipment on the bypass.

9.12 Nelmac is now aware of potential blockages associated with increased flow along the pipeline following heavy rain events and intend to be more proactive when issues develop at the pump station.

Biosolids Volume Increase

9.13 Work is underway to investigate if there is a link between the 2010 upgrade and the increase in biosolids volumes at the treatment plant.

9.14 Trends suggest that biosolids volumes have doubled following the upgrade. A theory that organic matter is more effectively reduced in the

activated sludge area compared to the removal of primary sludge before the loads enters the activated sludge area is being investigated.

10. Contract 3619 – Biosolids Operation

10.1 The monthly average volume of biosolids sprayed over the last few months have stayed at higher levels and is expected to start tapering down once load is diverted to the ponds.

11. Key Performance Indicators

11.1 The outcomes of key performance indicators for the 3 month period to 31 July 2016.

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
			Note 1
Environmental: Pipeline			
Reticulation breaks	Air valve malfunction		
Note 2			
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	

Note 1: An overflow occurred at the Songer Street pump station when pumps became partially blocked during a rain event on 22 June 2016. Following an investigation, NCC has formed the view that the problem is associated with

the management of the express sewer bypass constructed by NCC. NCC has now put processes in place to improve the management of the bypass that includes an investigation into the construction of a screening facility on the express bypass.

Note 2: An overflow of treated biosolids (Estimated 98m^3) occurred following a blow out on the concrete lined steel biosolids transfer pipeline on 19 June 2016. Some of the overflow was contained and an unknown quantity flowed into the Waimea Estuary. (Less than 98m^3). The issue was investigated and mitigation measure are being put in place.

12. Compliance Outcomes

12.1 The compliance outcomes for the 12 months to 31 July 2016 are outlined in the following table:

i)	**Resource Consent Compliance (rolling 12 month record)**	
	➢ Discharge to Estuary Permit	Achieved.
	➢ Accidental discharges (Consent for accidental discharges within Nelson City Council area is being sought at present)	Overflows occurred at the Beach Road, Saxton Road and Songer Street pump station during the heavy rain event on 24 March 2016. The rainfall event is the second highest rainfall recorded over a 24 hour period recorded for Nelson since January 2000. An overflow occurred at the Songer Street during wet weather conditions when both storm pumps blocked on 22 June 2016. Biosolids overflow to land and the Waimea estuary following a blow out on biosolids transfer pipeline on 19 and 20 July 2016.
	➢ 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	Two.
	➢ Last 12 months	Five.
iv)	**Speed of response for maintenance works**	
	In past three months: ➢ Seven call outs were associated with treatment plant issues. • DAF Poly auger – 2 events	

	• Gravity belt thickener – 3 events • Primary Clarifier sludge transfer over pressure. • ATAD: Foam cutter fault. ➢ Four call outs recorded for pump station. • Airport – power failure. • Songer Street – 3 events – related to pump blockages. (Including response for overflow during the 22 June 2016 heavy rain event)
	➢ Response within 30 minutes. Achieved.

13. Review of Action Plan Implementation – 2014 Asset Management Plan and 2015/16 Business Plan

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.	Oct 2016		Delayed. Work now programmed for completion by Nelmac in September/October 2016.
2	Consolidate all natural disaster information and review 3 yearly.	Mar 2018		Work will be carried out as part of next asset management review.
3	Internal benchmarking carried out annually.	Jun 2016	Aug 2016	Carried out as part of annual report.
4	Review risk of contributors leaving NRSBU.	Jun 2016	Dec 2015	Completed.
5	Review capacity of treatment components.	Mar 2017		Expect treatment plant model to be in place in March 2017. Following assessment of S::can results.
6	Programme for pipe inspections.	Oct 2016		Included in annual review of Operation and Maintenance Plan.
7	Annual review of contractor performance.	Dec 2016	Jun 2016	Completed.
8	Screen upgrade.	Dec 2016		Variation issued to Nelmac to manage the duplication of the screen.
9	Review secondary sludge separation.	Dec 2016		Depends on completion of treatment plant model.
10	Construction second sludge storage tank.	Jun 2017		Delayed from June 2016.

IP	Business Plan Action	Target Date	Completion Date	Comments
11	Develop sludge removal programme.	Jun 2017		Business case developed. Options identified. Report on option 2 included in this report.
12	Review effluent discharge management.	Mar 2016	Jan 2016	Competed.
13	Renewal of effluent discharge permit	Dec 2018		

AP	AMP Action	Target Date	Completion Date	Comments
1	Annual customer survey.	Mar 2016	Apr 2016	Completed.
2	Business Continuity Plan review.	Jun 2016	Jun 2016	Completed.
3	Consider benefits of succession planning and how it might be implemented once governance issues (TDC and NCC) have been resolved.	Jun 2016	June 2016	Completed.
4	Review of security required at all facilities.	Mar 2016	May 2016	Formed part of 6 monthly Safety Audit.
5	Monitor sludge levels in ponds and ascertain long term removal and disposal requirements.	Mar 2016	Feb 2006	Completed.
6	Improve reporting requirements for asset condition, performance and maintenance from maintenance contractor.	Mar 2016	Apr 2016	Completed.
7	Implementation of internal bench marking (using historical data) of NRSBU network, pump stations, treatment and disposal facilities.	Jun 2016		Delayed until 2017.
8	Develop Demand Management Policy.	Jun 2016	Jun 2016	Completed.

14. Health and Safety

14.1 There have been 3 inductions and 146 visitors to the Bell Island Wastewater Treatment Plant over the past three months.

14.2 Two near miss observations and one injury were reported during the last three months.

14.2.1 Unsafe work observation at Gravity belt Thickener – Operators instructed to use specialised tool when cleaning debris from moving belt or to stop belt before attending to the belt.

14.2.2 Operators instructed to use portable barriers at Songer street pump station when attending to the wet well to ensure that people and pets do not affect operations.

14.2.3 Operator pinched finger when lifting a chamber lid.

14.3 Variation approved for work to address slippery work surface conditions along the oxidation ponds wavebands when servicing automated dissolved oxygen monitoring equipment.

15. Financial

15.1 The expenditure for the first two months is generally tracking below budget.

15.2 The draft Annual Report 2015/16 is appended as a separate report.

15.3 The costs incurred repairing the blow out on the biosolids transfer pipeline are still to be assessed. They are likely to be reasonably significant.

Richard Kirby
Consulting Engineer

Attachments

Attachment 1: Coastal Effect of the Bell Island Regional Sewerage Discharge: February 2016 Mussel Monitoring Survey A1517758

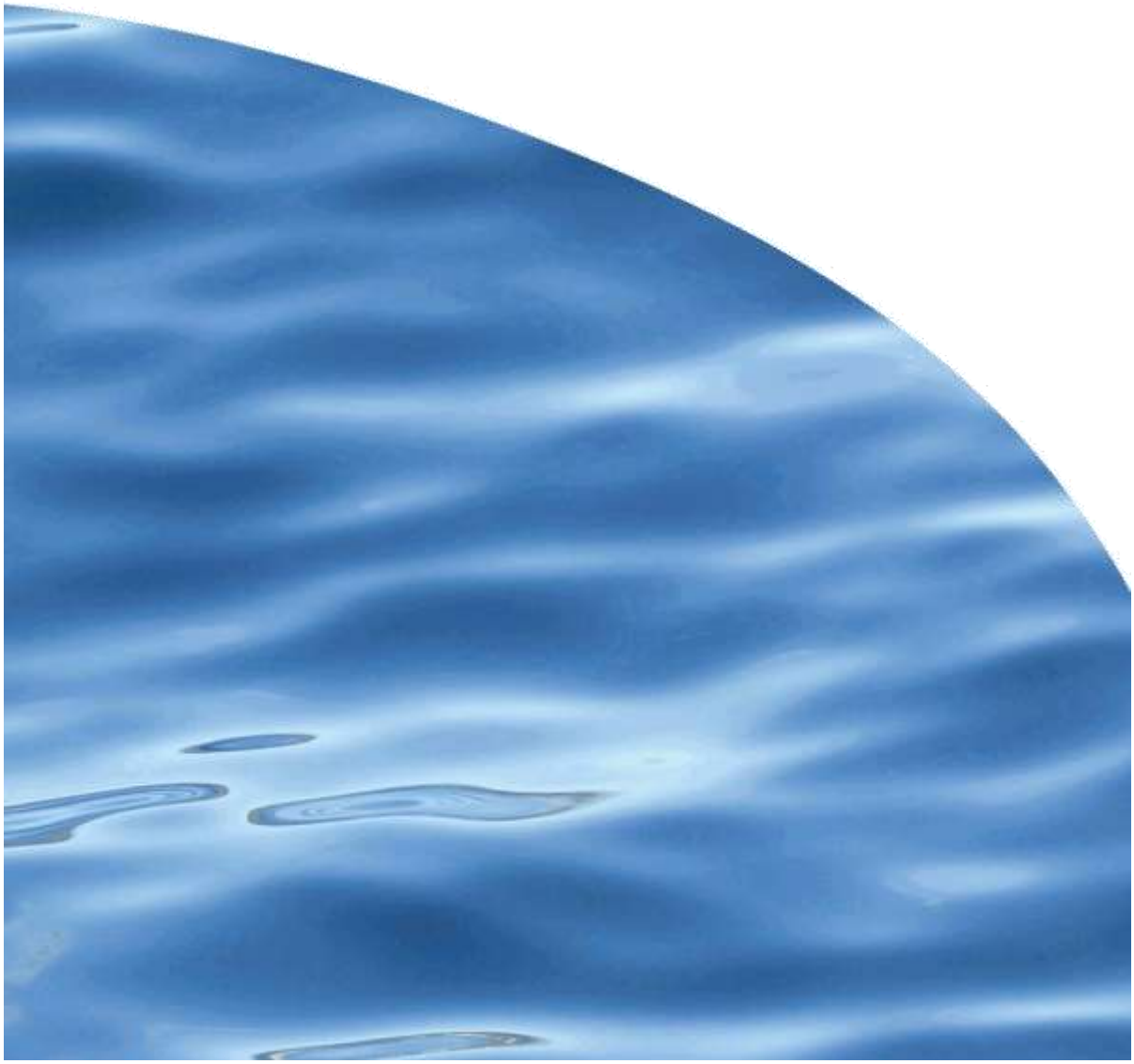
Attachment 2: NRSBU Status Report 16 September 2016 A1617464

Attachment 3: Bell Island Sewerage Facility Electricity Supply A1618644

CAWTHRON INSTITUTE

REPORT NO. 2814

COASTAL EFFECTS OF THE BELL ISLAND REGIONAL SEWERAGE DISCHARGE: FEBRUARY 2016 MUSSEL MONITORING SURVEY



COASTAL EFFECTS OF THE BELL ISLAND REGIONAL SEWERAGE DISCHARGE: FEBRUARY 2016 MUSSEL MONITORING SURVEY

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Prepared for Nelson Regional Sewerage Business Unit

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1. BACKGROUND

Cawthron Institute (Cawthron) has been commissioned by the Nelson Regional Sewerage Business Unit (NRSBU) to undertake twice-yearly (summer and winter) shellfish monitoring surveys. These are to identify any potential bacteriological water quality issues at inner Tasman Bay sites in the vicinity of the Bell Island regional sewerage outfall. The surveys, first implemented in April 2008, are carried out in accordance with conditions of consent for Coastal Permit NN925584 (Annex 2, Part B; revised July 2007). The present report describes the results of the February (summer) 2015–2016 survey.

2. METHODS

2.1. Mussel deployment and analyses

Farmed green-lipped mussels (*Perna canaliculus*) were sourced from Guytons seafood shop, Wakefield Quay, Nelson on 10 February 2016. Fifteen mussels were retained for analysis of faecal indicator bacteria (FIB) concentrations in the mussel flesh. The remaining mussels were placed in plastic, open-mesh baskets (15 mussels per basket) for experimental deployment at approximately 09:00 on the same day. All mussels were measured (to the nearest cm) and kept chilled until deployment (within 3 hours of purchase). The mussels retained for analysis were handled in the same way as the deployed mussels and were returned to the laboratory within 4 h of purchase.

The baskets were suspended from a surface float at approximately mid-water depths above an anchor point at sites 18, 19, 21 and 22 (Figure 1). The mussels were retrieved on 15 February 2016 and kept chilled until returned to the laboratory for analysis (within 2 hours of collection). No significant rainfall occurred in the Waimea River catchment during the five days prior to retrieval[1].

Site locations and water depths at the time of deployment and retrieval are shown in Table 1. Water depths were 2.0–2.9 m shallower at retrieval due to the different tidal state[2]. Deployment coincided with the peak of spring tides (predicted height of 4.5 m on 10 February).

[1] For rainfall data see http://www.tasman.govt.nz/environment/water/rainfall/

[2] Predicted tidal heights and times may be viewed through the following web site: http://www.linz.govt.nz/docs/hydro/tidal-info/tide-tables/maj-ports/pdf/Nelson%202015.pdf

Table 1. Locations (New Zealand Map Grid), water depths and times of deployment and retrieval at each of the monitoring sites. Times are NZST.

			Deployment (high tide 11:59)		Retrieval (high tide 15:52)	
	Easting	Northing	Water depth (m)	Time	Water depth (m)	Time
Site 18	2527875	5994283	5.2	09:05	3.2	10:29
Site 19	2527841	5993263	8.1	08:48	6.1	10:06
Site 21	2520686	5996674	8.3	09:52	5.4	09:40
Site 22	2521371	5997460	9.3	09:34	6.7	09:30

Mussel samples collected during deployment and retrieval were put into plastic bags, chilled and returned to the laboratory for analyses of FIB (faecal coliforms, *Escherichia coli* and presumptive enterococci) concentrations. Analyses were carried out within 24 hours of collection according to procedures defined in Appendix 1.

2.2. Seawater sampling and analyses

Surface seawater samples (100 ml) were hand collected at each site and stored in sterile containers during the deployment and retrieval of mussels. Samples were stored on ice, refrigerated and analysed for FIB concentrations within 24 hours of collection.

At the time of retrieval, two additional seawater samples (one preserved with Lugol's iodine and one unpreserved) were collected at each site to determine the type and abundance of phytoplankton species.

Vertical water-column profiles of salinity, temperature, light (photosynthetically active radiation; PAR), turbidity, chlorophyll-*a* and dissolved oxygen (DO) concentrations were measured *in situ* at each site on both sampling occasions using a Seabird Electronics (Seacat SBE-19 Plus) profiler.

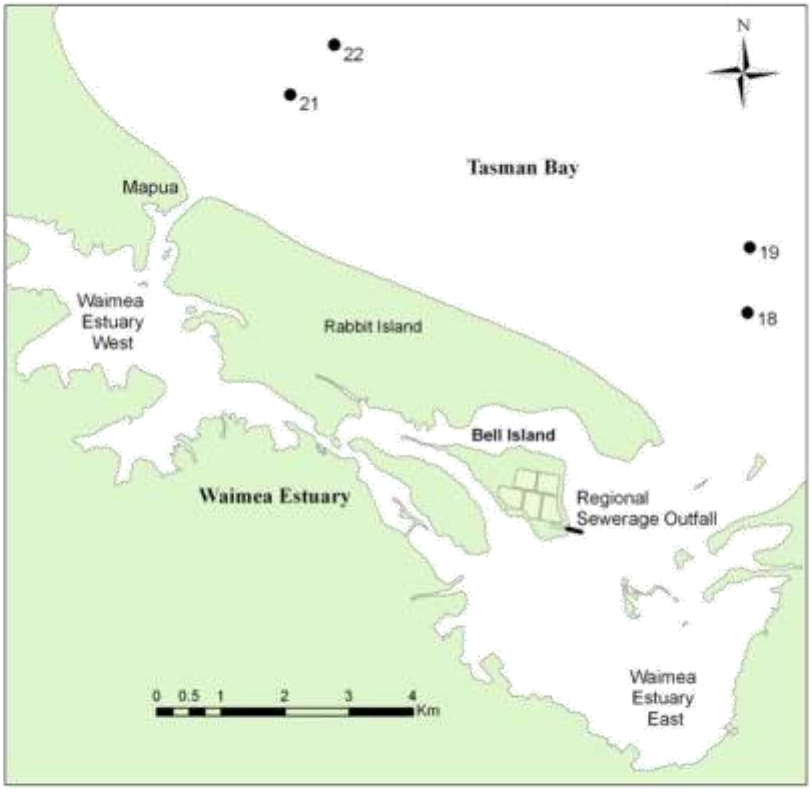

Figure 1. Mussel monitoring sites in inner Tasman Bay.

3. RESULTS

3.1. Faecal indicator bacteria

Concentrations of FIB in mussel flesh and water samples at the times of deployment and retrieval are shown in Tables 2–4 (and see Appendix 2).

Table 2. Faecal indicator bacteria concentrations (MPN / 100 g) in mussel flesh during deployment (10 February 2016) and retrieval (15 February 2016) of mussels. The sizes of mussels (mean ±SE) are also shown.

	Deployment	Retrieval			
		Site 18	Site 19	Site 21	Site 22
Faecal coliforms	490	790	<20	<20	<20
E. coli	490	790	<20	<20	<20
Enterococci	20	270	<20	<20	20
Mussel size (cm)	8.9 (0.14)	8.8 (0.14)	8.7 (0.12)	8.5 (0.18)	8.6 (0.15)

Table 3. Faecal indicator bacteria concentrations in seawater (MPN / 100 ml) collected during deployment of mussels (10 February 2016).

Test	Site 18	Site 19	Site 21	Site 22
Faecal coliforms	<2	<2	<2	<2
E. coli	<2	<2	<2	<2
Enterococci	<10	<10	<10	<10

Table 4. Faecal indicator bacteria concentrations in seawater (MPN / 100 ml) collected during retrieval of mussels (15 February 206).

Test	Site 18	Site 19	Site 21	Site 22
Faecal coliforms	<2	<2	<2	<2
E. coli	<2	<2	<2	<2
Enterococci	<10	<10	<10	<10

3.2. Phytoplankton

Results of phytoplankton analyses for seawater samples collected during mussel retrieval (15 February 2016) are provided in Appendix 2.

3.3. Water column characteristics

Vertical distributions of salinity, temperature, chlorophyll-a, PAR, turbidity and DO at each site are shown in Figures 2 and 3.

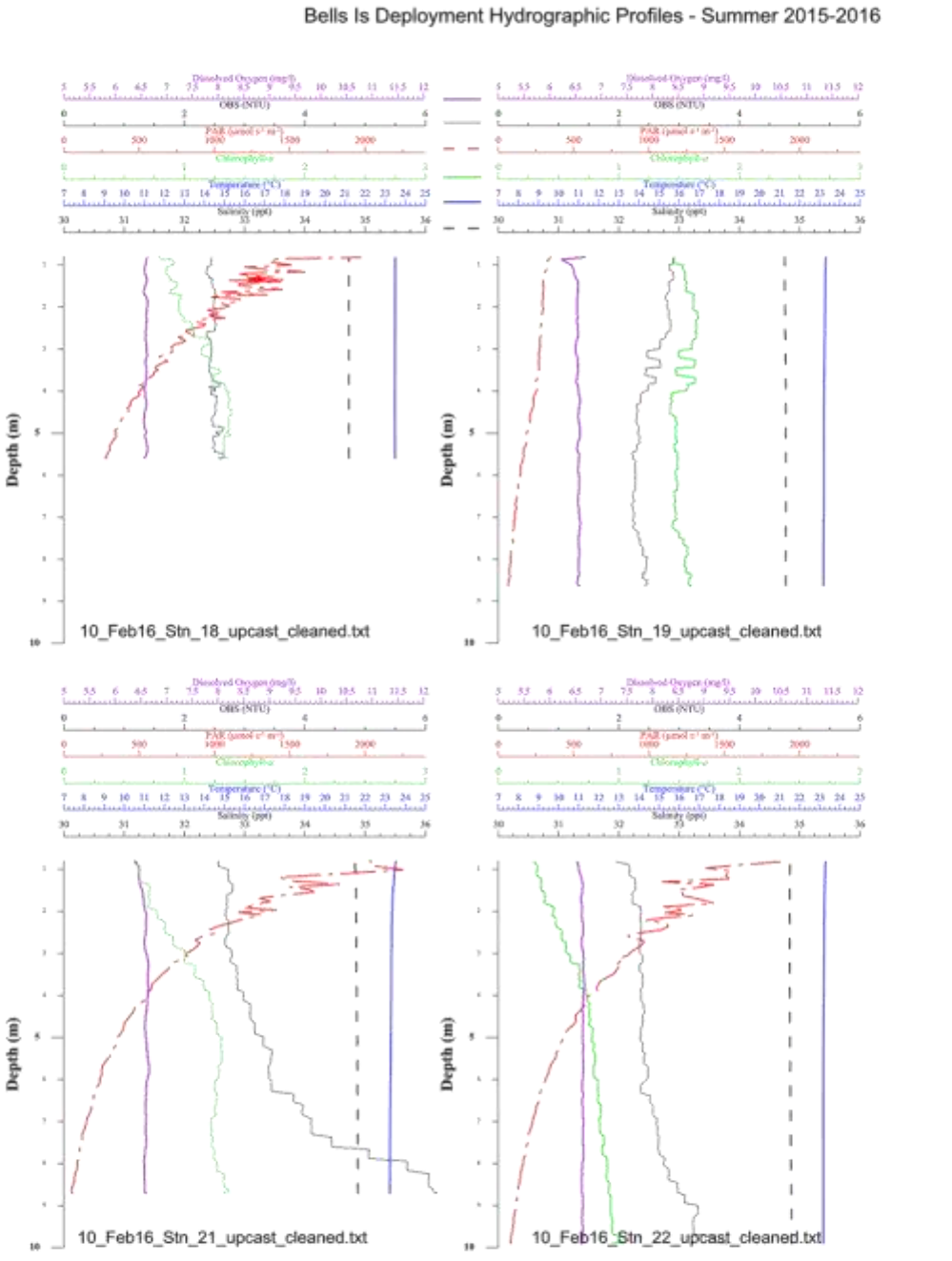

Figure 2. Water column characteristics at the time of mussel deployment (10 February 2016).

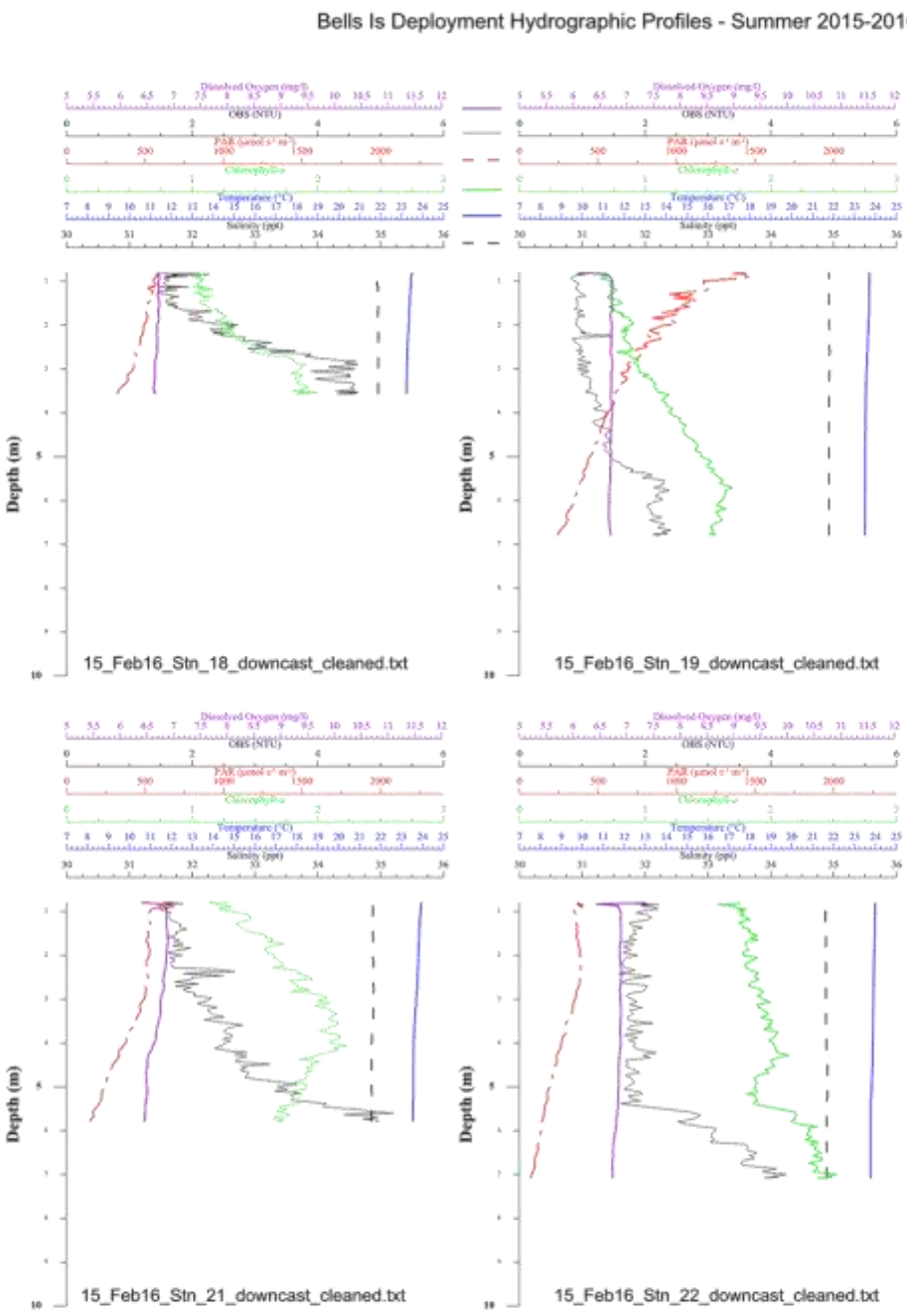

Figure 3. Water column characteristics at the time of mussel retrieval (15 February 2016).

4. BRIEF COMMENT

The water column was well mixed at all sites and at both times of sampling, as indicated by the uniform temperature and salinity profiles (Figure 2 and Figure 3). Temperature was unusually high at the times of sampling (23–24 °C, cf. 20–21 °C in February 2015). Increasing turbidity with depth suggests that resuspension of sediments was occurring at Site 21 at the time of deployment and all sites at the time of recovery. This is also reflected in elevated concentrations of chlorophyll-*a* above the seabed, probably representing resuspended benthic microalgae, at corresponding sites and times. Chlorophyll-*a* concentrations in the overlying water were not unusually high (< 2 mg/m^3 at the time of deployment and < 3 mg/m^3 at the time of recovery). Dissolved oxygen concentrations declined very slightly with depth at sites 21 and 22 at the time of recovery. Concentrations were slightly lower than the range of values recorded in previous summer surveys but this is likely to reflect higher water temperatures. Values for percentage saturation were 81–97% at Site 18, 81–97% at Site 19, 81–100% at Site 21 and 82–100% at Site 22.

At the time of deployment, concentrations of faecal coliforms (specifically *E. coli*) were elevated in the composite sample of mussel flesh (490 MPN/100 g), while concentrations of enterococci were only slightly elevated (20 MPN/100 g). At the time of retrieval, concentrations of both faecal coliforms and enterococci in mussel flesh were at or below the methodological limit of detection (LOD) at Sites 19, 21 and 22 (Table 2), suggesting efficient depuration during the deployment period. Concentrations of faecal coliforms (specifically *E. coli*, 790 MPN/100 g) and enterococci (270 MPN/100 g) were elevated in the sample from Site 18 relative to other sites.

Concentrations of faecal coliforms in the mussels at the time of deployment exceeded the Ministry of Health (1995[3]) guidelines for shellfish. These state that concentrations up to 230 MPN/100 g are acceptable, with up to two samples from the same batch (site) allowed to exceed this value. However, if a single sample exceeds 330 MPN/100g the entire batch is considered to be non-compliant.

Concentrations of FIB in seawater samples collected at the time of deployment (Table 3) and at the time of retrieval (Table 4) were below LOD at all sites (i.e., ≤ 2 MPN/100 ml for faecal coliforms and *E. coli* and < 10 MPN/100 m for enterococci). These low concentrations suggest that discharge of FIB into the near-shore coastal environment from drainage catchments was minimal during the deployment period. There was no detectable contribution from the Bells Island wastewater outfall. The die-off rate of FIB would be expected increase at high seawater temperatures and

[3] Ministry of Health 1995. Microbiological reference criteria for food. Available at: http://www.foodsafety.govt.nz/elibrary/industry/Microbiological_Reference-Guide_Assess.pdf, accessed 9 March 2016.

high summer light intensities (i.e., the period of time they remain viable in the coastal environment would be reduced). According to formulae provided by Wilkinson et al. (2011[4]), for a given light intensity, the hourly die-off rate at 20 °C is approximately twice as fast as that at 10 °C.

The elevated concentrations of FIB in mussels at Site 18 could potentially derive from the WWTP but this is not reflected in the concentration present in seawater at this site. However, this does not rule out the possibility of a short-term spike (or spikes) in the concentrations of FIB in seawater arising from the WWTP during the deployment period. Possible alternative sources are small streams discharging into the eastern arm of the Waimea Estuary, some of which drain agricultural and residential areas. Deployment occurred during a period of spring tides, which may have resulted in flushing of relatively large areas of the intertidal margins of the area at high tide. Conversely, particularly low spring tides may have increased resuspension of bottom sediments and this may also have contributed FIB to the water column. The Council's freshwater monitoring data may help identify the source, but this is beyond the scope of the present report.

Phytoplankton analyses of seawater samples collected during retrieval of mussels (Appendix 2) revealed lower diversity (13–23 taxa per site) and abundances compared to the previous summer survey. Low diversity and abundance are likely due to the most recent survey coinciding with a period of low rainfall and consequent nutrient limitation in Tasman Bay. Diversity was highest at Site 21 (23 taxa) and lowest at Site 18 (13 taxa).

Abundances of *Pseudo-nitzschia* spp., which can be toxic in shellfish, exceeded the trigger values that may potentially cause toxic events (by a factor of 15–16 times at Sites 18 and 19 and 33–36 times at Sites 21 and 22). The potential risk of these abundances is ranked as very high, but further investigation (ideally including a DNA probe) would be required to provide a more exact risk assessment. Two other potentially toxigenic taxa, *Karenia* cf. *mikimotoi* (Site 21, toxic in shellfish) and *Chrysochromulina* spp. (sites 19 and 21, ichthyotoxic), were present at abundances considered to represent low risk. There is no suggestion that the phytoplankton community structure is influenced by the WWTP discharge.

[4] Wilkinson RJ, McKergow LA, Davies-Colley RJ, Young RG 2011. Modelling storm-event *E. coli* pulses from the Motueka and Sherry Rivers in the South Island, New Zealand. New Zealand Journal of Marine & Freshwater Research 45 (3): 369-393.

5. ACKNOWLEDGEMENTS

Thanks to Paul Meredith for help with the field work and Marc Jary for downloading CTD data.

6. APPENDICES

Appendix 1. Laboratory microbiological and phytoplankton analytical procedures.

Sample type	Analysis	Method
Mussels	Faecal coliforms	Compendium 4th edition 2001
	E. coli	Compendium 4th edition 2001
	Enterococci	Compendium 4th edition 2001
Sea water	Faecal coliforms	APHA (online) 9221E
	E. coli	APHA (online) 9221F
	Enterococci	APHA (online) 9230D
	Phytoplankton abundance and composition	In-house, based on UNESCO 1978 and IOC Manual and Guides 55 2010

Appendix 2. Laboratory reports.

2.1 Microbiological report for water and mussel samples collected 10 February 2016.

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Cawthron Analytical Services:
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Certificate of Analysis: Final **Cawthron Contract Number:** 10210

Project Number: T65684

Cawthron Institute
Private Bag 2
NELSON

Attention: Don Morrisey

Customer Order No: BST#16088
Customer Ref: Bells Island Monitoring - Summer
Email Recipients: Don Morrisey, Emma Newcombe
Date Project Started: 10/02/2016 15:36

Sample Details
Laboratory ID: T65684-1 **Sample Type:** Water **Date Sampled:** 10/02/2016
Description: Bells Island Station 18 **Date Received:** 10/02/2016 13:15

Analysis	Result	Units	Method
Presumptive coliforms	<2	MPN/100mL	APHA (online) 9221B
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details
Laboratory ID: T65684-2 **Sample Type:** Water **Date Sampled:** 10/02/2016
Description: Bells Island Station 19 **Date Received:** 10/02/2016 13:15

Analysis	Result	Units	Method
Presumptive coliforms	<2	MPN/100mL	APHA (online) 9221B
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details
Laboratory ID: T65684-3 **Sample Type:** Water **Date Sampled:** 10/02/2016
Description: Bells Island Station 21 **Date Received:** 10/02/2016 13:15

Analysis	Result	Units	Method
Presumptive coliforms	<2	MPN/100mL	APHA (online) 9221B
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Report Number: 608704
Project Number: T65684
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Sample Details

Laboratory ID: T65684-4 **Sample Type:** Water **Date Sampled:** 10/02/2016
Description: Bells Island Station 22 **Date Received:** 10/02/2016 13:15

Analysis	Result	Units	Method
Presumptive coliforms	<2	MPN/100mL	APHA (online) 9221B
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details

Laboratory ID: T65684-5 **Sample Type:** Wholeshell Mussels **Date Sampled:** 10/02/2016
Description: Deployment Sample **Date Received:** 10/02/2016 13:15

Analysis	Result	Units	Method
Presumptive coliforms	790	MPN/100g	Compendium 4th Edn 2001
Faecal coliforms	490	MPN/100g	Compendium 4th Edn 2001
E.coli	490	MPN/100g	Compendium 4th Edn 2001
Presumptive Enterococci	20	MPN/g	Compendium 4th Edn 2001

Results apply to samples as received

Our routine detection limits for chemical testing relate to samples with a clean matrix.
Reported detection limits may be higher for individual samples if there is insufficient sample or the matrix is complex.

< means less than, > means greater than

Date Generated: 14/2/16

Authorised by: Pamela Curtis
Position: Senior Technician, Microbiology Laboratory
Signature:

Report Number: 608704
Project Number: T65684
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2.2 Microbiological report for water and mussel samples collected 15 February 2016.

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Certificate of Analysis: Final **Cawthron Contract Number:** 10210

Project Number: T65909

Cawthron Institute
Private Bag 2
NELSON

Attention: Don Morrisey

Customer Order No: 16088
Customer Ref: Bells Island Monitoring - Summer
Email Recipients: Don Morrisey, Emma Newcombe
Date Project Started: 15/02/2016 13:39

Sample Details
Laboratory ID: T65909-1 **Sample Type:** Water **Date Sampled:** 15/02/2016 10:29
Description: Bells Island Station 18 **Date Received:** 15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details
Laboratory ID: T65909-2 **Sample Type:** Water **Date Sampled:** 15/02/2016 10:06
Description: Bells Island Station 19 **Date Received:** 15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details
Laboratory ID: T65909-3 **Sample Type:** Water **Date Sampled:** 15/02/2016 09:45
Description: Bells Island Station 21 **Date Received:** 15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

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Project Number: T65909
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Sample Details

Laboratory ID:	T65909-4	**Sample Type:**	Water	**Date Sampled:**	15/02/2016 09:30
Description:	Bells Island Station 22			**Date Received:**	15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<2	MPN/100mL	APHA (online) 9221E
E.coli	<2	MPN/100mL	APHA (online) 9221F
Enterococci	<10	MPN/100mL	APHA (online) 9230D

Sample Details

Laboratory ID:	T65909-5	**Sample Type:**	Wholeshell Mussels	**Date Sampled:**	15/02/2016 10:29
Description:	Bells Island Station 18			**Date Received:**	15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	790	MPN/100g	Compendium 4th Edn 2001
E.coli	790	MPN/100g	Compendium 4th Edn 2001
Presumptive *Enterococci*	270	MPN/100g	Compendium 4th Edn 2001

Sample Details

Laboratory ID:	T65909-6	**Sample Type:**	Wholeshell Mussels	**Date Sampled:**	15/02/2016 10:06
Description:	Bells Island Station 19			**Date Received:**	15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<20	MPN/100g	Compendium 4th Edn 2001
E.coli	<20	MPN/100g	Compendium 4th Edn 2001
Enterococci	<20	MPN/100g	Compendium 4th Edn 2001

Sample Details

Laboratory ID:	T65909-7	**Sample Type:**	Wholeshell Mussels	**Date Sampled:**	15/02/2016 09:45
Description:	Bells Island Station 21			**Date Received:**	15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<20	MPN/100g	Compendium 4th Edn 2001
E.coli	<20	MPN/100g	Compendium 4th Edn 2001
Enterococci	<20	MPN/100g	Compendium 4th Edn 2001

Sample Details

Laboratory ID:	T65909-8	**Sample Type:**	Wholeshell Mussels	**Date Sampled:**	15/02/2016 09:30
Description:	Bells Island Station 22			**Date Received:**	15/02/2016 12:30

Analysis	Result	Units	Method
Faecal coliforms	<20	MPN/100g	Compendium 4th Edn 2001
E.coli	<20	MPN/100g	Compendium 4th Edn 2001
Presumptive *Enterococci*	20	MPN/100g	Compendium 4th Edn 2001

Results apply to samples as received

Our routine detection limits for chemical testing relate to samples with a clean matrix.
Reported detection limits may be higher for individual samples if there is insufficient sample or the matrix is complex.

< means less than, > means greater than

Date Generated: 18/2/16

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Position: Senior Technician, Microbiology Laboratory
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2.3 Phytoplankton species abundances for samples collected 15 February 2016.

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Cawthron Analytical Services:
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Certificate of Analysis: Final **Cawthron Contract Number:** 11699

Project Number: T65968

Cawthron Internal
Accounts Department
Internal invoicing

Customer Order No: BST#16088
Customer Ref: Bells Island Monitoring - Summer

Sample Details
Laboratory ID: T65968-1 **Sample Type:** Grab **Date Sampled:** 15/02/2016 10:29
Description: Bell Island Station 18 **Date Received:** 16/02/2016 12:30
Site Description PU01 - Phyto Site Unspecified
Sample Comment: Bell Island Station 18

Species	Description	Count (cells/L)	Trigger (cells/L)	Risk	Action
Biomass : Low					
TRIGGER BREACHES					
Pseudo-nitzschia spp.	**Toxic in Shellfish**	**1530000**	100000	Very High	DNA probe or Fleish test
OTHER RESULTS					
Chaetoceros spp.	Other Dominant Species	5200			
Ciliate (unidentified)	Other Dominant Species	400			
Euglenoid spp.	Other Dominant Species	400			
Gonyaulax spp.	Other Dominant Species	200			
Guinardia spp.	Other Dominant Species	800			
Gymnodinium spp.	Other Dominant Species	200			
Gyrodinium spp.	Other Dominant Species	200			
Nitzschia spp.	Other Dominant Species	400			
Prorocentrum spp.	Other Dominant Species	200			
Scrippsiella spp.	Other Dominant Species	800			
Small Flagellates	Other Dominant Species	600			
Mesodinium rubrum	**Non-toxic bloom forming spp.**	**200**		Low	

Method: In house, based on UNESCO 1978 and IOC Manual and Guides 55 2010

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Sample Details

Laboratory ID: T65968.2 **Sample Type:** Grab **Date Sampled:** 15/02/2016 10:06
Description: Bell Island Station 19 **Date Received:** 16/02/2016 12:30
Site Description PU01 - Phyto Site Unspecified
Sample Comment: Bell Island Station 19

Species	Description	Count (cells/L)	Trigger (cells/L)	Risk	Action
Biomass : Low					
TRIGGER BREACHES					
Pseudo-nitzschia spp.	**Toxic in Shellfish**	**1609000**	100000	Very High	DNA probe or Flash test
OTHER RESULTS					
Chrysochromulina spp.	**Ichthyotoxic Species**	**200**		Low	
Chaetoceros spp.	Other Dominant Species	1400			
Ciliate (unidentified)	Other Dominant Species	7000			
Cryptomonade	Other Dominant Species	2200			
Gonyaulax spp.	Other Dominant Species	4200			
Gymnodinium spp.	Other Dominant Species	1600			
Gyrodinium spp.	Other Dominant Species	200			
Hemiaulus spp.	Other Dominant Species	600			
Heterocapsa spp.	Other Dominant Species	200			
Navicula spp.	Other Dominant Species	200			
Nitzschia spp.	Other Dominant Species	2200			
Oxytoxum spp.	Other Dominant Species	200			
Peridinium spp.	Other Dominant Species	600			
Pleurosigma spp.	Other Dominant Species	800			
Prorocentrum spp.	Other Dominant Species	400			
Protoperidinium spp.	Other dominant species	1000			
Skeletonema spp.	Other Dominant Species	1200			
Small Flagellates	Other Dominant Species	5800			

Method: In-house, based on UNESCO 1978 and IOC Manual and Guides 55 2010

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Sample Details

Laboratory ID: T85968-3 **Sample Type:** Grab **Date Sampled:** 15/02/2016 09:45
Description: Bell Island Station 21 **Date Received:** 16/02/2016 13:30
Site Description: PUD1 - Phyto Site Unspecified
Sample Comment: Bell Island Station 21

Species	Description	Count (cells/L)	Trigger (cells/L)	Risk	Action
Biomass : Low					
TRIGGER BREACHES					
Pseudo-nitzschia spp.	**Toxic in Shellfish**	**3374000**	100000	Very High	DNA probe or Flash test
OTHER RESULTS					
Karenia cf. mikimotoi	**Toxic to Shellfish**	**200**	250000	Low	
Chrysochromulina spp.	**Ichthyotoxic Species**	**200**		Low	
Bacteriastrum spp.	Other Dominant Species	600			
Chaetoceros spp.	Other Dominant Species	5200			
Ciliate (unidentified)	Other Dominant Species	5600			
Cryptomonads	Other Dominant Species	1200			
Diploneis spp.	Other Dominant Species	200			
Entomoneis spp.	Other Dominant Species	200			
Euglenoid spp.	Other Dominant Species	400			
Gonyaulax spp.	Other Dominant Species	600			
Guinardia spp.	Other Dominant Species	400			
Gymnodinium spp.	Other Dominant Species	1200			
Gyrodinium spp.	Other Dominant Species	600			
Heterocapsa spp.	Other Dominant Species	200			
Navicula spp.	Other Dominant Species	400			
Nitzschia spp.	Other Dominant Species	1800			
Oxytoxum spp.	Other Dominant Species	200			
Peridinium spp.	Other Dominant Species	200			
Pleurosigma spp.	Other Dominant Species	200			
Protoperidinium spp.	Other dominant species	200			
Small Flagellates	Other Dominant Species	4400			
Thalassiosira spp.	Other Dominant Species	600			

Method: In-house, based on UNESCO 1978 and IOC Manual and Guides 55 2010

IANZ ACCREDITED LABORATORY

Raport Number: 609379
Project Number: T85968
V18.20
SL-P

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Sample Details

Laboratory ID: T65968-4 **Sample Type:** Grab **Date Sampled:** 15/02/2016 09:30
Description: Bell Island Station 22 **Date Received:** 16/02/2016 12:30
Site Description PU01 - Phyto Site Unspecified
Sample Comment: Bell Island Station 22

Species	Description	Count (cells/L)	Trigger (cells/L)	Risk	Action
Biomass : Low					
TRIGGER BREACHES					
Pseudo-nitzschia spp.	**Toxic in Shellfish**	**3647000**	100000	Very High	DNA probe or Flash test
OTHER RESULTS					
Ceratium spp.	Other Dominant Species	200			
Chaetoceros spp.	Other Dominant Species	1400			
Ciliate (unidentified)	Other Dominant Species	5800			
Cochlodinium spp.	Other Dominant Species	200			
Cryptomonads	Other Dominant Species	1600			
Diplonels spp.	Other Dominant Species	200			
Entomoneis spp.	Other Dominant Species	200			
Gonyaulax spp.	Other Dominant Species	1400			
Guinardia spp.	Other Dominant Species	400			
Gymnodinium spp.	Other Dominant Species	2600			
Navicula spp.	Other Dominant Species	200			
Nitzschia spp.	Other Dominant Species	5200			
Oxytoxum spp.	Other Dominant Species	200			
Peridinium spp.	Other Dominant Species	400			
Pleurosigma spp.	Other Dominant Species	1000			
Protoperidinium spp.	Other dominant species	600			
Scrippsiella spp.	Other Dominant Species	400			
Small Flagellates	Other Dominant Species	2600			

Method: In-house, based on UNESCO 1978 and IOC Manual and Guides 85 2010

Results apply to samples as received

Our routine detection limits for chemical testing relate to samples with a clean matrix.
Reported detection limits may be higher for individual samples if there is insufficient sample or the matrix is complex.

< means less than, > means greater than

Date Generated: 18/2/16

Authorised by: Mandy Edgar
Position: Senior Technician, Natural Toxins Section
Signature:

Report Number: 608378
Project Number: T65968
V16.20
SLP

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NRSBU STATUS REPORT - 16 September 2016

No	Meeting Date	Document Number	Report Date	Report Title / Item Title	Officer	Resolution or Action	Status
a	24/06/16	M1942	24/06/16	General Manager's report	R Kirby	Proposal received from Gurney Environmental (Accel-o-Fac) regarding the use of wind generated mixers at Bell Island.	The General Managers will report on this matter at the Boad meeting on 16 September 2016.
b	24/06/16	M1761	24/06/16	Minutes	R Kirby	Invitation to Spit Restoration group to make a presentation on continued restoration work on Bell Island to the Board at the December 2016 meeting.	Invitation will be sent to restoration group once the December 2016 meeting of the Board is confirmed.
c	24/06/16	M1761	24/06/16	Minutes	J Thiart	Review of Trade Waste Agreement Amendments.	Report included in GM's report.
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 after consideration of Gurney Environmental proposal.
e	24/06/16	M1761	24/06/16	Minutes	R Kirby	Submission to Moturoa/Rabbit Island Reserve Management Plan.	The submission was sent to TDC for consideration.
f	24/06/16	M1761	24/06/16	Minutes	R Kirby	Accidental discharge consent application.	The consultants reponded to the Further Information request received from the planner at the end of August 2016. It is expected that the consent authority will respond to the application before the end of September 2016.
g	24/06/16	M1942	24/06/16	General Manager's report	J Thiart	Bokashi Logic proposal on the improvement of sludge management at Bell Island using their proprietary products.	The Senior Asset Engineer continues to liaise with Bokashi Logic regarding the development of the proposal is working with Bokashi Logic.
h	22/06/12		22/06/12	Minutes	J Thiart	Energy audit at pump stations	Enercon completed site investigation in August 2016. Report expected before the end of September 2016.
i	14/12/12			Bell Island power supply	J Thiart	Improvement of power supply by Network Tasman	Report included in GM's report.
1	24/06/16	M1942	24/06/16	General Manager's report	R Kirby	AND THAT Contract 3458 Operations and maintenance with Nelmac be extended on the same terms and conditions for another two years to 30th September 2018 at an annual cost of approximatley $1,600,000 excl GST.	Completed.
2	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;	Awaiting report from SCION
						AND THAT NRSBU contribute an amount of $10,000 payable on receipt for the final harvest report.	
3	22/06/12	1307226	22/06/12	Bell Island Energy Audit	J Thiart	AND THAT the removal of the time of use meter at the dewatering building will be considered once the deferment of the thickening upgrade is confirmed;	Contractor instructed to complete notification to Network Tasman.
						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.	Contractor instructed to investigate the cost of integrating the power supply to the ponds and the irrigation pump station.
4	9/03/12	1042662	9/03/12	Staff report	J Thiart	AND THAT the NRSBU continue supporting the tree trials and that the monitoring continues until the trees are harvested.	Ongoing.

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Your consumer-owned electricity distributor

Network Tasman Limited
52 Main Road, Hope 7020
PO Box 3005
Richmond 7050
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Website: www.networktasman.co.nz

23 August 2016

Richard Kirby
Nelson Regional Sewerage Business Unit

Dear Richard

BELLS ISLAND SEWERAGE FACILITY ELECTRICITY SUPPLY

Thank you for our meeting of 19 August.

As discussed at the meeting, Network Tasman has a single high voltage cable supply to the NRSBU sewerage treatment installation on Bells Island. This cable crosses under the estuary from Best Island. In the event of a failure of the cable, it could take up to a week to locate and repair the cable, during which time there would be no electricity supply available to the facility.

Network Tasman is obliged to provide ongoing supply of electricity to consumers on its network, however the supply is not guaranteed to be continuous. Planned and unplanned interruptions in the supply are accepted contractually by consumers in the supply agreements with their electricity retailers.

In the case of critical electricity supplies we recommend that consumers adopt systems that allow for them to cope with both planned unplanned interruptions in the electricity supply. Such systems may include backup generators, second lines of electricity supply etc.

The issue of security of supply to the Bells Island facility was initially identified during Engineering Lifelines studies in the region. We have been in dialogue with NRSBU on the issue for a number of years and we have jointly reached the conclusion that a second HV cable from the overhead supply on Best Island, linking with the end of the existing cable circuit on Bells Island is the most practical and cost effective means of providing requisite security of supply. A map showing the route of the proposed cable installation is attached.

An easement has been secured over the Golf Club land for the installation in the fairway.

The total cost of the project including easement procurement costs is estimated at $447,000.

Installation of the second cable would not affect existing line charges.

The provision of a second cable would allow for a degree of supply capacity increase on Bells Island. This would be of the order of 20% over the existing maximum load. An increase in load at the site may affect existing line charges.

Network Tasman recognises that a failure of the existing supply to Bells Island and the consequential impact on the community would result in reputational damage to both Network Tasman and NRSBU.

For this reason, we believe that joint funding of the second cable installation project is appropriate. At our recent meeting a 50/50 share of the project costs between NTL and NRSBU was proposed.

Can you please confirm your agreement to co-fund this security improvement project by return letter.

Yours sincerely
NETWORK TASMAN LIMITED

M.A. Hendrickson

Murray Hendrickson
NETWORK MANAGER

REPORT R6520

Draft Nelson Regional Sewerage Business Unit Annual Report 2015/2016

1. Purpose of Report

1.1 To consider the performance of the Nelson Regional Sewerage Business Unit (NRSBU) for the 2015/16 financial year.

1. Recommendation

It is recommended that the Committee

Receives the report Draft Nelson Regional Sewerage Business Unit Annual Report 2015/2016 (R6520) and its attachments (A1619083, A1619080 and A1623133;

Approves that the Annual Report (R6520) subject to audit.

2. Background

2.1 This Annual Report is a review of what has been achieved by the Nelson Regional Sewerage Business Unit (NRSBU) in the 2015/16 financial year and its level of performance against Key Performance Indicators.

3. Discussion

3.1 The NRSBU met its budget targets with a surplus of $1,923,385. Operation and maintenance costs are 1% less than the budget.

3.2 One of the highlights of the past year is the continued savings in electricity usage at the treatment plant resulting from improved utilisation of the capacity of the Bell Island ponds by Nelmac. Microbiological analysis of the pond organisms and physico-chemical parameters monitored demonstrate that pond health has been maintained or improved during the last few years.

3.3 The upgrade of the treatment plant load monitoring, airport pump station and the odour control at the Saxton pump station were completed within budget.

3.4 Capital projects to the value of $549,000 were delayed to allow for the completion of an investigation into a proposal received from Gurney Environmental relating to the optimisation of the Bell Island pond systems to improve sludge digestion. Gurney Environmental claims that installing Accel-o-Fac mixers in the ponds will increase the hydraulic capacity of the ponds over time by decreasing the sludge level in the ponds by up to 3 feet creating significant future savings for the NRSBU resulting from the deferral of the desludging of the ponds.

3.5 The upgrade of the inlet screening at Bell Island is programmed for completion during 2016/17.

3.6 All consent conditions were met during the year.

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

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

3.6.3 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.

3.6.4 Ten health and safety incidents were recorded during the year, one of which resulted in a minor abrasion to a finger.

3.7 The online spectrolyser (S::Scan) installed during the year at the wastewater treatment plant inlet provides valuable real-time information about influent characteristics and will over time generate a reliable dataset that will allow the NRSBU to optimise the treatment plant performance

Level of Service Performance

3.8 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		
				2013/14	2014/15	2015/16
Environmental Impacts	Treatment & Disposal	RMA Consent - Wastewater Discharge to Coastal Marine Area	100% compliance with consent conditions	No	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	No	Yes	Yes
		Pump station wet weather overflows	No overflows for all pump stations	Yes	Yes	No 3 events
		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	Yes	No 3 events	No 1 event
	Pipelines	Reticulation Breaks	No reticulation breaks	Yes	Yes	Yes
		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

3.9 Four overflows occurred at pump stations over the past year. The following graph outlines the overflows and associated causes that have occurred since 1996/97.

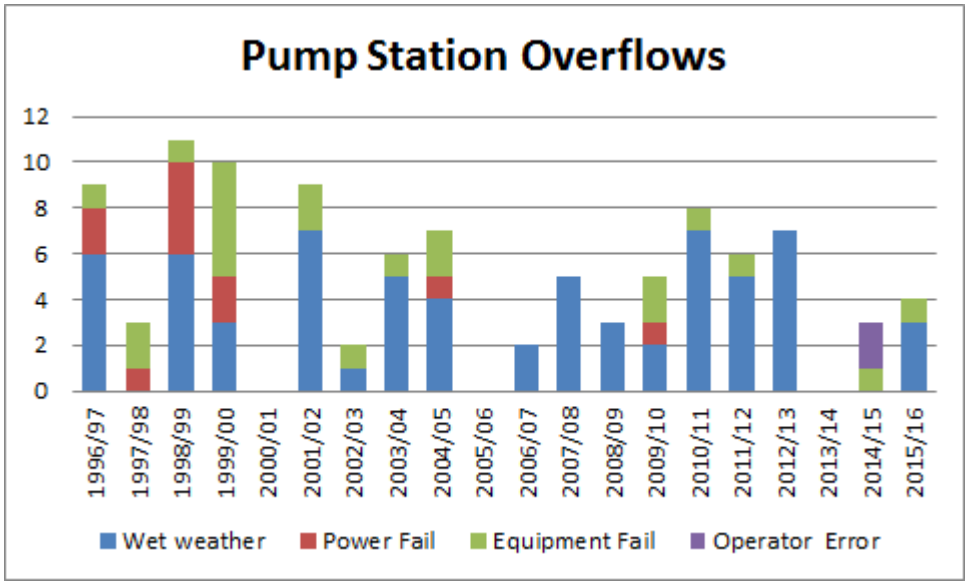

Figure 5: Pump Station Overflow Causes

3.9.1 Three overflows occurred during a rain event (highest 24 hour rain event recorded since 2000) on 24 March 2016 at three different pump stations.

3.9.2 One overflow occurred on 22 June at the Songer Street pump station following an event where all three pumps at the pump station blocked. Investigations into this event and other events where pumps were blocked at this pump station have shown that the blockages are related to the express sewer bypass constructed by Nelson City Council. Nelson City Council has programmed work to improve the management of this pipeline.

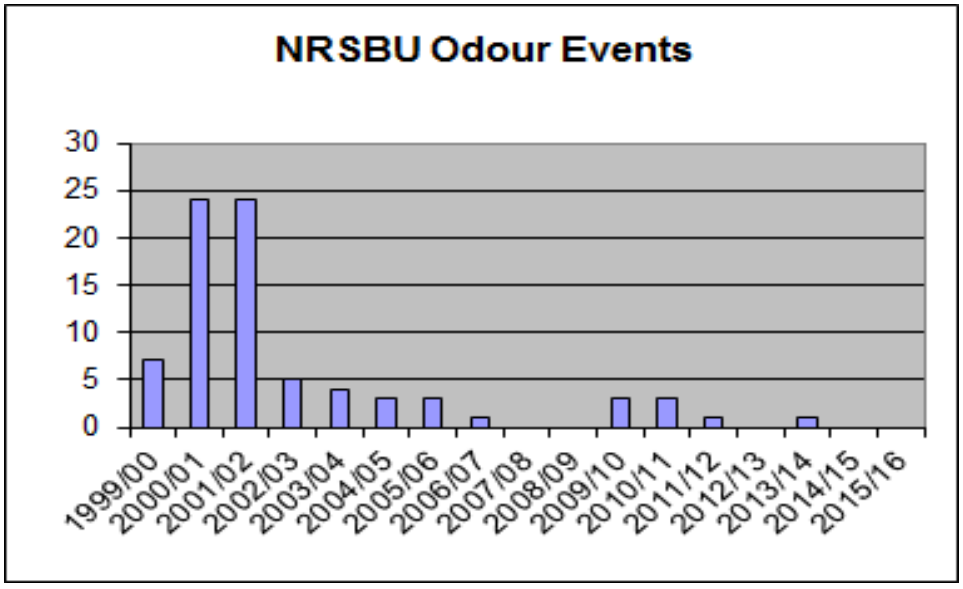

Figure 6: Odours

Customer Group

3.10 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.

3.11 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.

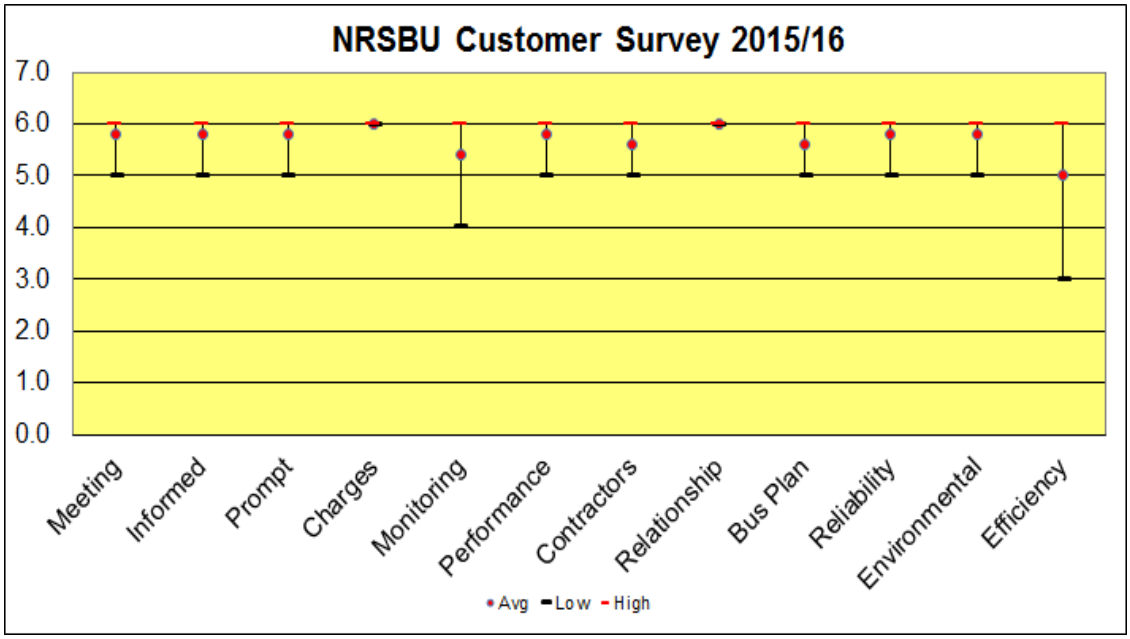

Figure 4.2: Customer Survey Results 2015/2016

Performance Measured Against Strategic Business Objectives

3.12 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 2015-16 performance objectives. The following table outlines the performance objectives, key performance measures and what was achieved:

3.13 "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 5.7 was achieved.
Levels of service are defined in all contracts and are met.	100% compliance with service level agreements by all major contractors.	Achieved.

3.14 "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 10% lower than operational cost for the year ending 30 June 2013.
	All capital projects are delivered within budget.	Not achieved. Programmed capital projects delayed to allow for review of pond optimisation.
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	Demand management policy is developed by July/August 2014.	Completed.

costs, risks and environmental implications of increasing demand.	Customer contracts are reviewed by June 2015 to ensure that charging mechanisms support the demand management policy.	Achieved. Customer contracts were reviewed in June 2015.
	Nelson City Council and Tasman District Council implement their own load management policies, priorities and plans.	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 the components of the system.	Achieved.
	Peak storm water inflows are reduced by 10% per year and that this target will be reviewed annually.	It is not possible to measure the storm water component.
Technology choices are well understood and are proven to be stable and cost effective.	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.	Optimisation of pond operation is being reviewed following a proposal received from a third party.

3.15 "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. Risk management plans were reviewed as part of the 2015-18 asset management planning process.

Contingency plans adequately address emergency events.	Customer representatives review and approve the plans annually.	Asset management plan considered at customer meeting.
	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.
Customers engage with the risk assessment process, understand and accept the important risks and the level of mitigation provided.	Customer representatives review and approve the risk management plan annually and following any incidents which require activation of the plan.	Asset management plan considered at customer meeting.

3.16 "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 2015/16.
	A workshop is conducted at least annually to develop the skills and industry knowledge of the Board members and staff.	Achieved. The workshop held in March 2016 on the performance of the oxidation ponds were attended by all Board members and two contributor representatives.

	An independent audit every three years confirms this.	Not achieved. The review of the manuals were delayed until 2016/17.

3.17 "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.	Targets are set for energy efficiency improvements by June 2015 and are reported on and reviewed annually from that date.	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.

3.18 "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 approved by both owners
	All budget projections are met.	Achieved.

Good relationships are maintained with all stakeholders including owners, iwi, customers, contractors, neighbours, and the wider community.	All complaints or objections are addressed within 7 days.	Achieved.
	All applications for resource consents are approved.	Achieved. The Accidental discharges consent application is continuing.
	Up to date information on activities and achievements are publicly available.	The NRSBU website is reviewed annually and updated as required.
	Stakeholders are identified and communication targets are set and met by June 2014.	Not achieved. Annual meeting with Best Island residents was delayed and is programmed for November 2016.
		Continued good communication with Best Island residents and early response to issues raised have allowed the NRSBU to pre-empt odour complaints.

3.19 "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.	Compliance with resource consent conditions.	Not achieved. The Bell Island irrigation consent report was delayed as a result of delay in receiving soil test results. Report will be submitted in August 2016.

Capital Expenditure 2015/16

3.20 The following table lists the extent of renewals that were undertaken in 2015/16;

Renewal 2014/15	Budget	Cost
Miscellaneous	$20	$47
Pump Stations and rising mains	$22	$119
Inlet, aeration basin,Clarifier and ponds	$450	
Inlet		$40
Aeration basin		$22
Ponds		$15
Solids handling	$507	
Solids handling		$56
Sludge treatment C-Train		$175
Rabbit Island	$98	$11
Roads	$30	$0
Consents	$0	$0
Total	$1,127	$486

3.21 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.

3.22 Upgrades

Upgrade 2014/15	Budget	Cost	Progress
Modoification pond M5	$140	$0	Delayed: Pond optimisation review
Upgrade odour control at Saxton	$160	$88	Completed
Sludge management (Tank)	$200	$0	Delayed: Pond optimisation review
Desludging of ponds (Option study)	$40	$0	Delayed: Pond optimisation review
Automation of process monitoring	$110	$107	Completed
Airport pump station upgrade (second storm pump)	$270	$221	Completed
Screen upgrade	$315	$1	Programmed completion: Nov 2016
Health and Safety			
Lifting device for pump stations		$6	Completed
Primary clarifier safety rail and step		$4	Completed
Accidental discharges resource consent (C/O)	$77	$22	Programmed completion: Oct 2016
Total	$1,312	$448	

C/O = carry over from previous budgets. Project cost to date for the Accidental Discharge Consent application = $47,870.

3.23 Upgrade projects identified to improve the efficiency of the ponds and sludge processing were put on hold while the proposal received from Gurney Environmental is reviewed.

Scheme Capacity Trends

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

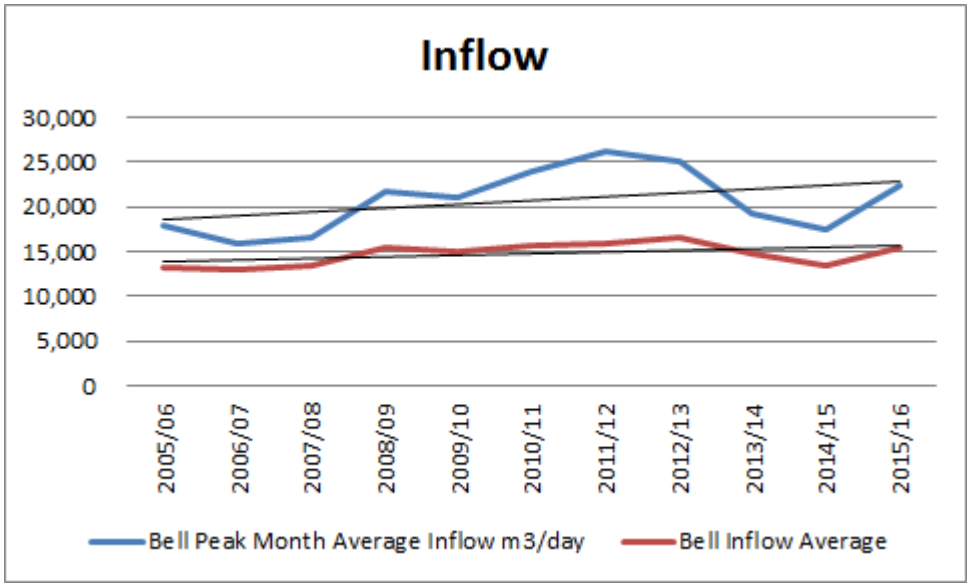

Figure 8: Shows the increased inflows into Bell Island

3.25 The total suspended solids design parameters (2 day peak and 90 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.

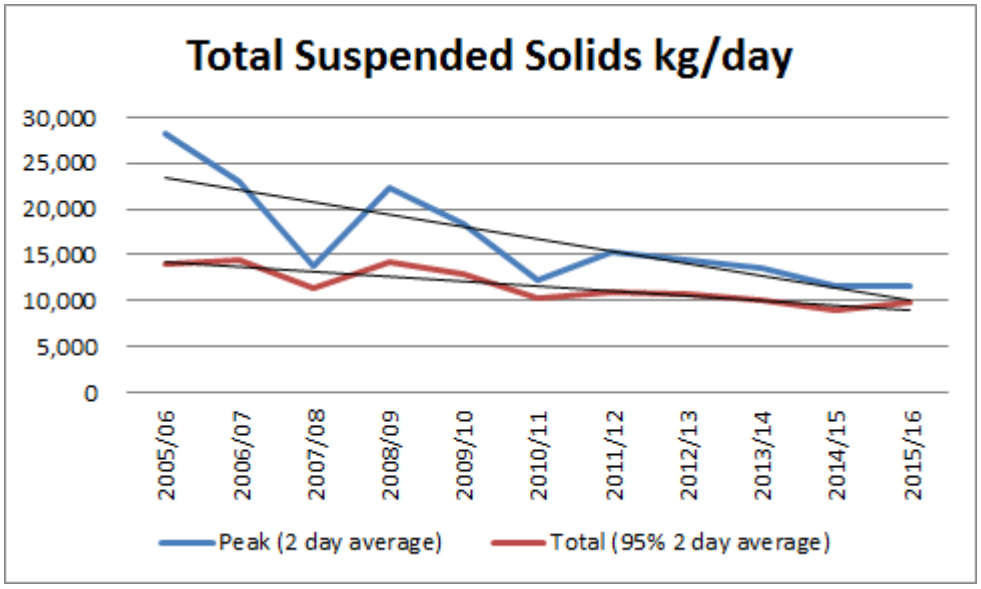

Figure 9: Decrease in peak suspended solids following the signing of the Disposal of Trade Waste Agreement

3.26 The biological oxygen demand in the inflow has decreased over the period since the trade waste agreements were effected.

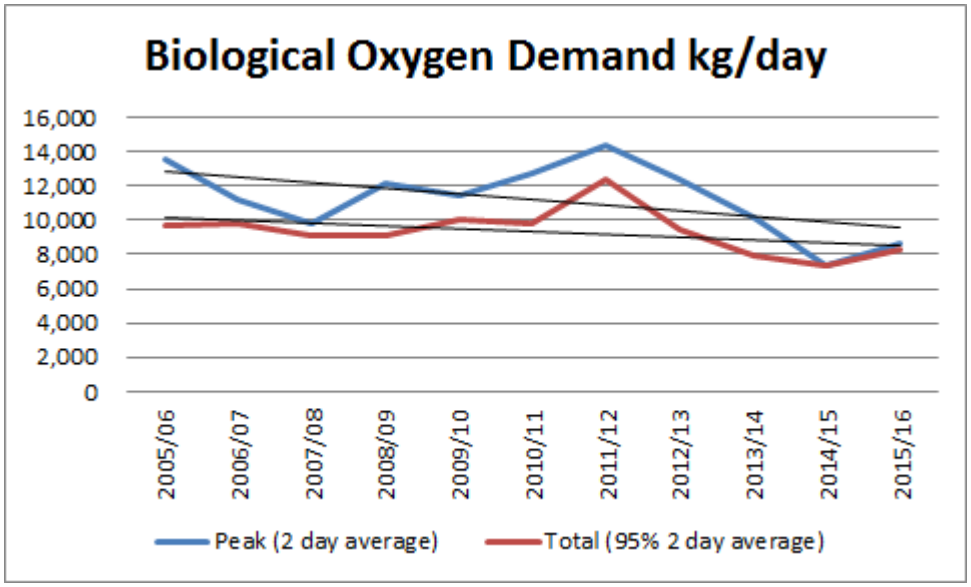

Figure 10: Biological oxygen demand

3.27 The chemical oxygen demand (figure 11) is trending lower. Future demand projections should be adjusted to these base levels as it is considered that the decrease in loads is related to the implementation of the disposal of trade waste agreements in 2007. These agreements continue to provide an incentive for industrial customers to improve on site treatment of waste water.

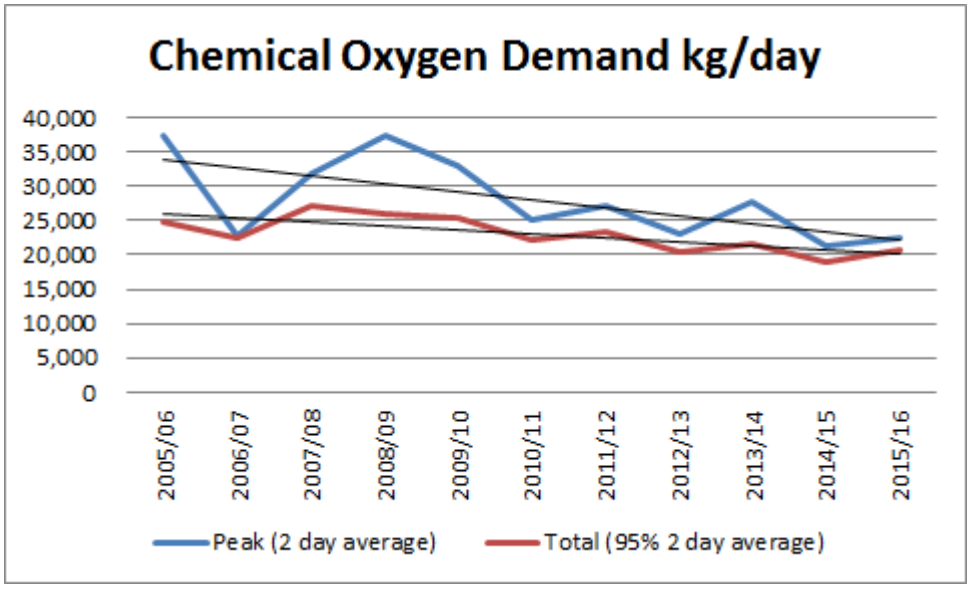

Figure 11: Shows the decrease of peak chemical oxygen demand since the implementation of the Disposal of Trade Waste Agreements in 2007.

3.28 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.

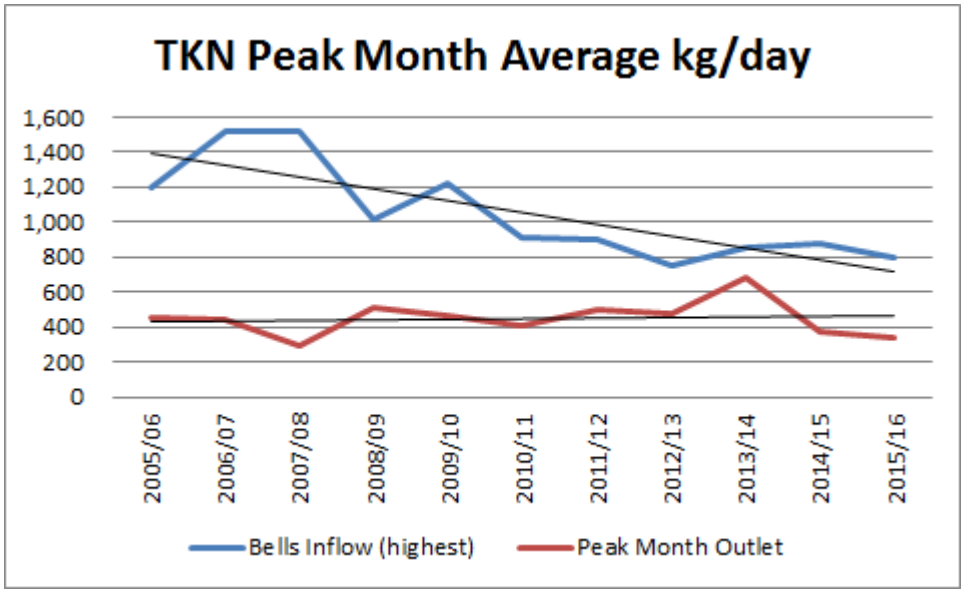

Figure 12: Shows a decrease in the nutrients received at Bell Island

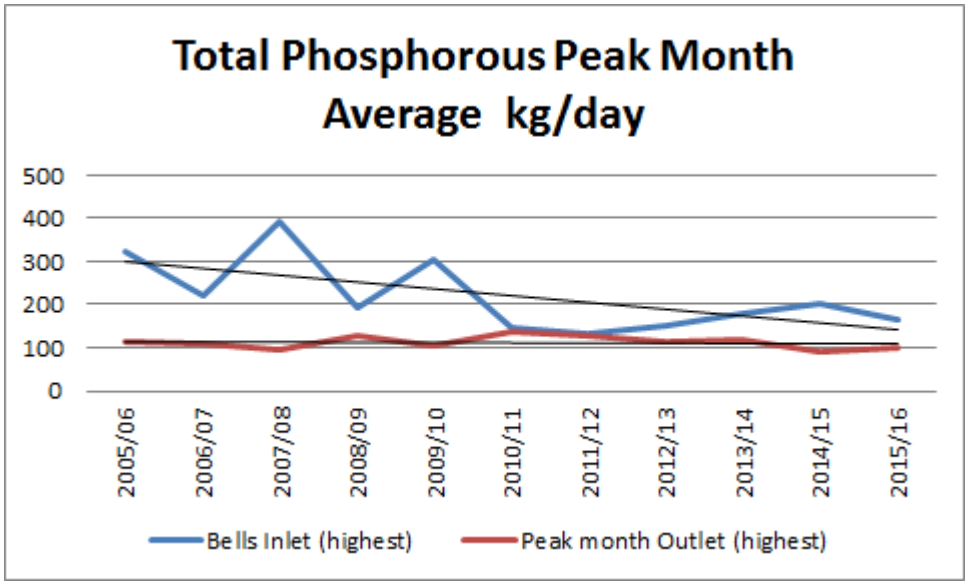

Figure 14: Shows a decrease in the phosphorous received at Bell Island

3.29 The average total nitrogen and total phosphorous loads discharging from Bell Island at around 50% of the resource consent limits.

3.30 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.

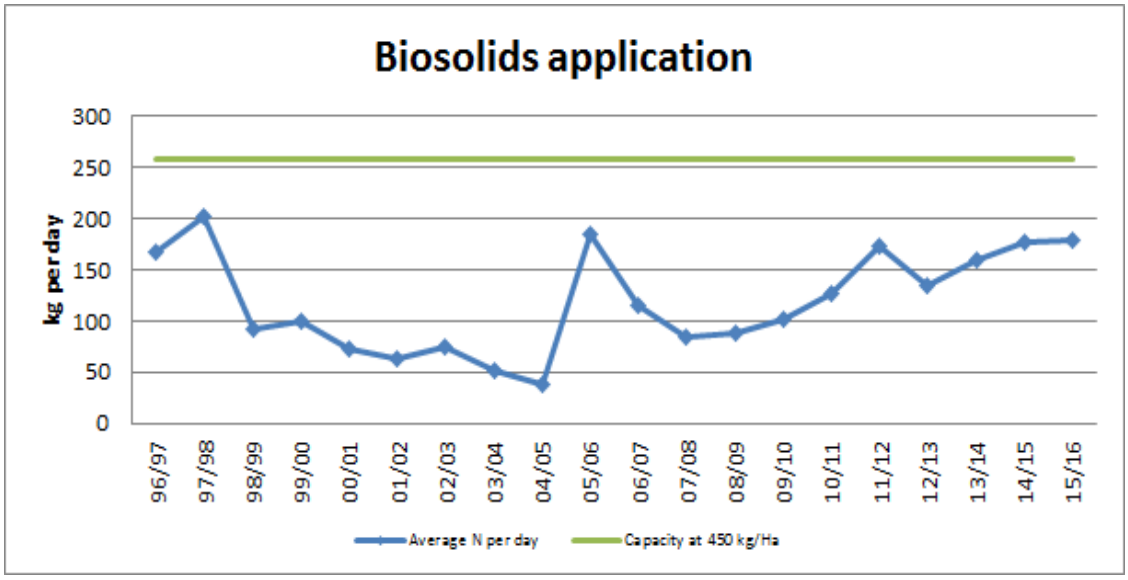

Figure 15: Average daily biosolids application

3.31 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.

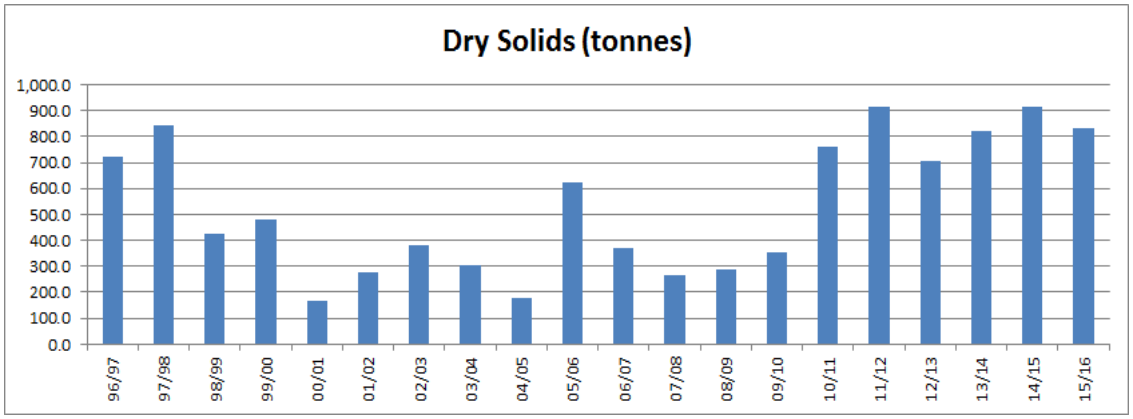

Figure 16: Dry solids diverted to pine plantations

Conclusion

3.32 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

3.33 Explanations for major variations from the Nelson Regional Sewerage Business Unit's 2015/16 Business Plan are as follows:

Statement of Comprehensive Income

3.34 Total Income is $587,796 less than budget due to lower interest rates reducing the rate of return on capital.

3.35 Total Expenses are $236,981 less than budget largely due to interest being $247,611 less than the budget due to a reduction in interest rate paid. Electricity is $106,348 less than budget as a result of optimising load into the ponds and lower pump costs. The cost of Bio Disposal was $107,442 more than budget due to increased volumes and additional cost of transporting to alternative disposal sites.

Richard Kirby
Consulting Engineer

Attachments

Attachment 1: Discharge consent compliance 2015/2016 A1619083

Attachment 2: Contributor Heavy Metal Results A1619080

Attachment 3: Draft Financial Statement 30 June 2016 A1623258

Important considerations for decision making	
1.	**Fit with Purpose of Local Government** Annual performance report to show that All statutory obligations have been met.
2.	**Consistency with Community Outcomes and Council Policy** Wastewater reticulation, treatment and disposal services meet customers' long term needs
3.	**Risk** Risks associated with the services provided are identified and mitigated to a level agreed with customers and owners
4.	**Financial impact** The costs of wastewater reticulation, treatment and disposal services are minimised
5.	**Degree of significance and level of engagement** This matter is of high significance for the NRSBU because the report informs the owners how the NRSBU met key performance indicators. The report will be released to the owners once the audit report is received.
6.	**Inclusion of Māori in the decision making process** N/A
7.	**Delegations** The Joint Committee has the responsibility for considering the annual report on behalf of the owners, Nelson City Council and Tasman District, in terms of the memorandum of understanding.

1. Appendix A Discharge Consent Compliance

Regional Sewerage Scheme - Coastal Permit RCAC 0431
Bells Island - Effluent Test Results (Current)

Month	Average Daily Inflow	Average Daily Discharge			BOD5	CBOD5	Suspended Solids	Total Nitrogen	Total Phosphorous	Feacal Coliforms	Enterococci
	m3/day	hrs/day	m3/day	Meter Diff (%)	g/m3	g/m3	g/m3	kg/day	kg/day	MPN/100ml	MPN/100 ml
Limit	20,000		20,000	5.00	50		150	600	150	100,000	
Jul 15	15,203	5.1	13,414		48	50	91	255	44	4.70E+05	8.00E+02
					44	40	94	228	50	8.10E+04	5.00E+02
					55	55	89	228	48	2.70E+04	2.00E+03
					40	44	83	188	52	5.50E+04	2.00E+03
					60	66	110	228	58	3.20E+04	4.10E+03
Aug 15	14,560	4.8	12,470		48	33	45	200	44	2.20E+04	4.90E+02
Sep 15	15,705	5.1	12,695		24	25	51	241	43	8.60E+02	2.70E+01
Oct 15	11,824	3.5	7,845		49	52	120	180	40	3.40E+03	3.10E+01
Nov 15	12,379	4.0	8,772		26	24	40	281	69	2.50E+01	3.30E+00
Dec 15	11,924	3.7	8,010		23	21	49	248	59	3.90E+03	1.50E+02
Jan 16	14,366	4.9	11,136	3.00	23	19	52	312	92	2.50E+03	7.40E+02
Feb 16	16,468	4.6	13,312		50	32	130	226	101	2.30E+03	3.70E+02
Mar 16	16,723	4.3	12,673		**62**	36	107	139	82	5.70E+03	2.90E+02
Apr 16	15,914	4.9	14,816		**67**	33	92	222	74	1.80E+04	2.70E+02
May 16	17,505	5.0	14,612		**72**	30	63	333	88	1.55E+04	2.48E+02
Jun 16	22,348	5.4	19,787		46	25	49	336	79	2.53E+04	7.02E+02
	15,410		12,462	3.00%	48	33	86	228	59	1.68E+04	4.30E+02

Test	Results	Limits	Comments
Median Faecal Coliform Count	1.68E+04	**<20,000 /100ml**	O.K
No of samples over 100,000/100ml	1	**<6.25%**	O.K
Median BOD5	48 g/m3	**<40 g/m3**	Over Limit
No of samples over 50 g/m3	5	**<6.25%**	Over Limit
Median Suspended Solids	86 g/m3	**<100 g/m3**	O.K
No of samples over 150 g/m3	0	**<6.25%**	O.K
1 April - 31 July			
Median Total Nitrogen	228 kg/day	**<500 kg**	O.K
No of samples over 600 kg	0	**<12.5%**	O.K
1 Aug - 31 March			
Maximum Total Nitrogen	312 kg/day	**<600 kg**	O.K
No of samples over 500 kg	0	**<12.5%**	O.K
Maxiumum Total Phosphorous	101 kg/day	**<180 kg**	O.K
No of samples over 150 kg	0	**<6.25%**	O.K
Mean Daily Flow	12,462 m3	**<20,000**	O.K

2. Appendix B Contributor Heavy Metal Results 2015-16

Heavy Metals & Other Substances	Alliance 23/10/2015	ENZA 23/10/2015	Saxtons 23/10/2015	Richmond 23/10/2015	Airport 23/10/2015	Mapua 23/10/2015	NPI 23/10/2015	Wakatu 23/10/2015	Songer 23/10/2015	Trade Waste Bylaw Limit
Cadmium	0.00028		0.00016	0.00026	0.00047	0.000069	0.00052	0.00018	0.00021	0.5
Copper	0.081		0.047	0.09	0.058	0.078	0.069	0.058	0.06	5
Nickel	0.027		0.0053	0.0056	0.007	0.005	0.023	0.0069	0.0042	5
Zinc	0.60		0.18	0.130	0.18	0.07	0.18	0.15	0.096	5
Chromium	0.009		0.016	0.0072	0.024	0.0016	0.14	0.0064	0.0026	5
Lead	0.0073		0.002	0.0026	0.0037	0.0027	0.0024	0.0074	0.0024	5
Boron	0.087		0.11	0.12	0.083	0.046	0.36	0.075	0.026	25
Arsenic	0.0022		0.00083	0.0022	0.0089	0.00083	0.04	0.0019	0.001	1
Fluoride	0.43		0.47	0.28	0.26	0.36	2.4	0.78	0.28	5
Sulphide	0.2		0.2	<0.1	**1.4**	0.1	<0.1	0.1	0.4	1
Sulphates(SO4)	19		44	39	32	22	120	110	25	200
Phenols	1.800		<0.05	<0.05	<0.2	<0.05	<0.2	1.800	1.000	50
Oil and Grease	32		29	100	79	21	49	37	32	
Mercury	<0.00005		<0.00005	0.00009	0.00014	<0.00005	0.00007	0.000070	0.0002	0.05
pH	7.2		7.4	7.6	7	8	5.8	7.2	7.3	
Pesticides										
Cyanide	<0.005		0.005	<0.005	<0.005	<0.005	0.010	<0.005	<0.005	5

NELSON REGIONAL SEWERAGE BUSINESS UNIT

ANNUAL FINANCIAL STATEMENTS

For the Year ended 30 June 2016

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Representatives for year ended 30 June 2016

Representing Tasman District Council
Cr B Dowler
Cr M Higgins

Representing Nelson City Council
Cr R Copeland
Mr D Shaw

Principal Administration Office

C/- Nelson City Council
110 Trafalgar St
Nelson

Auditor

Audit New Zealand on behalf of the office of the Auditor-General

Bankers

Westpac New Zealand Ltd
Queen St
Richmond

Solicitors

Duncan Cotterill
197 Bridge St
Nelson

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Accounting policies
For the year ended 30 June 2016

Reporting Entity

The Nelson Regional Sewerage Business Unit is a Joint Committee of Nelson City Council and Tasman District Council, under Section 48 of the Local Government Act 2002.

The primary purpose of the Nelson Regional Sewerage Business Unit is to manage the treatment facilities and network in a cost efficient and environmentally sustainable manner rather than making a financial return. Accordingly, the Business Unit has designated itself as a public benefit entity for the purposes of financial reporting.

The financial statements of the Business Unit are for the year ended 30 June 2016. The financial statements were authorised for issue by the Board on the XXth September 2016.

Basis of Preparation

The financial statements have been prepared on the going concern basis, and the accounting policies set out below have been consistently applied to all periods presented

Statement of compliance

The financial statements of the Business Unit have been prepared in accordance with the requirements of the Local Government Act 2002, which includes the requirement to comply with New Zealand generally accepted accounting practice (NZ GAAP).

The financial statements of the Business Unit have been prepared in accordance with Tier 2 PBE standards on the basis that the Business Unit does not have public accountability (as defined) and has toal annual expenditure of less than $30 million.

These financial statements comply with Tier 2 PBE standards.

Measurement base

The financial statements have been prepared on a historical cost basis, modified by the revaluation of land, infrastructural assets and biological assets.

Functional and presentation currency

The financial statements have been prepared in New Zealand dollars and all values are rounded to the nearest dollar. The functional currency of the Business Unit is New Zealand dollars.

Standards issued and not yet effective and not early adopted

Accounting Policies

The following particular accounting policies which materially affect the measurement of results and financial position have been applied:

a) Revenue

Revenue is measured at the fair value of consideration received.

Exchange and non-exchange transactions

An exchange transaction is one in which Council receives assets or services, or has liabilities extinguished, and directly gives approximately equal value in exchange. Non-exchange transactions are where Council receives value from another entity without giving approximately equal value in exchange

Sales and other recoveries

Revenue from the rendering of services is recognised by reference to the stage of completion of the transaction at balance date, based on the actual service provided as a percentage of the total services to be provided. These are exchange transactions and include rents.

b) Borrowing Costs

Borrowing costs are recognised as an expense in the period in which they are incurred.

c) Cash and Cash equivalents

Cash and Cash equivalents includes cash on hand, deposits held at call with banks, other short term highly liquid investments with orginal maturities of three months or less, and bank overdrafts.

Bank overdrafts are shown within borrowings as a current liability in the statement of financial position.

d) Trade and other receivables

Trade and other receivables are initially measured at fair value and subsequently measured less any provision for impairment.

A provision for impairment of receivables is established when there is objective evidence that the Board will not be able to collect all amounts due according to the original terms of the receivables.

e) Trade and other payables

Short term creditors and other payables are recorded at their face value.

f) Borrowings

Borrowings are initially recognised at their face value plus transaction costs. After initial recognition, all borrowings are measured at amortised cost using the effective interest method.
Borrowings are classified as current liabilities unless the Council or group has an unconditional right to defer settlement of the liability for at least 12 months after balance date.

g) Income tax

As a Joint Committee of Nelson City Council and Tasman District Council the Business Unit is taxable in the two Councils. However, the Business Unit operations are a non-taxable activity for each Council.

h) Goods and Services Tax

The financial statements have been prepared exclusive of goods and services tax (GST) with the exception of trade receivables and payables, which are stated with GST included.

i) Distribution Policy

Any Net Surplus Income before extraordinary items over budget is returned to the Councils on an equal share basis. These are exchange transactions.

j) Property, Plant and Equipment

There are three categories of Property, Plant and Equipment:

- Freehold land
- The Infrastructural Network – incorporates pipelines, pump stations, ponds, aerators, clarifiers, odour control unit, power supply and buildings
- Work in Progress

i) Land is reviewed annually and revalued at market value every five years or if there is a material movement. The latest valuation was conducted as at 30 June 2014 by QV Valuations.

ii) Infrastructural assets are valued annually internally at depreciated replacement cost by Council engineers as at 30 June 2016. The valuation methodology has been peer reviewed by Opus International Consultants Ltd and revaluations are updated annually.

Vested infrastructure assets have been valued based on the actual quantities of infrastructure components vested and the current 'in the ground' cost of providing identical services

Depreciation is provided on a straight line basis which will write off the cost/valuation of the assets over their useful lives. The useful lives of the major classes of infrastructural assets have been estimated as follows:

Buildings	50 years
Ponds and Channels	
- earthworks	99999 years
- wave bands	90 years
- electromechanical	25 years
- pipelines, chambers, aeration basin outfall	50 – 80 years

i) Property, Plant and Equipment continued

Aerators	25 years
Power Supply	25 years
Clarifier	
- earthworks	99999 years
- civil works	50 years
- pipes	50 – 60 years
- pumps	10 – 25 years
- other	10 – 25 years
Odour Control Unit	10 – 50 years
Pump Stations	
- pumps	15 - 25 years
- variable speed drive units	10 - 20 years
- pipes and civil works	50 years
- other	25 years
Pipelines	
- pipes	45 – 80 years
- air valves	25 years

The Business Unit has implemented an activity management plan for the continuing replacement and refurbishment of components to ensure that conveying, treatment and disposal systems are maintained to provide a satisfactory service on an ongoing basis.

iii) Work in progress is valued at cost of construction. Depreciation is applied at time of commissioning.

k) Biological Assets

Forestry consisting of 18 hectares planted on Bell Island adjacent to the ponds is revalued annually by P F Olsen and Company Ltd to Market Value. The latest valuation available is at 30 June 2016.

The movement in the Forestry valuation is recorded in the Surplus or Deficit.

l) Revaluation Reserves

The results of revaluing land and infrastructural assets are credited or debited to other comprehensive revenue and expense and are accumulated to an asset revaluation reserve in equity for that class of asset. Where this results in a debit balance in the asset revaluation reserve for any class of asset, this is expensed in the Surplus or Deficit. To the extent that increases in value offset previous decreases debited to the Surplus or Deficit, the increase is credited to the Surplus or Deficit.

m) Statement of Cash Flows

Cash means cash balances on hand, held in bank accounts, demand deposits and other highly liquid investments in which the Business Unit would invest as part of its day to day cash management.

Operating activities include cash received from participants and all other sources and records the cash payments made for the supply of goods and services.

Investment activities are those activities relating to the acquisition and disposal of non current assets.

Financing activities comprise the change in equity and debt capital structure of the Business Unit.

n) Budget figures

The budget figures are those approved by the Board at the beginning of the year in the Business Plan. The budget figures have been using accounting policies that are consistent with those adopted by the Board for the preparation of financial statements.

o) Critical accounting estimates and assumptions

In preparing these financial statements the Business Unit has made estimates and assumptions concerning the future. The key assumptions relate to the valuation of the Business Unit's property, plant and equipment. These estimates and assumptions may differ from the subsequent actual results. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including estimates and expectations of future events that are believed to be reasonable under the circumstances.

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Comprehensive Revenue and Expense
For the year ended 30 June 2016

	Notes	Actual 2015/16	Budget 2015/16	Actual 2014/15
Revenue		$	$	$
Sales		7,387,763	7,951,000	7,409,890
Other Recoveries		136,394	176,000	158,553
Interest		1,147	1,000	257
Gain in Fair Value of Forestry	5	4,900	-	0
Total Revenue		7,530,204	8,128,000	7,568,700
Less Expenses				
Management		209,234	204,000	195,668
Audit Fees		15,450	15,000	15,130
Members Fees	7	-	38,500	-
Interest Paid		634,389	882,000	865,687
Insurance		58,749	63,000	59,971
Depreciation	6	1,768,271	1,726,006	1,726,006
Electricity		717,652	824,000	750,435
Operations & Maintenance		1,259,534	1,208,169	1,126,655
Monitoring		142,164	142,555	77,121
Biosolids Disposal		677,442	570,000	693,668
Consultancy		55,551	75,000	38,807
Sundry		68,383	94,770	65,274
Loss in Fair Value of Forestry	5	-	-	19,556
Total Expenses		5,606,819	5,843,000	5,633,978
Net Surplus		1,923,385	2,285,000	1,934,722
Other Comprehensive Revenue and Expense				
Revaluation of Fixed Assets		855,279		1,612,130
Total Comprehensive Revenue and Expense		2,778,664	2,285,000	3,546,852

Statement of Changes in Equity
For the year ended 30 June 2016

	Notes	Actual 2015/16	Actual 2014/15
Equity at the start of Year		$	$
Opening Equity		38,849,766	37,237,636
Plus Total Comprehensive Revenue and Expense		2,778,664	3,546,852
Less Owners Distribution		1,923,385	1,934,722
Equity at the end of Year		39,705,045	38,849,766

The attached notes form part of and should be read in conjunction with these financial statements

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Financial Position
as at 30 June 2016

	Notes	Actual 2016 $	Actual 2015 $
Equity			
Accumulated Funds	1(a)	15,763,734	15,763,734
Contingency reserve		100,000	100,000
Revaluation reserve	1(b)	23,841,311	22,986,032
Total Equity	1	39,705,045	38,849,766
This was represented by:			
Current Assets			
Cash and cash equivalents		344,874	359,307
Trade receivables from exchange transactions		26,077	407,418
Inter-entity receivables from exchange transactions	4	211,054	459,073
Total Current Assets		582,005	1,225,798
Current Liabilities			
Trade Payables from exchange transations		478,602	459,073
Sundry Creditors and other payables from exchange transactions		76,358	14,950
Inter-entity payables from exchange transactions	4	1,923,385	1,477,670
Borrowings	2	-	-
Total Current Liabilities		2,478,345	1,951,693
Net Working Capital		(1,896,339)	(725,894)
Non Current Assets			
Property, plant and equipment	6	55,584,984	55,564,160
Forestry assets	5	16,400	11,500
Total Non Current Assets		55,601,384	55,575,660
Non Current Liabilities			
Borrowings	2	14,000,000	16,000,000
Total Non Current Liabilities		14,000,000	16,000,000
Net Assets		39,705,045	38,849,766

For and on behalf of the Nelson Regional Sewerage Business Unit

Chairman

General Manager

Date XXth September 2016

The attached notes form part of and should be read in conjunction with these financial statements

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Statement of Cash Flows
For the year ended 30 June 2016

	Notes	2015/16 $	2014/15 $
Cash Flows from Operating Activities			
Cash was provided from:			
Receipts from customers		8,153,517	7,197,520
Interest received		1,147	257
		8,154,664	7,197,777
Payments to suppliers		(2,818,852)	(3,298,662)
Interest paid		(573,476)	(1,050,196)
		(3,392,328)	(4,348,858)
Net Cash Flows from Operating Activities	3	4,762,336	2,848,919
Investing Activities			
Purchase of property, plant and equipment		(842,046)	(380,098)
Net Cash from Investing Activities		(842,046)	(380,098)
Financial Activities			
Owners Distribution		(1,934,722)	(1,954,496)
Loan repayment		(3,150,000)	(200,000)
Loan raised		1,150,000	0
Net Cash from Financing Activities		(3,934,722)	(2,154,496)
Net Increase/(Decrease) in cash		(14,433)	314,325
Add Opening Cash and cash equivalents		359,307	44,983
Closing Cash and cash equivalents		344,875	359,307

The attached notes form part of and should be read in conjunction with these financial statements

NELSON REGIONAL SEWERAGE BUSINESS UNIT

Notes to and forming part of the Financial Statements
for the year ended 30 June 2016

	2015/16 $	2014/15 $
1 Equity		
The Business Unit is jointly owned by the Nelson City Council and the Tasman District Council.		
1(a) Accumulated Funds		
Opening Balance	15,763,734	15,763,734
Net Surplus	1,923,385	1,934,722
Distribution to Owners	(1,923,385)	(1,934,722)
Closing Balance	15,763,734	15,763,734
1(b) Revaluation Reserve		
Opening Balance	22,986,032	21,373,902
Revaluation Movements		
Land revaluation	0	0
Buildings revaluation	17,461	13,029
Sewerage network revaluation	812,101	1,587,981
Plant & Equipment revaluation	25,717	11,120
Total Revaluation Movement	855,279	1,612,130
Closing Balance	23,841,311	22,986,032
Balance held as follows:-		
Land	1,657,857	1,657,857
Buildings	228,714	211,253
Sewerage network	21,837,357	21,025,256
Plant & Equipment	117,383	91,666
Total Revaluation Reserve	23,841,311	22,986,032

2 Term Loans

A core funding facility exists with Tasman District and Nelson City for 110% of the current funding with a constant maturity of no less than five years.

Interest rates payable range was 4.38% to 3.49% with a weighted average of 4.23%. (For 2014/15 the range was 5.07% to 5.88% with a weighted average of 5.33%).

Total Loans	14,000,000	16,000,000
Less Current Portion	-	-
Term Portion	14,000,000	16,000,000
1 to 2 years	-	-
2 to 5 years	14,000,000	16,000,000
	14,000,000	16,000,000

The interest rate on the borrowings from the two Councils is set at the three year swap rate (NZDSM3NB3Y) plus a margin equivalent to charged by Westpac bank to Nelson City Council. As at 30 June 2016 this rate was was 3.42% which will be used to calculate the Capital Charge in the Trade Waste charges to customers for the first quarte of 2016/17. (2015 4.38%)

3 Reconciliation of Net Surplus with Net Cash Flow from Operating Activities

	2016	2015
Net Surplus	1,923,385	1,934,722
Add back non cash items		
Depreciation	1,768,271	1,745,562
Gain (Loss) in fair value of forestry	(4,900)	(19,556)
Revaluation (gain) loss derivative instruments	-	-
Movements in Working Capital		
(Increase)/Decrease in receivables	629,360	(370,923)
(Increase)/Decrease in fixed asset related payables	(91,769)	(985)
Increase/(Decrease) in payables	526,652	(479,231)
Items classified as financing activities		
(Increase)/Decrease in owner distribution accrual	11,337	19,774
	4,762,336	2,829,363

4 Related party transactions

Related party disclosures have not been made for transactions with related parties that are within a normal supplier or client/recipient relationship on terms and conditions no more or less favourable that those it is reasonable to expect the Business Unit would have adopted in dealing with the party at arm's length in the same circumstances.

5 Forestry Assets

The Biological Assets are valued at Market Value. Any movement in the valuation is recorded in the Profit and Loss Account.

	2016	2015
Current Market Value	16,400	11,500
Current increase (decrease) in Market Value	4,900	(19,556)

6 Property, plant and equipment

	Land	Sewerage Network	Buildings	Plant & Equipment	Total
Valuation / Cost					
Balance June 2014	2,342,000	52,722,129	221,900	10,924	55,296,953
Additions 2015		377,258		3,826	381,084
Abandoned Assets					0
Revaluation 2015		1,587,981	13,029	11,120	1,612,130
Revaluation transfer		(1,700,725)	(19,836)	(5,446)	(1,726,007)
Balance June 2015	2,342,000	52,986,643	215,093	20,424	55,564,160
Additions 2016		883,071	-	50,745	933,816
Abandoned Assets 2016					0
Revaluation 2016		812,101	17,461	25,717	855,279
Revaluation transfer 2016		(1,735,214)	(17,642)	(15,416)	(1,768,272)
Balance June 2015	2,342,000	52,946,601	214,912	81,470	55,584,983
Accumulated Depreciation					
Balance June 2014	-	-	-	-	-
Depreciation charge 2015		1,700,725	19,836	5,446	1,726,007
Revaluation transfer		(1,700,725)	(19,836)	(5,446)	(1,726,007)
Balance June 2015	-	-	-	-	-
Depreciation charge 2016		1,735,214	17,642	15,416	1,768,272
Revaluation transfer2016		(1,735,214)	(17,642)	(15,416)	(1,768,272)
Balance June 2015	-	-	-	-	-
Carrying amounts					
Balance June 2015	2,342,000	52,986,643	215,093	20,424	55,564,160
Balance June 2016	2,342,000	52,946,601	214,912	81,470	55,584,983

7 Financial Instruments

The Nelson Regional Sewerage Business Unit is party to financial instrument arrangements as part of its every day operations. These financial instruments include accounts receivable, accounts payable, loans and investments.

a) Credit Risk

Financial instruments which are potentially subject to credit risk consist of bank balances, accounts receivable and short term deposits.

	2016	2015
Bank Balances	344,874	359,307
Accounts Receivable	237,131	866,491

No collateral is held on the above accounts

b) Concentration

Concentrations of credit risk with respect to accounts receivable are high, with Nelson City Council, Tasman District Council and three private users as major customers. However, all are considered high credit quality entities.

c) Currency Risk

Nelson Regional Sewerage Business Unit has no currency risk as any financial instruments it deals with are all in New Zealand dollars.

d) Financial instruments

The Business Unit is party to financial instrument arrangements as part of its everyday operations. These financial instruments include cash and cash equivalents, accounts receivable and payable, investments, and loans which have all been recognised in the financial statements. Revenues and expenses in relation to all financial instruments are recognised in the Statement of Comprehensive Revenue and Expense.

8 Statement of Contingent Assets and Contingent Liabilities

The Business Unit has no contingent asset or contingent liabilities as at 30 June 2016 (2015 Nil).

9 Statement of Commitments

The Business Unit has no capital commitments as at 30 June 2016 (2015 Nil).

Operating Leases as lessor	2016	2015
Less that one year	16,000	16,000
One to Five years	16,000	32,000
Over five years	-	-

10 Explanation of major variances against budget

Statement of Comprehensive Revenue and Expense

Total Income is $597,796 less than budget due to lower interest rates reducing the rate of return on capital.
Total Expenses are $236,181 less than budget largely due to interest being $247,611 less than the budget due to a reduction in interest rate paid. Electricity is $106,348 less than budget as a result of optimising load into the ponds and lower pump costs. The cost of Bio Disposal was $107,442 more than budget due to increase volumes and additional cost of transporting to alternative disposal sites.