

Environmental and Social Monitoring Report

July - December, 2017

Kiribati: South Tarawa Sanitation Improvement Sector Project

Prepared by Ministry of Public Works and Utilities, Government of Kiribati for the Asian Development Bank

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Government of Kiribati
Ministry of Infrastructure and Sustainable Energy

Safeguards Monitoring Report

July-December 2017

South Tarawa Sanitation Improvement Sector Project



February 2018



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1 Executive summary

The South Tarawa Sanitation Improvement Sector Project (STISIP) includes rehabilitation of the salt water (SW) flushed sewerage system in the three urban areas of Betio, Bairiki and Bikenibeu in South Tarawa, Kiribati. The following report is to document the environmental activities, resettlement and related land issues for the period July to December 2017. The report is divided into three sections to cover the following projects:

- ICB 01 Rehabilitation of the SW and Sewer network in Betio, Bairiki and Bikenibeu,
- ICB 02 Upgrading the ocean outfalls at Betio, Bairiki and Bikenibeu,
- OSSP - On Site Sanitation Sub-Project spanning from the village of Teaoraereke to Bonriki.

The Engineer continues to conduct monthly audits of the Contractor's operations with compliance remaining good across the ICB 01 and ICB 02 projects. Works to relocate sewer Pump Station 5 in Bikenibeu due to land issues are now complete and the Contractor has demobilizing from site. Installation of a new salt water pipeline in the eastern and western extremities of Bikenibeu has been approved as an alternative to refurbishing the existing SW main that lies underneath the recently sealed road. All three Pump Station 1 footprints have been established with surveys conducted to determine the compensable amount to be paid to landowners. OSSP surveys were conducted with residents engaged at all 28 proposed installation locations. Several SW main leaks were reported by the Contractor in the second half of 2017, causing damage to infrastructure and evoking compensation claims from impacted residents. The ICB 01 BEIA and RAP were updated during the reporting period at the request of ADB.

Floatation of the Bikenibeu outfall resulted in preliminary repair measures that saw small amounts of sewerage being released at the reef's edge. Variations have been submitted and approved to resolve air movement and floatation issues in all three outfall pipelines.

Local contractors were invited to submit a bid for the construction of 34 separate toilet blocks in November 2017, with a second RFQ being issued in December 2017. Contractor award and construction commencement is expected in Q1 of 2018. The project BEIA was revised to reflect the recent change in construction documents with the associated environmental license gaining approval.

2 ICB 01

2.1 Status

ICB 01 involves the rehabilitation of the existing sewerage system in Betio, Bairiki and Bikenibeu. The works include rehabilitation of: the salt water system, manholes, sewerage, saltwater and sewer building services, pump stations, electrical/controls equipment, saltwater towers, and saltwater intakes. Relocation of residents and land clearing are at a minimum due to the majority of works being repair and restoration of previously installed assets and pipeline networks. Works are reaching completion with sewer cleaning and installation of a new salt water network in Bikenibeu remaining.

2.2 Salt Water Works

Intake Pump Stations are complete and commissioned in all three areas. Restoration of the SW networks are complete in Betio, Bairiki and central Bikenibeu, with works continuing in east and west Bikenibeu.

2.2.1 Bikenibeu Salt Water Network

Extensive components of the SW network lie under recently sealed roads in the furthestmost regions of east and west Bikenibeu, with restoration requiring an unknown but considerable amount of cut and repairs to the main road. The Contractor submitted an alternative design to offer SW services to the communities in Bikenibeu without the need for road cuts. This alternative approach involves installing the bypass lines used under ICB 02 in trenches along the roadside.

The Engineer submitted a technical note to the Employer on 25 August 2017 that included two options for completing SW works in Bikenibeu. The Option 1 involved road cut and repairs at all inaccessible tapping bands and highlighted the negative public perception that the works may incur. Option 2 included installation of a new SW main as described above. The technical note makes the recommendation for Option 2 to be pursued pending approval and results from relevant authorities and community survey in the proposed areas.

MISE advised that under the *highway protection act 1989* and the *State Acquisition of Lands Ordinance* a road reserve of nine metres exists on either side of the centre line of the road recently constructed under Kiribati Road Rehabilitation Project. In addition, MISE has advised of a permit under the *Highway Authority* that permits undertaking vital excavation works within the road zone.

SMEC developed a pamphlet to be dispersed by the community mobilisers in the area of proposed construction. The purpose of this exercise was to gauge reaction to the planned construction and identify any land issues before the commencement of work. This pamphlet is attached at Appendix B. The pamphlet included a phone number for residents to raise their concerns or voice comments in relation to construction works in their community. No phone calls were received. A summary of all interviews with local landowners is also included at Appendix B. Most comments in response to the pamphlet were related to SW leaks and the impact this may have on local trees. The residents were assured that the works are to be completed at the highest of standards as to minimise occurrence of SW leaks and that the taps will be installed at locations of their choice and for use by the community.

MISE approved works on receipt of the community survey and on confirming the rights under the highway act. Construction is scheduled to begin in early 2018 with resident consultation to continue as works progress from one household to the next.

Servicing the entire sewer network with SW will require branch lines that extend from the SW main and onto private property. These branch lines are to consist of 32 mm flexible pipe that can be easily redirected to avoid permanent structures or trees. Prior to work, residents will be consulted regarding access to their land and their preference in regard to location of the SW tap. This approach of engaging the landowner and heeding their advice and preference aims to mitigate risks of issues related to land access and compensation. Trees will be removed at the discretion of the local land owner and will be surveyed as to allow appropriate compensation to be paid.

Trees that impede the installation of the SW main along the road will be removed with the land owner to be compensated fairly. Residents may encounter slight disruption to access of their driveway as construction proceeds. The Engineer and Contractor will regularly update residents of these works and document issues as they arise.

2.2.2 Salt Water Leaks

Two major saltwater network failures, and resulting leaks, were identified in the reporting period. SW main failures remain one of the biggest risk posed to the project in terms of environmental impact and effect on residents.

One of the incidents was due to a refurbished SW main failure occurring underneath the feeder road on the north side of Bairiki. This incident resulted in considerable damage to the road surface above requiring temporary isolation to the section of the network. On investigation a large split along the crown of the pipe was discovered. This suggest failure was due to external forces acting on the main and was not due to a tapping band or recent repair activity. The Contractor replaced the section of failed pipe and resealed the road with a previously approved concrete patch methodology.

A salt water leak is reported to have occurred on 4 November 2017 in Bikenibeu. Local residents contacted PUB to report the incident who then contacted CCB. A CCB representative attended the site and proceeded to isolate the section of network. Considerable damage was sustained by surrounding trees and gardens with residents claiming their household well was contaminated by the SW leak.

MISE received a letter from Mr Farran Redfern on 14 December 2017 that detailed the SW leak event. Mr Redfern expressed his anger over the situation and stated that he seeks compensation for losses incurred. Mr Redfern claims the loss of an unknown quantity of fruit trees and states his well water is now brackish. The Engineer was not notified of this even until early 2018 leading to no survey or inspection being conducted. CCB's incident report states the SW line failed at the connection point of a previously installed tapping band. The section of pipe was previously pressure tested and passed, with the failure occurring some three months after the installation of the tapping band. No inspection was conducted by the Engineer or Employer and the cause remains unknown. No compensation amount has been communicated and the matter remains open at the time of writing.

2.3 Pump Station 1

All three PS1s are complete with the final footprint of the installations being determined. Surveys have been conducted at all sites with documentation forwarded to the Employer for further processing. SMEC awaits advice on appropriate compensation amounts and will provide further information as required. As it stands, the process is as follows:

- SMEC arranges for a survey of land or tree to be removed. SMEC determines if removed trees are compensable by MISE or The Contractor.
- SMEC receives survey documentation from LMD and forwards it to MISE.

- MISE issues a letter to LMD identifying that the land or tree claim is made under STSISP and compensation is to be derived from the associated account.
- LMD identifies the rightful landowner and authorises payment accordingly.

Land owners at PS1 Bikenibeu have lodged repeated claims for compensation to MISE and Lands Management Division (LMD). These landowners have visited the SMEC office seeking an update on their claim. These claims appear legitimate and it is understood that the above process is in motion with compensation forthcoming.

2.4 Septage Receiving Unit

The anaerobic digesters (AD) originally proposed were deemed to be unfeasible and have been deleted from the works. A solid drying bed at Nanikai Landfill was proposed as an alternative to the AD for the purpose of sewer-solids removal and disposal. The drying bed concept was superseded by proposal of a septage receiving station which is generally deemed to be a more reliable system for solids removal. PUB advised they would prefer the SRU to be located in Betio at PS1.

The septage receiving unit (SRU) has been installed adjacent to the Betio outfall screen with commissioning expected to occur in the first quarter of 2018. Prior to installation of the SRU, a survey was conducted that was attended four ECD officers. The results of this survey are included in Appendix C. Adverse effects of the installation of the SRU include possible odour issues, noise pollution and increase in local traffic as the unit is operated. During the consultation, a resident raised the issue of loose pipe laying adjacent to her house and sublease of land adjacent to the proposed location. It has been established that land adjacent to the PS1 is government lease land and boundary for SRU was previously established due to the install occurring within boundary of existing PS1 and outfall screen. The pipe was relocated from the immediate area with installation of the SRU being approved by MISE and appropriate authorities.

2.5 Pump Station 5

Access to the initial PS5 site continued through the reporting period. Due to access being restricted by a local resident, Mr Temeaa, a new pump station was constructed adjacent to the existing PS5 on government lease land. Access was required to the existing pump station for decommissioning works and to gain access to the sewer line that serviced a local school. The Contractor continued works on the new PS5 while the land access issues were elevated within GoK.

In July 2017, the MISE secretary advised that cabinet had authorized entry into the disputed land. The Secretary advises that "Cabinet tasked MISE, PUB, OAG, KPS (Police) and CCB to ensure proper handling of the matter."

A meeting was proposed at the PUB office on 29 August with invitations extended to representatives from PUB, MISE, SMEC and Kiribati Police. The meeting was attended by PUB, MISE and SMEC representatives with the TA advising he would follow up with Kiribati Police and offer advice regarding their involvement with access to the site.

A document titled 'Notice to Enter' was delivered to Mr Temeaa on 14 August advising, that in 14 days PUB and their agents would be entering the land to perform works on the PUB asset as is their prerogative under Section 11 of the Public Utilities Board Ordinance. This document was delivered by Police, and is attached in Appendix D. It was reported that there was no altercation during the delivery of the letter.

CCB was notified of their right to enter the land with some confusion surrounding the 14 days being calendar or business days. CCB entered the disputed land on 11 September 2017 accompanied by police officers. Mr Temeaa was reported to have shown threatening body language to the police and CCB with no serious altercations occurring. The police remained onsite for the duration of the works.

A meeting was held on the 21 September 2017 that included PUB advisor, MISE Deputy Secretary and Engineers representatives. It was advised that Mr Temeaa's lawyer had issued requests to the courts to both cease all works on the disputed land and to remove the pump station. No further communication on the matter was received by the Engineer and works were unobstructed. The Engineer understands there continues to be discussion at a government level regarding the recent works, with the matter remaining unresolved.

CCB demobilized from site in the first week of October after completing all works. The existing Pump station was demolished and replaced with a man hole. The school sewer line was cleaned and inspected to ensure correct operation. There were no further altercations between the residents, Contractor or Police.

Construction of the new PS5 required removal of several trees, for both vehicle access and construction. The sewer line that connects the new pump station to the existing network required installation resulting in considerable trenching works. These trenching works also required the removal of fruit bearing trees. The Engineer requested surveys of the trees to be removed, with all required documentation passed onto MISE for review and issue to LMD.

2.6 Environmental Monitoring

The Engineer continues to conduct monthly audits of CCB – generally compliance is good with no findings of significance to report. These reports have been forwarded to the Environmental Officer at MELAD. the monthly audits are presented in Appendix A.

2.7 Resettlement Status

All but three pump stations within ICB 01 are located on Government Lease Land. The three pump stations of interest are all located in Bikenibeu, Pump Stations 1, 5 and 6. Pump Station 6 is located on land owned by three parties – the division of compensation is not settled but at present there is no impediment to construction. Access to the existing PS 5 has been resolved from a construction standpoint but ongoing legal action exists. Land issues at PS 1 are not currently an impediment but are worth noting.

2.8 Recent Documentation Updates.

The ICB 01 BEIA was revised in the reporting period. Changes included update of actions and resolutions around PS 5 Bikenibeu, inclusion of the HDPE alignment in Bikenibeu, details on the installed SRU and removal of details related to the outfalls. The ICB 02 BEIA includes construction and environmental considerations related to installation and operation of the outfalls. The ICB 01 Resettlement Action Plan was resubmitted in November. The report now documents the consultations that occurred with local resident adjacent to the selected SRU site at PS 1 in Betio.

3 ICB 02

3.1 Status

Deep water works under ICB 02 were completed by the JV in the first half of 2017 with works on the intertidal reef and connection to the outfall screens continuing through the reporting period. Bikenibeu and Bairiki outfall lines were brought online with variation works to install air valves and additional anchor mattresses remaining.

3.2 Bikenibeu Outfall Floatation

PS 1 Bikenibeu routine inspections on 17 July 2017 identified the depth of waste in the screen channel to be higher than is normally observed. This suggested increased flow resistance occurring downstream in the form of a blockage. CCB inspected the outfall line using a CCTV camera and identified coral rocks, footwear, plastic bottles and coconuts. These items could not have been introduced into the outfall under normal operation leading to the agreement that the objects were dropped into the screens outfall line. The items were removed and the site was put under watch by a security guard followed by the installation of plywood covers.

The following day, CCB informed the Engineer that 30 m of the outfall line at Bikenibeu was floating beyond the intertidal reef. In order to sink the pipe, the PS was shut down and a 6 mm hole was drilled into the crown of the floating section. The pipe then proceeded to sink under the weight of the attached concrete blocks.

A shorter section of the pipe, roughly 12 m in length, was noted to be floating on 23 July 2017. This section was upstream of the air hole previously drilled. A second hole was drilled to release the trapped air.

During continued operation of the outfall, sewerage was observed to be escaping the outfall pipe through the previously drilled 6mm holes. This escape of waste is noted in the environmental audits in Appendix A. Due to the priority of keeping the outfall and pump station operational, the penetrations were not repaired due to likelihood of further floatation events while an incident report was compiled and solution to gas entrapment in the pipe was addressed. Over time, effluent escape was observed to be reducing as the penetration in the pipe was filled by sewerage and other material that existed in the outfall pipeline.

Measures to address floatation events have been recommended and approved under the ICB 02 contract with air valves and additional mattresses to be installed on all three outfalls in Bikenibeu, Bairiki and Betio.

Extra works required to rectify the floating pipe and installation of valves and pipes will require access to the intertidal reef at low tides. The impact on local residents is predicted to be at a minimum as access ways exist from previous construction activities and all works are to occur on the uninhabited intertidal reef.

3.3 Environmental Safeguards

SMEC undertook routine monthly audits of the JV (See Appendix 1 for more information). There are no noteworthy deficiencies in the reporting period except for the aforementioned release of sewerage at the reef edge.

3.4 Social Safeguards

Works to install the Bairiki outfall require access to LDS church in West Bairiki. The Contractor was instructed to align the pipe as to cause minimal damage to trees and existing sea wall. Works involved trenching through the church yard and installation of new outfall line under the existing sea wall. Works were completed with no concerns raised by LDS personal with the Engineer conducting post construction inspections to ensure property was left in as good or better condition as it was found.

Betio PS1 is located on Government Lease Land resulting in no relocation or major obstruction to local residents. The existing outfall line was demolished and replaced with the new HDPE line. No tree removal or local resident relocation was required.

Extra works required to rectify the floating pipe and installation of valves and pipes in Bikenibeu will require access to the intertidal reef at low tides. The Contractor continues to employ a 20 tonne excavator with rubber tracks when working on the reef and will use existing access ways with local resident consultation undertaken prior to previous in scope works.

4 On Site Sanitation Sub-Project

4.1 Status

The OSSP request for quotation (RFQ) was issued to six local contractors in October 2017. Five bids were submitted in response. The tender was cancelled in November due to lack in conformance of submitted bids and the potential contractors advised accordingly. The RFQ was re-issued in December 2017. Contract award is expected to occur in the first quarter of 2018.

The project consists of the installation of 34 toilet blocks and associated drain fields in 28 different locations between the villages of Teaoraereke and Bonriki. The design of the installations has been revised considerably since project inception with the primary concept being a sub grade septic tank leading to effluent treatment components in the form of denitrification chambers and evapo-transpiration trenches.

Initial installation location surveys were conducted in 2014 by the then specialist sub-consultant. Samplings of ground water depth and well water salinity was recorded, in addition to consultation of local residents. An agreement in principle was established with the residents that included approval of installation of toilet blocks on the land, with the residents gaining access to the installation and being responsible for the maintenance and correct operation of the system. In return, the toilet would be installed at no cost.

4.2 Environmental Safeguards

Prior to construction, the successful contractor is to install three ground water monitoring tubes on site. These three monitoring points will be oriented so as to allow samples to be taken from the location of a future soak away field and in close vicinity to the household well. The purpose of this exercise is to ascertain existing water quality at that location and monitor any impact the project may have on the local area in terms of water contamination. Equipment to conduct this exercise is included in SMEC V013 and has recently been approved for purchase. Ongoing sampling is to be conducted by MISE.

Equipment purchased by the consultant under V013 will be used to quantify and test the following:

- Salinity (g/L)
- pH
- Ammonia $\text{NH}_3\text{-N}$ (mg/L)
- Nitrate $\text{NO}_4\text{-N}$ (mg/L)
- Total Ortho-Phosphate (mg/L)
- Faecal Coliform and E.coli presence.

Tests will be conducted for a period of up to three years post construction by MISE, with the installation to be decommissioned if groundwater contamination is identified.

The OSSP BEIA also includes measures to mitigate negative environmental impact including pre-construction preparation with local residents on how to maintain the installation in order to keep the installation functioning. The BEIA also includes standard measures including a pre-construction Environmental Mitigation Table that sets out roles and responsibilities between MISE, SMEC, the Contractor, and local residents.

4.3 Local Resident Consult

The 28 locations were visited by the Engineer in September 2017 with residents engaged to clarify approval of the installation and to field any questions or issues related to the upcoming project. The majority of feedback was related to when the project would begin with residents communicating that they have been waiting years for the project to come to fruition. The residents were asked to sign a non-legal document and provide contact details – a sample of this document is included in Appendix E.

4.4 Updated Documentation

The BEIA for the OSSP project was updated in October 2017 after it was discovered to refer to the previous construction design, included detail that was deemed to be in excess of what could be locally achievable, and did not include suitable water sampling procedures. The BEIA was submitted to MELAD in November 2017 for review with approval issued shortly after. The Associated Environmental license was also revised and issued to the Engineer in November. Contractors who received the project RFQ were issued with the BEIA and advised it is a contract document and is to be considered when submitting a bid for associated constructions works.

Appendix A ICB 01/02 EMP Compliance Monitoring and Audit

ICB 01 July

ICB :01	Environment Monitoring and Auditing	Date of Inspection :	10th August 2017	Site : Records – Interview with Noel Biltris in Bikenibeu Monitoring –Bikenibeu
Environmental Issue		Monitoring Detail	Issues	Actions taken
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil		
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous wastes are shipped out of Kiribati at the completion of the project.	Nil		
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken	Work at PS 5 still await Government approval to proceed		
2.3 Accidental damage to utilities.	2.3 As above.	Nil		
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Complaint from the people living close to PS 1 Bikenibeu about the unpleasant smell emitted from the pump station.	Complaint was reported to SMEC. PUB and SMEC have visited the site to evaluate the cause of the problem.	
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All machinery is in good working order		

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles	No pollution. 100 litres Petrol, 100 litres diesel, less than 100 litres lubrication oil and engine oil are the only forms of chemical kept in containers. Refuel at fuel stations.	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports	.	

ICB 01 August

ICB :01 Environment Monitoring and Auditing		Date of Inspection : 13 & 14 September 2017		Site : Records – Interview with Noel Biltris at Teaoaraereke Bungalow	
				Monitoring –Bikenibeu	
Environmental Issue	Monitoring Detail	Issues	Actions taken		
1.3 Occupational health and safety measures	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil			
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous wastes are shipped out of Kiribati at the completion of the project.	Sand from PS at Bairiki was disposed at Nanikai landfill.			
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Work proceeds at PS 5.			
2.3 Accidental damage to utilities.	2.3 As above.	Nil			
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Nil			
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All machinery is in good working order.			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	No pollution. 100 litres Petrol, 100 litres diesel, less than 100 litres lubrication oil and engine oil are the only forms of chemical kept in containers. Refuel at fuel stations.	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports		

ICB 01 September

ICB :01 Environment Monitoring and Auditing		Date of Inspection:	9 & 10 October 2017	Site: Records – Interview with Michael Simmons	
				Monitoring –Bikenibeu	
Environmental Issue	Monitoring Detail	Issues	Actions taken		
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil			
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous wastes are shipped out of Kiribati at the completion of the project.	Sand from jetted pipelines disposed at Bikenibeu disposal site. Approximately 4 truckloads.			
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Nil			
2.3 Accidental damage to utilities.	2.3 As above.	Nil			
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor.	Nil			
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All machinery is in good working order.			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles	No pollution. 100 litres Petrol, 100 litres diesel, less than 100 litres lubrication oil and engine oil are the only forms of chemical kept in containers. Refuel at fuel stations.	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.	.	

ICB 01 October

ICB :01 Environment Monitoring and Auditing Date of Inspection : 28th November 2017 Site : Records – Interview with Michael Simmons Monitoring –Bikenibeu			
Environmental Issue	Monitoring Detail	Issues	Actions taken
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil	
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste is shipped out of Kiribati at the completion of the project.	Sand from jetted saltwater pipelines at Bikenibeu disposed at Nanikai disposal site. Approximately 3 m ³ .	
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken	Nil	
2.3 Accidental damage to utilities.	2.3 As above.	Nil	
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor.	Nil	
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All machinery is in good working order.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	No pollution. 100 litres Petrol, 100 litres diesel, less than 100 litres lubrication oil and engine oil are the only forms of chemical kept in containers. Refuel at fuel stations.	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		

ICB 01 November & December

ICB :01 Environment Monitoring and Auditing Date of Inspection : 14th December 2017 Site : Records – Interview with Michael Simmons Monitoring –Bikenibeu 15 December 2017			
Environmental Issue	Monitoring Detail	Issues	Actions taken
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil	
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste are shipped out of Kiribati at the completion of the project.	Approximately 3 m ³ of sand from jetted salt water main were disposed at Nanikai in November and less than 1 m ³ in December.	
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Nil	
2.3 Accidental damage to utilities.	2.3 As above.	Nil	
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All machinery is in good working order.	
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	No pollution. 100 litres Petrol, 100 litres diesel, less than 100 litres lubrication oil and engine oil are the only forms of chemical kept in containers. Refuel at fuel stations.	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports	.	

ICB 02 July

ICB :01 Environment Monitoring and Auditing		Date of Inspection :	10 August 2017	Site : Records – Interview with Noel Biltris Monitoring –Bikenibeu work site	
Environmental Issue	Monitoring Detail	Issues	Actions taken		
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil			
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste are shipped out of Kiribati at the completion of the project.	Waste pipes from Bairiki outfall are being reused by Prisoners. Concrete bits and pieces reused for seawall by one local staff. There are still pieces of pipes lying over the reef flat at Bairiki outfall site	To be taken off		
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Nil			
2.3 Accidental damage to utilities.	2.3 As above.	Nil			
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Nil			
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	Nil			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	Nil	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		
2.9 Damage to and /or loss of coral.	The replacement of the old outfall pipes could impact live coral in the direct path of the pipeline trenches. To address this a detailed marine survey was completed and existence of all coral species mapped. Based on this survey a total of 5-7 m ² of coral could be impacted. The use of an experienced marine ecologist to help locate the outfall when near corals and to lead the relocation of coral heads will minimize further the minor impact of this work.	Pipes have been dug out of the reef flat at Bairiki during low tide and no coral damage has occurred.	
3.0 Poor Trenching work area controls.	The Contractor will be required to mark work area corridors with anchored buoys (14m construction width), ensure that rubber tracked, light weight excavator is used; and optional approach to pipeline replacement be reviewed and the best approach applied.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
3.1 Polluting anchor fabrication and batch plant operations.	Runoff from any staging area fabrication sites will need to be diverted to a detention area to reduce the amount of sediment reaching the sea. If a local fabrication and batch plant is used, the Contractor will need to provide an inspection certificate, signifying that operations are in compliance with all Kiribati regulations. The Contractor will be responsible for assisting the local provider to become more environmentally compliant	Nil	
3.2 Diffuser unit not suited for site conditions, leading to potential effluent pollution.	Prior to the diffuser being attached to each pipeline, it will be inspected and certified as being adequate for this specific application.	Diffuser has been assembled and deployed at the three outfall sites. Work completed.	
3.3 Inadequate worker sanitation facilities provided.	The Contractor will be required to make arrangements for workers to use public/private toilet facilities or to provide portable toilets such as porta-potties.	Local staff are using private toilets close to PS1 at Bairiki.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
<p>3.5</p> <p>Effluent plume reaching shore and causing GI and other microbial and viral sicknesses.</p>	<p>Plume monitoring at three diffuser sites to be implemented starting on year one – as defined in the IEE Section 7.3.2. Monitoring should be conducted during normal and spring tide conditions, once every 3 months at the three diffuser sites. Parameters to be monitored should be current speed and direction at 3 depths and at the same time pH, TSS, turbidity, salinity, total phosphorus, Nitrate (NO₃) and at four locations, i.e. two upstream (25m and 50m) and two downstream (25m and 50m) of the diffuser immediately over the diffuser, 20m downstream, and 50m downstream and 100m downstream. Prior to the start of sampling a tracer should be introduced into the wastewater stream to establish the general movement of the plume.</p>	<p>Air is trapped inside the pipe causing the pipe to float.</p>	<p>Hole is drilled to let the trapped air escape, consequently small volumes of effluent have also escaped from the pipe.</p> <p>The hole will be recapped by a stainless steel bolt and the affected section of the outfall pipe realigned.</p>

ICB 02 August

ICB :01 Environment Monitoring and Auditing Date of Inspection : 13 & 14 September 2017 Site : Records – Interview with Noel Biltris at Teaoraereke Bungalow Monitoring –Bikenibeu work site			
Environmental Issue	Monitoring Detail	Issues	Actions taken
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil	
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous wastes are shipped out of the Kiribati at the completion of the project.	There are still pieces of pipes lying over the reef flat at Bairiki outfall site.	To be taken off
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Nil	
2.3 Accidental damage to utilities.	2.3 As above.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Nil	
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct Contractor to correct problem within 2 days.	Nil	
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	Nil	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		
2.9 Damage to and /or loss of coral.	The replacement of the old outfall pipes could impact live coral in the direct path of the pipeline trenches. To address this a detailed marine survey was completed and existence of all coral species mapped. Based on this survey a total of 5-7 m ² of coral could be impacted. The use of an experienced marine ecologist to help locate the outfall when near corals and to lead the relocation of coral heads will	Pipes have been dug out of the reef flat at Bairiki during low tide and no coral damage has occurred.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
	minimize further the minor impact of this work.		
3.0 Poor trenching work area controls.	The Contractor will be required to mark work area corridors with anchored buoys (14 m construction width), ensure that rubber tracked, light weight excavator is used; and optional approach to pipeline replacement be reviewed and the best approach applied.	Nil	
3.1 Polluting anchor fabrication and batch plant operations.	Runoff from any staging area fabrication sites will need to be diverted to a detention area to reduce the amount of sediment reaching the sea. If a local fabrication and batch plant is used, the Contractor will need to provide an inspection certificate, signifying that operations are in compliance with all Kiribati regulations. The Contractor will be responsible for assisting the local provider to become more environmentally compliant	Nil	
3.2 Diffuser unit not suited for site conditions, leading to potential effluent pollution.	Prior to the diffuser being attached to each pipeline, it will be inspected and certified as being adequate for this specific application.	Work completed.	
3.3 Inadequate worker sanitation facilities provided.	The Contractor will be required to make arrangements for workers to use public/private toilet facilities or to	Local staff are using private toilets close to PS1 at Bairiki.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
	provide portable toilets such as porta-potties.		
<p>3.5</p> <p>Effluent plume reaching shore and causing GI and other microbial and viral sicknesses.</p>	<p>Plume monitoring at three diffuser sites to be implemented starting on year one – as defined in the IEE Section 7.3.2. Monitoring should be conducted during normal and spring tide conditions, once every 3 months at the three diffuser sites. Parameters to be monitored should be current speed and direction at 3 depths and at the same time pH, TSS, turbidity, salinity, total phosphorus, Nitrate (NO₃) and at four locations, i.e. two upstream (25 m and 50 m) and two downstream (25 m and 50 m) of the diffuser immediately over the diffuser, 20 m downstream, and 50 m downstream and 100 m downstream. Prior to the start of sampling a tracer should be introduced into the wastewater stream to establish the general movement of the plume.</p>	<p>The drilled hole noticed last inspection is still there</p>	<p>The hole will be recapped by a stainless steel bolt and the affected section of the outfall pipe realigned.</p>

ICB 02 September

ICB :01 Environment Monitoring and Auditing		Date of Inspection : 9 & 10 October 2017		Site : Records – Interview with Michael Simmons			
Monitoring –Bikenibeu work site							
Environmental Issue		Monitoring Detail		Issues		Actions taken	
1.3 Occupational health and safety measures.		1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.		Nil			
2.1 Generation of construction waste.		2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste are shipped out of Kiribati at the completion of the project.		There are still pieces of pipes lying over the reef flat at Bairiki outfall site.		To be taken off.	
2.2 Accidental damage to property.		2.2 Visual inspection of project sites, and records of grievance made and actions taken.		Nil			
2.3 Accidental damage to utilities.		2.3 As above.		Nil			
2.4 Noise nuisance from construction activities.		2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor.		Nil			
2.5 Exhaust emissions and black smoke excessive.		2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.		Nil			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	Nil	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		
2.9 Damage to and /or loss of coral.	The replacement of the old outfall pipes could impact live coral in the direct path of the pipeline trenches. To address this a detailed marine survey was completed and existence of all coral species mapped. Based on this survey a total of 5-7 m ² of coral could be impacted. The use of an experienced marine ecologist to help locate the outfall when near corals and to lead the relocation of coral heads will minimize further the minor impact of this work.	Nil	
3.0 Poor Trenching work area controls.	The Contractor will be required to mark work area corridors with anchored buoys (14 m construction width), ensure that rubber tracked, light weight excavator is used; and optional approach to pipeline replacement be reviewed and the best approach applied.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
3.1 Polluting anchor fabrication and batch plant operations.	Runoff from any staging area fabrication sites will need to be diverted to a detention area to reduce the amount of sediment reaching the sea. If a local fabrication and batch plant is used, the Contractor will need to provide an inspection certificate, signifying that operations are in compliance with all Kiribati regulations. The Contractor will be responsible for assisting the local provider to become more environmentally compliant.	Nil	
3.2 Diffuser unit not suited for site conditions, leading to potential effluent pollution.	Prior to the diffuser being attached to each pipeline, it will be inspected and certified as being adequate for this specific application.	Work completed.	
3.3 Inadequate worker sanitation facilities provided.	The Contractor will be required to make arrangements for workers to use public/private toilet facilities or to provide portable toilets such as porta-potties.	Local staff are using private toilets close to PS1 at Betio.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
<p>3.5</p> <p>Effluent plume reaching shore and causing GI and other microbial and viral sicknesses.</p>	<p>Plume monitoring at three diffuser sites to be implemented starting on year one – as defined in the IEE Section 7.3.2. Monitoring should be conducted during normal and spring tide conditions, once every 3 months at the three diffuser sites. Parameters to be monitored should be current speed and direction at 3 depths and at the same time pH, TSS, turbidity, salinity, total phosphorus, Nitrate (NO₃) and at four locations, i.e. two upstream (25 m and 50 m) and two downstream (25 m and 50 m) of the diffuser immediately over the diffuser, 20 m downstream, and 50 m downstream and 100 m downstream. Prior to the start of sampling a tracer should be introduced into the wastewater stream to establish the general movement of the plume.</p>	<p>The drilled hole noticed last inspection is still there.</p>	<p>Air valve could be used to let air out of the pipe.</p>

ICB 02 October

ICB :02 Environment Monitoring and Auditing		Date of Inspection :	28 November 2017	Site : Records – Interview with Michael Simmons	
				Monitoring –Betio 25 November 2017	
Environmental Issue	Monitoring Detail	Issues	Actions taken		
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil			
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste are shipped out of Kiribati at the completion of the project.	Nil			
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken	Nil			
2.3 Accidental damage to utilities.	2.3 As above.	Nil			
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Nil			
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All equipment is in good working order.			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	Nil	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		
2.9 Damage to and/or loss of coral.	The replacement of the old outfall pipes could impact live coral in the direct path of the pipeline trenches. To address this a detailed marine survey was completed and existence of all coral species mapped. Based on this survey a total of 5-7 m ² of coral could be impacted. The use of an experienced marine ecologist to help locate the outfall when near corals and to lead the relocation of coral heads will minimize further the minor impact of this work.	Nil	
3.0 Poor Trenching work area controls.	The Contractor will be required to mark work area corridors with anchored buoys (14 m construction width), ensure that rubber tracked, light weight excavator is used; and optional approach to pipeline replacement be reviewed and the best approach applied.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
3.1 Polluting anchor fabrication and batch plant operations.	Runoff from any staging area fabrication sites will need to be diverted to a detention area to reduce the amount of sediment reaching the sea. If a local fabrication and batch plant is used, the Contractor will need to provide an inspection certificate, signifying that operations are in compliance with all Kiribati regulations. The Contractor will be responsible for assisting the local provider to become more environmentally compliant	Nil	
3.2 Diffuser unit not suited for site conditions, leading to potential effluent pollution.	Prior to the diffuser being attached to each pipeline, it will be inspected and certified as being adequate for this specific application	Work completed.	
3.3 Inadequate worker sanitation facilities provided.	The Contractor will be required to make arrangements for workers to use public/private toilet facilities or to provide portable toilets such as porta-potties.	Local staff are using private toilets close to PS1 at Betio.	

Environmental Issue	Monitoring Detail	Issues	Actions taken
3.5 Effluent plume reaching shore and causing GI and other microbial and viral sicknesses.	Plume monitoring at three diffuser sites to be implemented starting on year one – as defined in the IEE Section 7.3.2. Monitoring should be conducted during normal and spring tide conditions, once every 3 months at the three diffuser sites. Parameters to be monitored should be current speed and direction at 3 depths and at the same time pH, TSS, turbidity, salinity, total phosphorus, Nitrate (NO ₃) and at four locations, i.e. two upstream (25 m and 50 m) and two downstream (25 m and 50 m) of the diffuser immediately over the diffuser, 20 m downstream, and 50 m downstream and 100 m downstream. Prior to the start of sampling a tracer should be introduced into the wastewater stream to establish the general movement of the plume.	The drilled hole noticed last inspection is still there	Air valve will be used to let air out of the pipe.

ICB 02 November & December

ICB :02 Environment Monitoring and Auditing		Date of Inspection :	14 December 2017	Site : Records – Interview with Michael Simmons	
				Monitoring –Betio 25 November 2017	
Environmental Issue	Monitoring Detail	Issues	Actions taken		
1.3 Occupational health and safety measures.	1.3 Ensure all staff are wearing appropriate PPE. JSEAs for work tasks have been completed and signed.	Nil			
2.1 Generation of construction waste.	2.1 Inspection to ensure that non-hazardous materials are collected and disposed of in the landfill, and hazardous materials are stored safely. Inspection to ensure that all hazardous waste are shipped out of Kiribati at the completion of the project.	Nil			
2.2 Accidental damage to property.	2.2 Visual inspection of project sites, and records of grievance made and actions taken.	Nil			
2.3 Accidental damage to utilities.	2.3 As above.	Nil			
2.4 Noise nuisance from construction activities.	2.4 As above and conduct a set of interviews with closest residents to establish impacts and actions taken by the Contractor	Nil			
2.5 Exhaust emissions and black smoke excessive.	2.5 As above and check for maintenance records, age of equipment and operation within specifications and instruct the Contractor to correct problem within 2 days.	All equipment is in good working order.			

Environmental Issue	Monitoring Detail	Issues	Actions taken
2.6 Pollution from chemicals and fuels.	2.6 Regular inspection of sites for pollution from storage of hazardous materials and likely leakages and exhaust emissions from the drilling rigs and vehicles.	Nil	
2.7 Removed trees and vegetation along sewer line trenches not replanted.	2.7 Confirm that revegetation has taken place or local consultation agreed to another approach to mitigate losses.	Nil	
2.8 Failure to prepare and submit monitoring checklist reports.	2.8 Have available full record of monthly monitoring checklist reports.		
2.9 Damage to and/or loss of coral.	The replacement of the old outfall pipes could impact live coral in the direct path of the pipeline trenches. To address this a detailed marine survey was completed and existence of all coral species mapped. Based on this survey a total of 5-7 m ² of coral could be impacted. The use of an experienced marine ecologist to help locate the outfall when near corals and to lead the relocation of coral heads will minimize further the minor impact of this work.	Nil	

Environmental Issue	Monitoring Detail	Issues	Actions taken
3.0 Poor Trenching work area controls.	The Contractor will be required to mark work area corridors with anchored buoys (14 m construction width), ensure that rubber tracked, light weight excavator is used; and optional approach to pipeline replacement be reviewed and the best approach applied.	Nil	
3.1 Polluting anchor fabrication and batch plant operations.	Runoff from any staging area fabrication sites will need to be diverted to a detention area to reduce the amount of sediment reaching the sea. If a local fabrication and batch plant is used, the Contractor will need to provide an inspection certificate, signifying that operations are in compliance with all Kiribati regulations. The Contractor will be responsible for assisting the local provider to become more environmentally compliant	Nil	
3.2 Diffuser unit not suited for site conditions, leading to potential effluent pollution.	Prior to the diffuser being attached to each pipeline, it will be inspected and certified as being adequate for this specific application.	Work completed.	
3.3 Inadequate worker sanitation facilities provided.	The Contractor will be required to make arrangements for workers to use public/private toilet facilities or to provide portable toilets such as porta-potties.	Local staff are using private toilets close to PS1 at Betio	

Environmental Issue	Monitoring Detail	Issues	Actions taken
<p>3.5</p> <p>Effluent plume reaching shore and causing GI and other microbial and viral sicknesses.</p>	<p>Plume monitoring at three diffuser sites to be implemented starting on year one – as defined in the IEE Section 7.3.2. Monitoring should be conducted during normal and spring tide conditions, once every 3 months at the three diffuser sites. Parameters to be monitored should be current speed and direction at 3 depths and at the same time pH, TSS, turbidity, salinity, total phosphorus, Nitrate (NO₃) and at four locations, i.e. two upstream (25 m and 50 m) and two downstream (25 m and 50 m) of the diffuser immediately over the diffuser, 20 m downstream, and 50 m downstream and 100 m downstream. Prior to the start of sampling a tracer should be introduced into the wastewater stream to establish the general movement of the plume.</p>	<p>The drilled hole noticed last inspection is still there</p>	<p>Air valve will be used to let air out of the pipe.</p>

Appendix B Bikenibeu Salt Water Pipeline Installation

Copy of flyer distributed to residents along the proposed alignment

**BIKENIBEU SALT WATER NETWORK**

- a) Government Funded Program to Benefit Community.
- b) Construction of Salt Water Pipe and taps
- c) All Fruit Bearing trees compensated & Damage Repaired
- d) Salt Water to Flush Sewered Toilets

For more information

Direct Comments to

Rickaare Bonto on 7309 6140Between 21st August & 8th September.

Your Comments will be passed to Government of Kiribati for consideration.

Summary of comments and responses to the survey and distribution of flyer.

DAY 1: Mormon Church – RAK Center

Date	No. of household	No. of brochures	Complaint/Comment	Name & Contact number
21/08/17	40	40	<ul style="list-style-type: none"> - Asked if possible to connect toilet to SW line. - Who's responsible to maintain for the damages of taps? - Wants to build a fence to protect taps from vandalism. 	Tiitan- 73068129
			<ul style="list-style-type: none"> - Worried about SW impacting health of trees. 	Mareweiti
			<ul style="list-style-type: none"> - Worried about damage to electricity cables & trees during construction. - Their neighbours are not connected to sewer system and use a Pit. - Concerned about leaking/ unusable taps. 	Itinrerei
			<ul style="list-style-type: none"> - Asked if possible to extend tap far from the road, if the house is connected to sewer. - Concerned about the existing pipewhy don't they use the old one that was used before. 	Uriam- 73062040

DAY 2: Borerei Store to Outfall zone.

Date	No. of household	No. of brochures	Complaint/Comment	Name & Contact number
22/08/2017	40	40	<ul style="list-style-type: none"> - Concerned about trees and plants if the SW pipe is split. - Need the pipe to lead to the public toilet or household instead of using taps. 	Merry 73002367 or 73032820
			<ul style="list-style-type: none"> - Use well water in their toilet. Worried for plants and trees in area. Not connected to Sewer. 	Nei Mwe Itimwaroroa.
			<ul style="list-style-type: none"> - Land owner is concerned about the land lease for the land used by PS1 and Outfall. 	Ruiti

Appendix C Septage Receival Unit Consultation

Betio PS 1 Survey

Date	Time	Team Member	Contact	No of Households	Comment
20/09/2017	10:58 am	Victoria Hnanguie Taarai Teetu Eritina Benete Rikaare Bonto	victoriah@environment.gov.ki raii.abere@environment.gov.ki eritinab@environment.gov.ki rikaarebonto@gmail.com	5 Households	Tiein - Concern about the land sublease because she lived close to the pump station. She needs to resolve with the MISE office for the pipelines lying near her house. No phone

Appendix D PS5 Intent to Enter Letter

Public Utilities Board

Established on 01 July 1977

We provide
Electricity, Water and Sewage Disposal



Our Ref: STSISP 2016

Date: 11 August 2017

Your Ref:

Tauroa Temeea mtmm

Bikenibeu

KIRIBATI

Cc: - Secretary to Ministry of Public Works and Utilities
- Attorney General's Office
- Police Commissioner, BETIO
- STSISP, Bairiki

Dear Mr. Tauroa,

NOTICE TO ENTER RIBONO 663a/1a at Bikenibeu

Mauri,

With all due respect to you and your siblings as owners of Ribono 663a/1a, this letter serves to formally notify you that STSISP Employees agents of PUB, who are currently working outside your land Ribono 663a/1a intend to enter into your land to carry out maintenance work to pump station number 5.

As you know, this matter was brought to court in 2010 and was left unattended in 2011. We wrote to you by way of letter dated 14 Decemeber 2016 of our intention to enter but this was unsuccessful. Again by way of negotiation with you but still unsuccessful.

You refuse to accept our initial proposal of \$10,000 and another offer of \$20, 000 as compensation. As a result, STSISP have constructed a new pupm station outside your land and still you refuse to allow us to access the pump station on your land to carry out the required maintenance work. This have left us with no other choice but to act upon instruction from the Government Cabinet to exercise the Boards Powers of Entry outline under section 11 of the Public Utilities Board Ordinance.

In regards to this matter, PUB is exercising Powers under section 11 (a) & (c) which state;

Any officer, servant or agent of the Board may, at all reasonable times, and at any time in case of emergency, enter any land for the purposes of;

(a) Inspecting and repairing electric and water lines, sewers and drains and other apparatus belonging to the Board;

(c) where the supply of any public utility is no longer required, or where the Board is authorised to discontinue the supply of any public utility to any premises, removing any electric and water lines and other apparatus belonging to the Board, etc...

In addition PUB will also exercise powers under section 8 of the Ordinance relevant to the current situation, to be specific section 8 (2) (e) and (i) in consideration of section 9 (2).

In compliance with Cabinet's decision and in exercising the Board's powers of entry we with all due respect to you and your siblings will be entering Ribono 663 a/1a to carry out the following activities:

- Demolition & decommissioning of the old pump station (pump station number 5)
 - Construction of additional manholes and pipe works to connect existing sewer reticulation into the new pump station and new rising main into the downstream system.
- During the process, trees or part of a growing trees may be cut or remove.

Please do note any damages arising out of this work shall be repaired or compensated at a reasonable cost.

Take further notice that when STSISP Employee given the urgency of the work required to be carried out enters Ribono 663a/1a in 14 days times, Police Officers will be present to accompany the employees for security and safety reasons. The work to be carried out will take approximately 6 weeks.

We look forward to receiving your reply or response to our above request within 10 days and should you have any queries or need any clarification do not hesitate to contact us at any time.

Ko rabwa.

Yours faithfully,

Wayne Brearley,
Chief Executive Officer
Public Utilities Board
Betio.

Appendix E OSSP Resident Consultation and Contact Details



Tarawa Sanitation Improvement Sector Project
Ministry of Public Works and Utilities, Kiribati / ADB
Bairiki, South Tarawa
Republic of Kiribati
Mobile Phone No. +686 73077716
E-mail: patrick.clarke@smec.com

Land Owner

Site: BN1.....

23 August 2017

Subject: On Site Sanitation Project – Septic Tank Installation

I confirm that I live on the land in question and I approve the installation of a Toilet Building, Septic Tank and Associated construction.

Sincerely,

Name: Ioana Bukeata / 73046429

Sign: 

Date: 07/09/17

