



Environmental Management Plans

Project Number: 41509-013
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Papua New Guinea: Rural Primary Health Services Delivery Project

Prepared by National Department of Health for the Government of Papua New Guinea and the Asian Development Bank.

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List of Environmental Management Plans (EMP)

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Environmental Management Plan

Tsinsibai, Western Highlands Province

April 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS (April 8 2015)

Currency Unit - PNG Kina

K1.00 = \$0.37

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| CEPA | : | Conservation & Environment Protection Authority |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

1) **Affected Persons (APs):** Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership

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BACKGROUND

The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating provinces.

The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

The **Conservation and Environment Protection Authority (CEPA)** has been consulted for permission for the Level 1 activities in the Community Health Post Constructions prior to any civil works commenced. The permission letter from the Managing Director of CEPA is attached in [Appendix 3](#).

CHP REQUIREMENTS AT Tsinsibai SITE

Western Highland Provincial (WHP) capital is Mount Hagen. The province covers a land mass of about 4 299 km². It has a total population of about 362 934 with a population density of 82/ km² (2011 Census) which makes it the most densely populated apart from the National Capital District at that time. In July of 2009, the National Parliament passed legislation to create two new provinces and Jiwaka was separated from Western Highland province.

The four current districts of WHP are; Dei, Mount Hagen District, Mul-Bayer and Tambul-Nebilyer. There are 9 Local level Government Councils, two in each district and three in Mul-Bayer district. Tsinsibai is in the Tambul-Nebilyer district which is made up of Mt Giluwe rural and Nebilyer rural Local Level Governments (LLG) in which there are total of 77 wards. The wards have an elected Councilor to the LLG. The district office is located in Nebilyer, is about 20 Km south east of Mt Hagen capital.

Economically, the Province is depends on coffee and tea. There are small scale village projects on vegetables farming and poultry for the local markets and the informal sector markets for carvings and crafts and tobacco and fire woods. The majority of the populations live by subsistence farming;

gardening for self-consumption and for ceremonial occasions or for the local market. Means of transport is mostly by the all weather roads to Mt Hagen town.

The Tsinsibai Community Health Post (CHP) site is located in an underserved rural location of Nebilyer Rural LLG; it meets the selection criteria of the Project for the rural location of a new CHP. The land proposed for building the health post is deemed suitable and sufficient (0.77 hectares, portion 3465) for the construction of a CHP and three staff houses, being located on uneven but stable land, in a central location, with good access by both road. The land has been surveyed and Purchased as specified by the Valuer General of the Department Land and Physical Planning In March 2015 for the purpose of the CHP. The Community Health Post is expected to provide consultations and treatment to an average of forty (40) persons per day. The final CHP design options have been completed and accepted by the Western Highlands Provincial Health Authority.

The landowners have agreed to alienate land for the CHP and have signed a Voluntary Land Use Agreement (MOA) with the National Department of Health. To ensure that the agreement is truly voluntary, the Project followed adequate safeguards processes including extensive consultation with the local community, use of applicable National land laws and regulations, and due diligence to ensure that local people will not experience major adverse impacts. The landowner groups willingly provided the land in consideration of the benefits of having a CHP in their community.

The Kumungapul land belongs to Wamuapul clan of Palme Tribe in Tsinsibai village do have an existing Aid post on the same site. There are about 3000 plus population within Tsinsibai area and will also be accessible by foot by so many other communities from 5 to 10 km away. The climate is very suitable and with the very fertile soils, broili, potatoes and cabbages is abundant in the area due to high agriculture activities.

There will be construction of a new CHP facility and three staff houses as per the attached site plan. There will be some earth works required especially for the drainage, leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. Soil erosion control during earth works is vital as the storm water drainage outlet is only 25 meters away from the nearby creek.

Water extraction as a supply option is not seen as appropriate for Tsinsibai at this point in time due to environmental permit limitations. However, the Project will be installing nine 5000L water tanks to capture rain water. Milne Bay has a prolonged wet season from November to April and regular rainfall all year round. There will be one tank for each of the three staff houses. The water for drinking would come from the four tanks at the CHP facility and water for ablutions and other domestic use will come from tanks on the other two sheds. Power supply at this time would come from a 3 – 5 KVA Generator and solar panels.

Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source. All types of wastes including construction, kitchen and toilet wastes will be managed as per the EMP and CEMP.

As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category | Sub-category | Category of activity | Level 1 |
|----------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

1) LEGAL AND POLICY FRAMEWORK

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities.

The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EAPF and the measures set out in this updated EMP.

2) INSTITUTIONAL ROLES AND RESPONSIBILITIES

The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed Construction Environmental Management Plan (CEMP) that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the Safeguards Specialist advises the Project's Construction Manager that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

3) GRIEVANCE REDRESS MECHANISM

The Project will establish a Grievance Redress Mechanism (GRM) which will be **accessible** (considering literacy levels), **predictable** (known procedures, within a set timeframe), and **transparent**. The Provincial Safeguards Officer (PSO) will be the grievance redress focal point to address Project related concerns that may arise during implementation, through public meetings, communities and affected people will be informed by the RPHSDP that they have a right to grievance resolution, and told how they can have access to the GRM. Complaints and grievance procedures will be based on those outlined in the Land Assessment Framework. These will be adapted slightly to ensure communities are easily able to register any complaints at the local level, and that there is a publicly acceptable forum to deal with them. A Grievance Registration book will be established in every CHP site, to be held and administered by a trusted literate member of the community. This may be the Village Magistrate, Ward Development Councilor, the Aid Post OIC, women's group leader, or other appropriate person, chosen by the community themselves. Anyone can approach this person (the 'Grievance Registrar') to lodge a complaint or grievance. **See Appendix 3** for an example of a grievance intake form.

4) ENVIRONMENTAL MANAGEMENT PLAN

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Tsinsibai site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the Bid and Contract Documents (BCD).

The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.

The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.

Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the **PSU/NDOH on a monthly basis and to ADB semi-annually.**

b. Requirements of the Construction Environmental Management Plan

Based on the EMP included in the approved IEE and this updated EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.

The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.

The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.

Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Section 5 provides guidance on how to prepare a CEMP.

Table 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Land use MOA signed upon agreement by true land owners & users for the health services thus minimal financial and social impact ensured as per the land and environment assessment in accordance with ADB and Go PNG legal requirements. | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimum risks accept for minor drought as in the past. | A few Water Tanks will be installed to capture sufficient amounts of water. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed land surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams. Parking areas and workshops (if any) to have oil separators. | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible by formal Agreements with resource owners in place Obtain permits as required. Submit quarry management plan or gravel extraction plan to PSU. | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible. | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion. All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas. Minimize size/duration of cleared areas | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|---|---------------------------------------|
| | | Undertake progressive re-vegetation. | |
| Storage and handling of construction materials, fuel, and lubricants | Secure storage, minimize generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Store chemicals in secure area, with concrete floor and weatherproof roof. Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill | Construction contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution (high water table). | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|---|-----------------------------------|
| | | No impacts on existing users (mini-hydro) | |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS immediately. | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near- original condition. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| *Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in | PSU and NDOH |

5) GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

MANAGEMENT PLAN

PREPARATION

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.

3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.

4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.

5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.

6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

CONTENT

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

a. Introduction and Purpose

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the **CEPA**, however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. The flow of storm water into the nearby outlet drains to the surroundings would only reach the stream about 25 meters away hence controls must be put in place.
- b. Earth excavation and all types of wastes should have waste storage containers that will be disposed off as approved by local authorities due to high water table area.

Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- Contractor Facilities set up
 - ii. Earth works

- a. Top soil Excavation should be minimized as much as possible.
- b. Leveling/ Backfilling and compaction if (f) (ii) (a) is required.
- c. Drainages (including storm water, sewer & water supply) and Excess road

iii. Building Construction

- Building 3 staff L63 houses as per the design
- CHP facility and structures as per the design
- Incinerator & Gen set house as per the design
- Rehabilitation
- Dismantling of contractor facilities
- Soils rehabilitation
- Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 3 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|-----------------|-------------|--------------|
| ABC utility DEF | 2 | Good Average |
| tractor GHI | | Average Good |
| excavator | 3 | |
| JKL 7-ton truck | 4 | |
| | 1 | |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works. This includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under an environmental permit may be required. This will need to be obtained from CEPA. This section of

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- Type of construction of facilities (floor, walls, and roof);
- Storm water drainage, collection systems, flow paths, and disposal areas;
- Source of water and type of treatment required for cooking, washing, and drinking;
- Effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- Source of energy to be used for heating and cooking;
- confirm as "yes" or "no" if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- How long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 4 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|--|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin > natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin > natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin > natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin > natural drainage system | n.a. |

c.g.i. = corrugated iron; n.a. not applicable.

6) ENVIRONMENTAL PROTECTION WORK PROCEDURES

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

7) MONITORING OF WORK

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

8) STAFF AND WORKER TRAINING

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

9) REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month

- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues



Mr. Robert Akers - Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENEC/28-14-32
Action Officer: (1)

Dear Mr. Akers,

SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 2nd October 2013, has been received and acknowledged.

Following an inspection of the Atoqau (Mole Bay Province) premises (Bubuleta and Gonye) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2002*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,

K. MICHAEL WAI
Deputy Secretary
Delegate of the Department of Environment & Conservation

NOTE
Please send to
1st Grade &
file hand 2013
[Signature]

Appendix 3 - GRIEVANCE INTAKE FORM (GRM) No table of figures entries found.

CHP/Site Location: Tsinsibai

The Rural Primary Health Service Delivery Project welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| | | | |
|--|--|-----------|--|
| Contact Information | | | |
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |
| | | | |

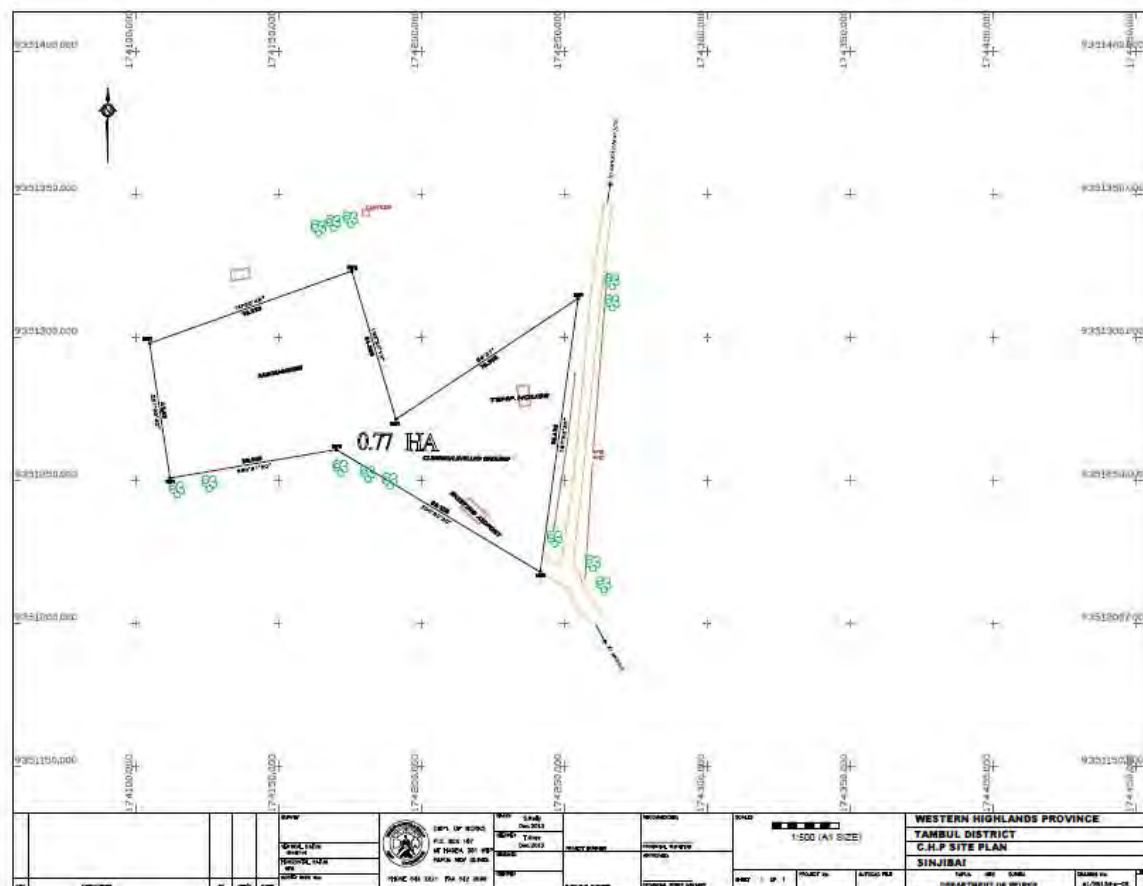
Portion to be filled in by the staff:

| | |
|-------------------------------------|---|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

Appendix 4: Tsinsibai Survey Plan



Appendix 5: Tsinsibai- CHP Site Plan



Appendix 6: Minute for Correspondence between DLPP Director and DPLGA Secretary for COA



OFFICE OF THE SECRETARY

Telephone: (675) 301 1003
(675) 325 0233
Facsimile: (675) 325 0553

Department of Provincial &
Local Government Affairs
P.O. Box 1287,
BOROKO, 11,
National Capital District,
Papua New Guinea

Date: 5th February 2015
File : 35-6-4

Mr. Lazarus Malesa
Director – Impact Projects
Department of Lands and Physical Planning
P. O. Box 5665
BOROKO
National Capital District

**SUBJECT: CERTIFICATE OF ALIENABILITY (COA), KADUWAGA LAND
PORTION 20C M/I KAILEUNA F/M TROBRIAND, MILNE BAY
PROVINCE**

I acknowledge receipt of your correspondence dated 20th January 2015 regarding the above subject matter.

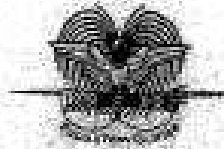
Please find enclosed Certificate of Alienability issued upon my satisfactory assessment of the Land Investigation Report for outright acquisition of Land known as Kaduwaga (Tumasa) legally described as Portion 20c for establishment of Community Health Aid Post.

Details of certificate as follows:

| NO | COA NO | L.A (Ha) | NAME OF LAND | PURPOSE |
|----|------------|----------|------------------------------|---------------------------|
| 1 | 2 / 2-2015 | 0.51 | Kaduwaga(Tumasa) Portion 20c | Community Health Aid Post |

Yours Sincerely,


Munari Uyassi
Secretary



Land Act No. 45 of 1996

CERTIFICATE OF ALIENABILITY

I, **Manare Uyass**, Custodian, being specifically charged under Section 114 of the Land Act No. 45 of 1996 to establish, further or protect the interests of customary land owners in or in relation to land under customary tenure DO HEREBY CERTIFY that in respect of the proposed purchase ~~lease~~ by the Independent State of Papua New Guinea of about **0.77** hectares of land under customary tenure known as **Sinijibai (Portion 3465C)** situated approximately **20** Kilometers from Mt Hagen City in the **Tambul Nedyee** District of **Western Highlands** Province:

- (a) There is no dispute as to ownership;
- (b) The customary owners of the aforesaid land and the customary owners of all improvements thereon are willing to sell ~~lease~~ for a period of _____ years the land and improvements to the Independent State of Papua New Guinea;
- (c) The sale ~~lease~~ for a period of _____ years of the aforesaid land and improvements to the State will not be detrimental to the best interests of the customary owners or of their descendants either now or in the foreseeable future; and
- ~~(d) I have fully considered the question of securing to the customary owners and/or their descendants rights of hunting, gathering, collecting, fishing and access and reserved that such reservations be made.~~
- (e) The subject land is ~~is not~~ required for public purpose.

GIVEN Under my hand at...**Waigani**... this... **20th** ... day ... of... **March** ... **2015**.

C. of A. No: **6/3-2015**
D.P.& L.G.A. Ref: **35-6-14**
I & S Ref:


Manare Uyass,
Secretary

Department of Provincial and Local Level Government Affairs



Tsinjibai Community Health Post Project

Landowner's Meeting Minutes

Date: 28/11/2013

Venue : Tsinjibai CHP

Agenda:

- A. Land for Community Health Post Project at Tsinjibai
- B. Tsinjibai Community Health Post Project.

Members Present

- | | |
|------------------------|---------------------------------------|
| 1. Mr. Joseph Oki | Landowner |
| 2. Mr. John Pup | Landowner |
| 3. Mr. Misok Joseph | Landowner |
| 4. Mr. Kuipa Siminiji | Landowner |
| 5. Mr. Nolofo Pup | Landowner |
| 6. Mr. Paul Nkindi | Landowner |
| 7. Mr. Simbali Kinjap | Community Leader |
| 8. Ms Elizabeth Yiarpa | Community Health Worker Tsinjibai CHP |
| 9. Mr. Bruce Kumin | Safeguard Officer RPHSDP, WHPHA. |
| 10. Mrs. Maria Talpa | Information officer RPHSDP, WHPHA. |

The meeting was conducted to discuss the above two agendas. Mr. Bruce Kumin briefed the members present on proposed Community Health Post Project at Tsinjibai and the site of the proposed project.

He explained that the CHP project was to be located at a central location for easy access to services by the surrounding Communities. Therefore the selected site was ideal for the project and thanked the Tsinjibai landowners and communities for selecting the site near Tsinjibai Primary School.

He also mentioned that the Landowners and the communities are to give their views on the livelihood of the Community Health Post in the area.

All Tsinjibai CHP site Landowners agreed to give away their land for the purpose of setting up the Community Health Post. Most stated that they live right inside away from the main Highway and were neglected of the vital health services to the area for a long time.

They have walked far for hours carrying patients on stretchers to seek medical help especially mother in labour or mothers with obstetric complications. The nearest Health Centre is Paiaakona about a four hours' walk. Their silent prayers for such services have been finally answered.

Mothers with obstetrical complications such as retained Placentas, peripheral sepsis, Post Partum haemorrhage were carried on stretchers walking through rough terrains to Paiaakona to seek help especially in the nights.

They thanked the WHPHA for selecting Tsinjiba as one of the project site and you have done a worthwhile selection, we appreciate your consideration.

Below are some of the member's comments on the given land and the Community Health Post Project.



1. Mr. Joseph Oki stated that the land was only land for gardening and vegetable growing for cash. I am sacrificing my land for the purpose of Health Services so that these very vital services could be provided to my community at our door step like never before. This Health Service is a very essential need we have been overlooked for a long time. I appreciate the WHPHA for selecting my area for the Community Health Post Project and I have no intention of taking my land back in future and I will tell my sons the same. Thank you WHPHA for bringing health services to my door step.

All my brothers and fathers have all agreed to give the land away for the purpose of Community Health Posts. Mipela sori long ol lain blong mipela na mipela givim graun long wokim haussik an bai i no gat tok long baksai or behain taim long dispel graun.



2. Mr. John Pup said he had a vision to bring Health Services to the community of Tsinjibai area since his youth but didn't know how and where to find get them. My dreams are fulfilled at my old age and I am very happy to give away my land for health purpose. We the landowners of Tsinjibai CHP do not hesitate to give away our land and this will be told from generation to generation that this particular land has been given to Health for the construction of Community Health Post. I have no other better land to give than this land and I am giving this land with whole my heart. Thank you Western Highlands Provincial Health Authority for selecting Tsinjibai Community for the CHP project. I have three sons who I have told them and we agreed to give the land to the Government for the Community Health Project and we take ownership of the services here at Tsinjibai.



Mr. Misek Joseph said, "Mi yanpela man tumas mi nogat tok moa . Mi wanbel long toktok blong papa Joseph na i givim graun long Helt Long wokim hausik long hia. I will pass on to generations to take ownership of the services to be provided here. I am a student, I might end up being a health worker and might come back here to work and provides health services to my people."



3. Mr. Kuipa Siminji:

I have two sons and will tell these two to take ownership of the Health Facility and take good care of services and infrastructure of the facility.



4. Nalapa Pup: Son of John Pup

All my family members and Community have all agreed and are looking forward for the project and its services on this land. Our land for vegetable farming is given away for the much needed health services to the community in upper Nebilyer area.



5. Mr. Paul Nikiindi: Community Leader

I am happy to see that two young men Misek Joseph and Nologo Pup have pledged their support to take ownership of the Community Health Post project to the area.

I thank you the Landowners in giving away your land for this development to our community. For so long this community (Tsinjabai 4 LLG Ward) has been without any form of government service. I also pledge to take ownership of the facility and the services to be provided here.



6. Mr. Simbil Kinjap: Community Leader

On behalf of Tsinjabai Community I appreciate the actions of the Landowners for their actions in giving their land willing without payment. We had no government services in our Community but only Church services (ACE School Christian school).

We have been walking long distances to seek medical help and now health services will be brought to our door steps. Thank you WHPHA for selecting our community and thank you landowners for giving your land for the health facility. The whole community will take ownership of the health facility and its services.

All the land owners expressed that the land is given to Health for the construction of the Community Health Post and are eagerly waiting for the actual constructing.

Minute Secretary : Maria Talpa, Information Officer RPHSDP

Table 5: Earth Quakes in PNG – 29th March 2015

| Earthquakes in Papua New Guinea | | | |
|---------------------------------|--|-----------|------------------|
| Date | Location | Magnitude | Fatalities |
| Jul 17, 1998 | Near North Coast of New Guinea, Papua New Guinea | M 7.0 | |
| May 10, 1999 | New Britain region, Papua New Guinea | M 7.1 | |
| May 16, 1999 | New Britain region, Papua New Guinea | M 7.1 | Fatalities 2,183 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 8.0 | Fatalities 2 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 7.8 | |
| Nov 17, 2000 | New Britain region, Papua New Guinea | M 7.8 | |
| Sep 8, 2002 | New Guinea, Papua New Guinea | M 7.6 | Fatalities 4 |
| Jan 10, 2003 | New Ireland, Papua New Guinea, region | M 6.7 | |
| Mar 11, 2003 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Jun 7, 2003 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 9, 2005 | New Ireland Region, Papua New Guinea | M 7.6 | |
| Sep 29, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Dec 11, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 1, 2006 | Bougainville Region, Papua New Guinea | M 6.8 | |
| Oct 17, 2006 | New Britain region, Papua New Guinea | M 6.7 | |
| Jun 28, 2007 | Bougainville region, Papua New Guinea | M 6.7 | |
| Sep 26, 2007 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Nov 22, 2007 | Eastern New Guinea Region, Papua New Guinea | M 6.8 | |
| Jun 23, 2009 | New Ireland region, Papua New Guinea | M 6.7 | |

Environmental Management Plan

Kanimareta, Western Highlands Province

June 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(June 29 2015)

Currency Unit - PNG Kina

K1.00 = \$0.357

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| CEPA | : | Conservation & Environment Protection Authority |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

- 1) **Affected Persons (APs):** Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership

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| <u>3)</u> | <u>GRIEVANCE REDRESS MECHANISM</u> | <u>10</u> |
| <u>4)</u> | <u>ENVIRONMENTAL MANAGEMENT PLAN</u> | <u>10</u> |
| <u>5)</u> | <u>GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN</u> | <u>18</u> |
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A. BACKGROUND

- 1) The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating provinces.
- 2) The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

The **Conservation and Environment Protection Authority (CEPA)** has been consulted for permission for the Level 1 activities in the Community Health Post Constructions prior to any civil works commenced. The permission letter from the Managing Director of CEPA is attached in Appendix 3.

B. CHP REQUIREMENTS AT Kanimareta SITE

- 3) The Western Highlands Province has a land mass of approximately 4 299 Km² and 362 850 inhabitants with a population density of 84 km² (2011 census). There are 4 districts and 9 LLGs.
- 4) Economically, the Province is dependent coffee, tea and fresh garden vegetable. The soil is very conducive to farming in Kanimareta area. There are small scale village projects on coffee and garden produce; informal sector markets like artifacts and formal employment in town provide income for the community. The majority of the population lives by subsistence farming; gardening for self-consumption and for ceremonial occasions or exchange systems or for local marketing at the local government station. Means of transport is mostly by all weather roads through the terrain or by foot.
- 5) The Kanimareta Community Health Post (CHP) site is located in Kanimareta village, an underserved rural location 10 km from Baiyer rural LLG station; it meets the selection criteria of the Project for the rural location of a new CHP. The land proposed for building the health post is deemed suitable and sufficient (1.36 hectares, Portion 372c) for the construction of a CHP and three staff houses, being located on flat land, in a central location, with good access by both road. The land has been surveyed, valued and payment made transparently and fairly as per the valuer generals valuation to satisfy the Land Acquisition by Agreement. The Community Health Post is expected

to provide consultations and treatment to an average of forty (40) persons per day. The final CHP design options have been completed and accepted by the Western Highlands Provincial Health Authority.

- 6) The landowners have agreed to alienate land for the CHP and have signed a Voluntary Land Use Agreement with the National Department of Health. To ensure that the agreement is truly voluntary, the Project followed adequate safeguards processes including extensive consultation with the local community, use of applicable National land laws and regulations, and due diligence to ensure that local people will not experience major adverse impacts. The landowner groups willingly provided the land in consideration of the benefits of having a CHP in their community. There has been an existing Aid Post with 2 staff houses which must have been built in the 1980s which needs refurbishment.
- 7) There will be construction of a new CHP facility and three staff houses as per the attached CHP site plan. There will be some earth works required especially for the drainage, leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. Soil erosion control during earth works is vital as the storm water drainage outlet to a nearby is only 10 meters away.
- 8) Water extraction as a supply option is not seen as appropriate for Kanimareta at this point in time due to the design specifications. However, the Project will be installing nine 5000L water tanks to capture rain water. Kanimareta has a prolonged wet season from November to April and regular rainfall all year round. There will be one tank for each of the three staff houses. The water for drinking would come from the four tanks at the CHP facility and water for ablutions and other domestic use will come from tanks on the other two sheds. Power supply at this time would come from a 3 – 5 KVA Generator and solar panels.
- 9) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.
- 10) All types of wastes including construction, kitchen and toilet wastes will be managed as per the EMP and CEMP.
- 11) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category | Sub-category | Category of activity | Level 1 |
|----------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

C. LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

1) LEGAL AND POLICY FRAMEWORK

- 11) The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities.
- 12) The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EARF and the measures set out in this updated EMP.

2) INSTITUTIONAL ROLES AND RESPONSIBILITIES

- 13) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:
- (i) The PSU’s Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction

section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).

- (ii) During pre-construction, the PSU's safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

14) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed Construction Environmental Management Plan (CEMP) that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the Safeguards Specialist advises the Project's Construction Manager that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

3) GRIEVANCE REDRESS MECHANISM

- 15) The Project will establish a Grievance Redress Mechanism (GRM) which will be **accessible** (considering literacy levels), **predictable** (known procedures, within a set timeframe), and **transparent**. The Provincial Safeguards Officer (PSO) will be the grievance redress focal point to address Project related concerns that may arise during implementation, through public meetings, communities and affected people will be informed by the RPHSDP that they have a right to grievance resolution, and told how they can have access to the GRM. Complaints and grievance procedures will be based on those outlined in the Land Assessment Framework. These will be adapted slightly to ensure communities are easily able to register any complaints at the local level, and that there is a publicly acceptable forum to deal with them. A Grievance Registration book will be established in every CHP site, to be held and administered by a trusted literate member of the community. This may be the Village Magistrate, Ward Development Councilor, the Aid Post OIC, women's group leader, or other appropriate person, chosen by the community themselves. Anyone can approach this person (the 'Grievance Registrar') to lodge a complaint or grievance. **See Appendix 3** for an example of a grievance intake form.

4) ENVIRONMENTAL MANAGEMENT PLAN

a. Environmental Management Plan and Monitoring

- 16) Appendix 2 contains the EMP table updated for the Kanimareta site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the Bid and Contract Documents (BCD).
- 17) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 18) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 19) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the **PSU/NDOH on a monthly basis and to ADB semi-annually.**

b. Requirements of the Construction Environmental Management Plan

- 20) Based on the EMP included in the approved IEE and this updated EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 21) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 22) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 23) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Section 5 provides guidance on how to prepare a CEMP.

Table 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. | Land use MOA signed upon agreement by true land owners & users for the health services thus minimal financial and social impact ensured as per the land and environment assessment in accordance with ADB and Go PNG legal requirements. | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure land slide. | Site designations set away from potential cliffs and gorges. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed land surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams. Parking areas and workshops (if any) to have oil separators. | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible by formal Agreements with resource owners in place Obtain permits as required. Submit quarry management plan or gravel extraction plan to PSU. | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible. | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion. All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas. Minimize size/duration of cleared areas | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|---|---------------------------------------|
| | | Undertake progressive re-vegetation. | |
| Storage and handling of construction materials, fuel, and lubricants | Secure storage, minimize generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Store chemicals in secure area, with concrete floor and weatherproof roof. Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill. All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers is prohibited. Work <u>laborer's</u> hire and raw material purchases must be done fairly. | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution. | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| | | No impacts on existing users (mini-hydro) | |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| *Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

5) GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

MANAGEMENT PLAN

PREPARATION

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

CONTENT

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the CEPA, however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. The flow of storm water into the nearby outlet drains to the surroundings would only reach the sea water about 20 meters away hence controls must be put in place.
- b. Earth excavation and all types of wastes should have waste storage containers/sheds be disposed off as approved by local authorities.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor after CEMP approval.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation should be minimized as much as possible.
 - b. Leveling/ Backfilling and compaction if (f) (ii) (a) is required.
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses as per the design
 - b. CHP facility and structures as per the design
 - c. Incinerator & Gen set house as per the design
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;

- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 3 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|----------------------|--------------------|------------------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works. This includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under an environmental permit may be required. This will need to be obtained from DEC. This section of

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- Type of construction of facilities (floor, walls, and roof);
- Storm water drainage, collection systems, flow paths, and disposal areas;
- Source of water and type of treatment required for cooking, washing, and drinking;
- Effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- Source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- How long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 4 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a. |

c.g.i. = corrugated iron; n.a. not applicable.

6) ENVIRONMENTAL PROTECTION WORK PROCEDURES

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

7) MONITORING OF WORK

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

8) STAFF AND WORKER TRAINING

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

9) REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month

- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

Appendix 2: Department of Environment & Conservation Permit



DEPARTMENT OF ENVIRONMENT AND CONSERVATION Environment Protection Wing

Telephone: + (675) 3839630
Facsimile: + (675) 3218371
Email: envprotection@mgd.gov.pg
P.O. Box 6600
BOROKO, SOGA
Papa New Guinea

Level 1, Bennahle Office Building
Waigani Drive

Mr. Robert Akers - Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC/28-14-32
Action Officer: (M)

Dear Mr. Akers:

SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atoton (Milne Bay Province) premises (Bubuleta and Gunney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,

K. MICHAEL WAI

Deputy Secretary

Delegate of the Department of Environment & Conservation

Handwritten notes:
HAREO
Please send to
1st Grade &
file hand copy
[Signature]

Appendix 3 - GRIEVANCE INTAKE FORM (GRM)

CHP/Site Location: Kanimareta

The Rural Primary Health Service Delivery Project welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| Contact Information | | | |
|--|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |
| | | | |

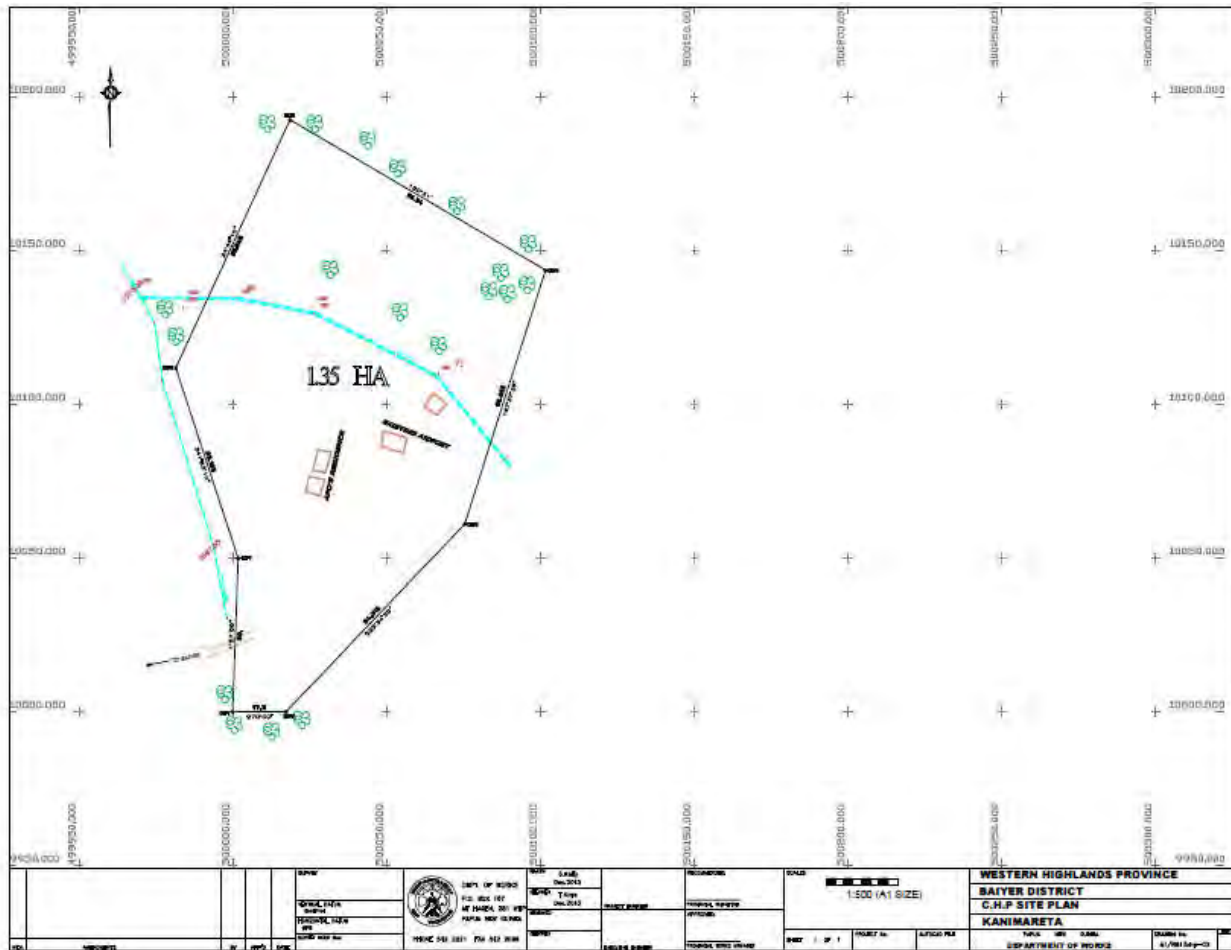
Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

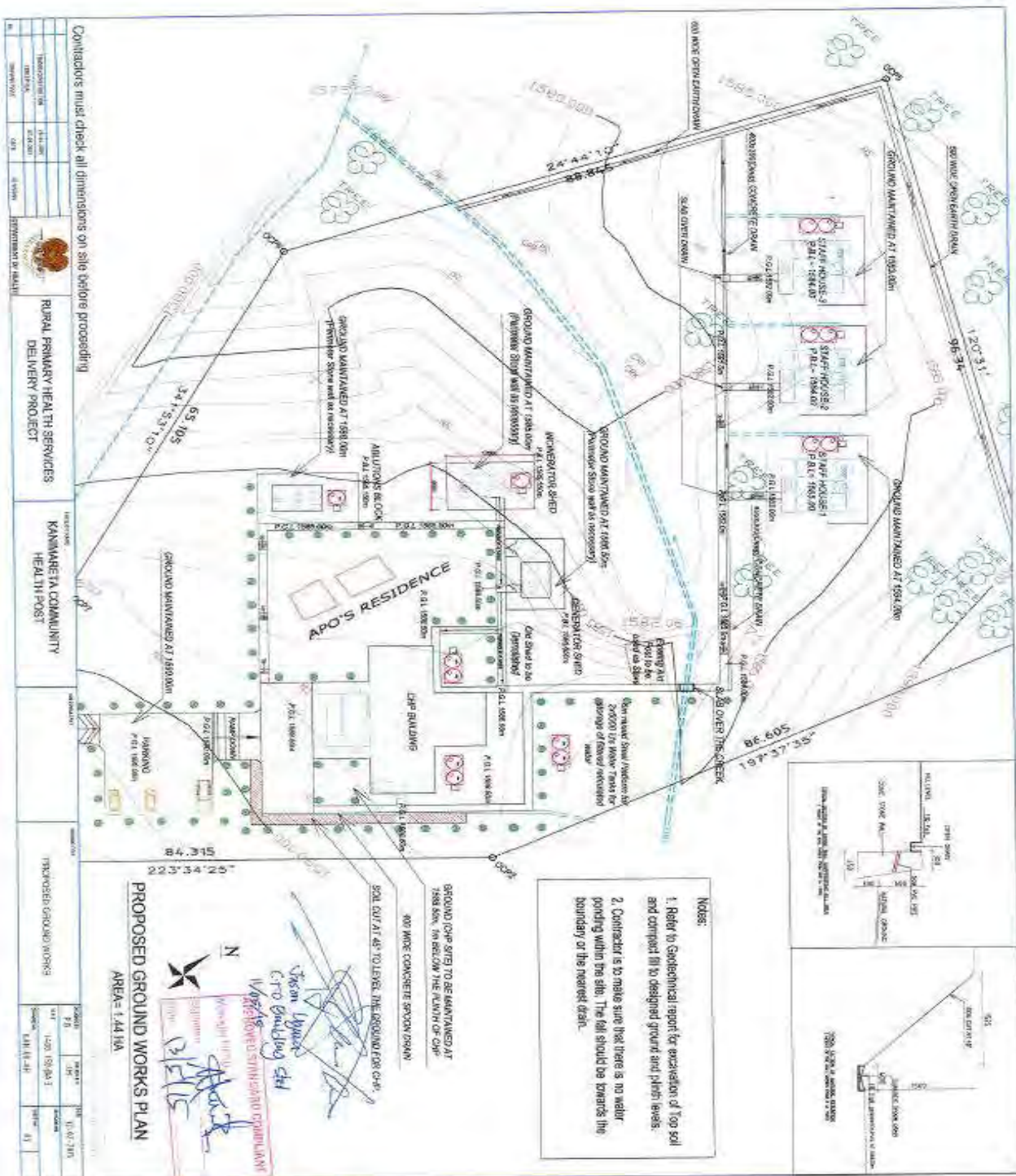
Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

Appendix 4: Kanimareta Survey Plan



Appendix 5: Kanimareta CHP Site Plan



Appendix 6: Certificate of Land Alienation (COA) for Kanimareta CHP site.



Land Act No. 45 of 1996


CERTIFICATE OF ALIENABILITY

I **Munare Uyassi** Custodian, being specifically charged under Section 134 of the Land Act No. 45 of 1996 to establish, further or protect the interests of customary land owners in relation to land under customary tenure DO HEREBY CERTIFY that in respect of the proposed purchase/lease by the Independent State of Papua New Guinea of about **1.36** hectares of land under customary tenure known as **Kanimareta (Portion 372C)** situated approximately **10 Kilometers from Baiyer Government Station in the Mil Baiyer District of Western Highlands Province**

- (a) There is no dispute as to ownership;
- (b) The customary owners of the aforesaid land and the customary owners of all improvements thereon are willing to sell/lease for a period of _____ years the land and improvements to the Independent State of Papua New Guinea;
- (c) The sale/lease for a period of _____ years of the aforesaid land and improvements to the States will not be detrimental to the best interests of the customary owners or of their descendants either now or in the foreseeable future; and
- (d) I have fully considered the question of reserving to the customary owners and/or their descendants rights of hunting, gathering, collecting, fishing and access and recommend that such reservations be made
- (e) The subject land is ~~is not~~ required for public purpose.

GIVEN Under my hand at **Waigani** this **20th** day of **March**, 2015.

C. of A. No: **5/3-2015**
D.P. & L.G.A. Ref: **35-6-14**
L & S Ref:


Munare Uyassi
Secretary



Department of Provincial and Local Level Government Affairs

Figure 1 - 4: The community consultations and site assessments

Figure 1. Land assessments



Figure 2. Community awareness



Figure 2: Community Chats



Figure 5: The Current CHP.



Table 5: Earth Quakes in PNG – 29th March 2015

| Earthquakes in Papua New Guinea | | | |
|---------------------------------|--|-----------|------------------|
| Date | Location | Magnitude | Fatalities |
| Jul 17, 1998 | Near North Coast of New Guinea, Papua New Guinea | M 7.0 | |
| May 10, 1999 | New Britain region, Papua New Guinea | M 7.1 | |
| May 16, 1999 | New Britain region, Papua New Guinea | M 7.1 | Fatalities 2,183 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 8.0 | Fatalities 2 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 7.8 | |
| Nov 17, 2000 | New Britain region, Papua New Guinea | M 7.8 | |
| Sep 8, 2002 | New Guinea, Papua New Guinea | M 7.6 | Fatalities 4 |
| Jan 10, 2003 | New Ireland, Papua New Guinea, region | M 6.7 | |
| Mar 11, 2003 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Jun 7, 2003 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 9, 2005 | New Ireland Region, Papua New Guinea | M 7.6 | |
| Sep 29, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Dec 11, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 1, 2006 | Bougainville Region, Papua New Guinea | M 6.8 | |
| Oct 17, 2006 | New Britain region, Papua New Guinea | M 6.7 | |
| Jun 28, 2007 | Bougainville region, Papua New Guinea | M 6.7 | |
| Sep 26, 2007 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Nov 22, 2007 | Eastern New Guinea Region, Papua New Guinea | M 6.8 | |
| Jun 23, 2009 | New Ireland region, Papua New Guinea | M 6.7 | |

Environmental Management Plan

Sanap, Western Highlands Province

June 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(April 8 2015)

Currency Unit - PNG Kina

K1.00 = \$0.37

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| CEPA | : | Conservation & Environment Protection Authority |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

- 1) **Affected Persons (APs):** Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership

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A. BACKGROUND

- 1) The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating provinces.
- 2) The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

The **Conservation and Environment Protection Authority (CEPA)** has been consulted for permission for the Level 1 activities in the Community Health Post Constructions prior to any civil works commenced. The permission letter from the Managing Director of CEPA is attached in Appendix 3.

B. CHP REQUIREMENTS AT SANAP SITE

- 3) The provincial Capital of Western Highlands is Mt Hagen. The province covers an area of 4 299 km² with about 362, 850 inhabitants (13 143 Households) and population density of 84 km² (2011 census). There are four districts and nine Local level Governments. The four districts include; Dei, Mt Hagen, Mul- Baiyer and Tambul-Nebilyer.

The CHP will be built in Sanap area in the Mul-Baiyer district. The site selection criterion has been satisfied and the site Environment Assessments conforms to the approved Level 1 Activity as per the CEPA Regulations. For any water extractions, a letter of request for the approval for an additional activity to the current permit has been submitted to CEPA in May 2015 and to date is still pending approval and response.

Education in this district has 35 elementary schools, 9 community schools and 10 primary schools. There were no high schools at the time of the national census in 2011.

- 4) Economically, the Province is dependent mostly on Coffee and tea. There are small scale village projects on, informal sector markets like carving, betel nuts and fresh vegetables. The soils are very fertile for agriculture. The majority of the population lives by subsistence farming; gardening for self-consumption and for ceremonial occasions or exchange systems or for local marketing at town. Means of transport is mostly by the all weather road that currently requires maintenance.

- 5) The Sanap Community Health Post (CHP) site is located approximately 4 kilometers from Baiyer government station. This site is in an underserved rural location in Baiyer; it meets the selection criteria of the Project for the rural location of a new CHP. The land proposed for building the health post is deemed suitable and sufficient (0.835 hectares) for the construction of a CHP and three staff houses, being located on flat land, in a central location, with good access by both road and sea transport. The Community Health Post is expected to provide consultations and treatment to an average of forty (40) persons per day. The final CHP design options have been completed and accepted by the Milne Bay Provincial Health Authority.
- 6) The landowners have agreed to alienate land for the CHP and have signed a Voluntary Land Use Agreement with the National Department of Health. To ensure that the agreement is truly voluntary, the Project followed adequate safeguards processes including extensive consultation with the local community, use of applicable National land laws and regulations, and due diligence to ensure that local people will not experience major adverse impacts. The landowner groups willingly provided the land in consideration of the benefits of having a CHP in their community.
- 7) There will be construction of a new CHP facility and three staff houses as per the attached site plan. There will be some earth works required especially for the drainage, leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. Soil erosion control during earth works is vital as the storm water drainage outlet is nearby with users downstream.
- 8) Water extraction as a supply option is not seen as appropriate for Sanap at this point in time. However, the Project will be installing nine 5000L water tanks to capture rain water that can supply the water demand for this CHP. Milne Bay has a prolonged wet season from November to April and regular rainfall all year round. There will be one tank for each of the three staff houses. The water for drinking would come from the four tanks at the CHP facility and water for ablutions and other domestic use will come from tanks on the other two sheds. Power supply at this time would come from a 3 – 5 KVA Generator and solar panels.
- 9) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.
- 10) All types of wastes including construction, kitchen and toilet wastes will be managed as per the EMP and CEMP.
- 11) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category | Sub-category | Category of activity | Level 1 |
|----------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

C. LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

1) LEGAL AND POLICY FRAMEWORK

- 11) The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities.
- 12) The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EARF and the measures set out in this updated EMP.

2) INSTITUTIONAL ROLES AND RESPONSIBILITIES

- 13) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

14) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed Construction Environmental Management Plan (CEMP) that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the Safeguards Specialist advises the Project's Construction Manager that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

3) GRIEVANCE REDRESS MECHANISM

- 15) The Project will establish a Grievance Redress Mechanism (GRM) which will be **accessible** (considering literacy levels), **predictable** (known procedures, within a set timeframe), and **transparent**. The Provincial Safeguards Officer (PSO) will be the grievance redress focal point to address Project related concerns that may arise during implementation, through public meetings, communities and affected people will be informed by the RPHSDP that they have a right to grievance resolution, and told how they can have access to the GRM. Complaints and grievance procedures will be based on those outlined in the Land Assessment Framework. These will be adapted slightly to ensure communities are easily able to register any complaints at the local level, and that there is a publicly acceptable forum to deal with them. A Grievance Registration book will be established in every CHP site, to be held and administered by a trusted literate member of the community. This may be the Village Magistrate, Ward Development Councilor, the Aid Post OIC, women's group leader, or other appropriate person, chosen by the community themselves. Anyone can approach this person (the 'Grievance Registrar') to lodge a complaint or grievance. **See Appendix 3** for an example of a grievance intake form.

4) ENVIRONMENTAL MANAGEMENT PLAN

a. Environmental Management Plan and Monitoring

- 16) Appendix 2 contains the EMP table updated for the Sanap site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the Bid and Contract Documents (BCD).
- 17) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 18) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 19) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the ***PSU/NDOH on a monthly basis and to ADB semi-annually.***

b. Requirements of the Construction Environmental Management Plan

- 20) Based on the EMP included in the approved IEE and this updated EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 21) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 22) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 23) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Section 5 provides guidance on how to prepare a CEMP.

Table 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Land use MOA signed upon agreement by true land owners & users for the health services thus minimal financial and social impact ensured as per the land and environment assessment in accordance with ADB and PNG legal requirements. Land Acquisition through by outright purchase | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize soil erosions by seasonal rainfalls. | Minimize risk of damage to infrastructure by installing proper storm water drainages. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed land surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams. Parking areas and workshops (if any) to have oil separators. | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible by formal Agreements with resource owners in place Obtain permits as required. Submit quarry management plan or gravel extraction plan to PSU. | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible. | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion. All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas. Minimize size/duration of cleared areas | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|---|---------------------------------------|
| | | Undertake progressive re-vegetation. | |
| Storage and handling of construction materials, fuel, and lubricants | Secure storage, minimize generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Store chemicals in secure area, with concrete floor and weatherproof roof. Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill. All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from Contractor. | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution. | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| | | No impacts on existing users (mini-hydro) | |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| *Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

5) GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

MANAGEMENT PLAN

PREPARATION

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

CONTENT

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

*There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the **CEPA**, however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.*

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. The flow of storm water into the nearby outlet drains to the surroundings would only reach the sea water about 20 meters away hence controls must be put in place.
- b. Earth excavation and all types of wastes should have waste storage containers that will be disposed off as approved by local authorities due to high water table area.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation should be minimized as much as possible.
 - b. Leveling/ Backfilling and compaction if (f) (ii) (a) is required.
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses as per the design
 - b. CHP facility and structures as per the design
 - c. Incinerator & Gen set house as per the design
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;

- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 3 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|----------------------|--------------------|------------------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works. This includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under an environmental permit may be required. This will need to be obtained from DEC. This section of

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- Type of construction of facilities (floor, walls, and roof);
- Storm water drainage, collection systems, flow paths, and disposal areas;
- Source of water and type of treatment required for cooking, washing, and drinking;
- Effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- Source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- How long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 4 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a. |

c.g.i. = corrugated iron; n.a. not applicable.

6) ENVIRONMENTAL PROTECTION WORK PROCEDURES

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

7) MONITORING OF WORK

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

8) STAFF AND WORKER TRAINING

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

9) REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month

- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

Appendix 2: Department of Environment & Conservation Permit



DEPARTMENT OF ENVIRONMENT AND CONSERVATION Environment Protection Wing

Telephone: * 1675) 3833630
Facsimile: * 1675) 2218321
Email: envprotection@maldivians.gov.mv
P.O. Box 6600
DOROKO, MALDIVES
Papa New Guinea

Level 1: Bernibile Office Building
Wagani Drive

Mr. Robert Akers - Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC/28-14-32
Action Officer: (1)

Dear Mr. Akers:

SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atotu (Milne Bay Province) premises (Bubuleta and Gunney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,

K. MICHAEL WAI

Deputy Secretary

Delegate of the Department of Environment & Conservation

Handwritten notes:
Noted
Please send to
1st Grade &
file hand copy
[Signature]

Appendix 3 - GRIEVANCE INTAKE FORM (GRM)

No table of figures entries found.

CHP/Site Location: Kaduwaga

The Rural Primary Health Service Delivery Project welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| Contact Information | | | |
|--|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |
| | | | |

Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

Appendix 4: Sanap Survey Plan



Appendix 5: Sanap CHP Site Plan



Appendix 6: Minute for Community Consultations.

Minute NO: 1 of 2013 **SANAP COMMUNITY HEALTH POST** **CUSTOMARY LAND OWNERS MEETING MINUTE**

Date: Wednesday 13th November 2013

Venue: Aid Post Building-Sanap CHP Site

Time: 1:45pm to 4:00pm

2. About 30 customary land owners were present at the meeting.

| NO: | Name | Sex | Land Owner | No: | Name | Sex | Land Owner |
|-----|----------------------|-----|------------|-----|-----------------|-----|------------|
| 1 | Justin Mako | M | L.O | 16 | Shechric Samson | F | L.O |
| 2 | Daniel Walenga | M | L.O | 17 | Leia Moses | F | L.O |
| 3 | Simon Nikints Engene | M | L.O | 18 | Jack Meal | M | L.O |
| 4 | Rot Jeffery | M | L.O | 19 | Kombra Joshua | M | L.O |
| 5 | Jackson Poro | M | L.O | 20 | Runi Engene | F | L.O |
| 6 | Robert Jupu Engene | M | L.O | 21 | Makip Meal | M | L.O |
| 7 | Mata Walenga | F | L.O | 22 | Plak Robert | M | L.O |
| 8 | Philip Moses | M | L.O | 23 | Susan Jeffery | F | L.O |
| 9 | John Ketipa | M | L.O | 24 | Moki Pogliti | M | L.O |
| 10 | Moses Walenge | M | L.O | 25 | Monica Pogliti | F | L.O |
| 11 | Meal Engene | M | L.O | 26 | Kalaim Robert | F | L.O |
| 12 | Nuri Moko | F | L.O | 27 | Banke John | F | L.O |
| 13 | Anna Simon | F | L.O | 28 | Jack Pania | M | L.O |
| 14 | Sana Jeffery | F | L.O | 29 | Tom Wete | M | L.O |
| 15 | Lae Jeffery | M | L.O | 30 | Daniel Raute | M | L.O |

3. Observers at the meeting were:

1. Davis Iwunga-ADB Rep for WHP & Enga Province
2. Bruce Kumin – Sage Guard Officer-RPHSDP
3. Orake Pokara-District Lands Officer

4. Start of meeting

Chairman John Ketepa opened the meeting with the word of prayer offered by Daniel Raut. He acknowledged the presence CHP project team as observers and the land owner members present were quorum, so the meeting proceeded.

Chairman further reminded the members that together we are all committing the moment of this meeting in remembering our late brother Mako Wagaro, who was instrumental in land owner spokesman for Sanap community, including the Health Facility and the CHP project. He assured the members that he will continue to carry on the good work late brother Mako Walenga left behind.

5. Agendas

5.1. Sanap Health Facility History.

5.2. Release of land to CHP project.

5.3. Other Business

5.1.1. Chairman & Justin Mako jointly said that late Mako Wagaro was the initiator of Sanap Aid Post now operating. This is a history and had brought the great change to Sanap Community as more people coming to receive free treatments in the health post than not like before having to travel long distance to bigger health centres which usually are too costly.

(Late Mako Wagaro made the final speech to hand the customary Karowa parcel land to the state for CHP project before his death.)

Late Mako Wagaro was a sick man. An asthmatic person. He faced the hardship of getting treatments in long distance health centres so in 2012 he leased with Merelyin Tom a CHW based in Troiga Health Centre who visited late Mako Walenga in assisting him with treatments and medications. Then later, Mako Wagaro suggested for the possibilities of existing Kendapena Aid Post on the mountain be shifted down and be established at Sanap Village on the KAROWA parcel of land. Merelyin Rai responded saying she will ask the Western Highlands Provincial Health Authorities. But later Mako did not stop there. He went ahead and cleared the KAROWA piece of land owned by Kila Runi who works and lives in Goroka. Later Late Mako rang Kila Runi and he gave permission which late Mako continued further clearing the land for the Aid-Post which all other brothers and children supported the land clearing.

Today late Mako's initiative paid off Sanap Aid-Post is operating on the same KAROWA LAND; also CHP project is to be established on it as well.

5.1.2. Other Members of land owner.

Runi Engene
Robert Nikints Engene
Samson Pulgin Engene
Mal Nikints Engene
Jackson Poro
Daniel Walenga
Mata Walenga
Moses Walenga
Cathy Walenga
Monica Puzlati
Phillip Moses
Anna Samson

All these members shared some sediments that late Mako initiated the clearing of land for the Aid-Post and CHP project now the Aid-Post is in operation. We as communities here in Sanap are going to take ownership of this historical Health facility.

5.1.3. Resolution No: 1. Of Agenda No: 5.1.

After lengthy discussion, the resolution was passed that SANAP AID-POST will continue to operate on the same KAROWA portion land. The clearing will continue till such time when CHP project actually begin the construction. The motion was moved by Simon Pulgin Engene and seconded by Jackson Poro Mako. motion passed. All members in the meeting agreed in show of hands.

5.2. Release of Land for CHP Project:

5.2.1. Simon Pulgin Engene – For CHP project, it will take place with in the same Karowa Land together with the Aid-Post as the land preparation was initiated by late Mako Wagaro. We in this meeting agree to have this CHP project. We assure that there will never be disturbances of any sorts to the CHP. The surrounding communities, and in particular we the family in here will look after the CHP project now and years to come. If there be a need to extend the CHP in future, we have ample land available.

Sanap CHP project meeting minutes 16/11/2018

5.2.2. Daniel Raute Walenga – was emotional when making a point here, when surveyor planted cement pegs on the KAROWA parcel of land ear marked for CHP, it was really our first time to experience this and we feel that something great was happening here.

5.2.3. Jackson Poro – When Survey pegs were put down, KAROWA land became a state land. I'm a peace officer in the Baiyer area village court, if any disturbances occur like drugs, alcohol, I will deal with them and also put end to all these drugs, alcohol and etc.
Therefore we the customary land owners of KAROWA parcel of land now release the land for the CHP project use.

5.2.4. Lots of other land owners expressed that the Sanap community really want to have CHP project established on their land. They all agreed in releasing the KAROWA parcel of land for the CHP project.

5.2.5. Resolution No: 2. of Agenda 5.2.

This resolution was accepted by the customary land owners in the meeting that the given Karowa parcel of land be fully maintained and kept clean at all time until the CHP is built. They further committed to provide volunteer security to the state property and encourage their children to safe guard the CHP project from generation to generation in Sanap community. The motion was moved by Daniel Walenga and seconded by Anna Simon. The CHP project can start any time as resolution passed and all agreed in show of hands.

5.3. Other Businesses:

5.3.1. Tom Wete – For Sanap Aid-Post and the CHP project, I was also one of the initiators which on behalf of seven (7) LLG wards in Mapowa area. I also requested the ADB to fund the CHP project. Further on this token, I thank late Mako Walenga and all his extended family members for releasing the KAROWA parcel of land for CHP project.

5.3.2. Jack Parowa – I was forever public servant attached to DPI at Baiyer. Late Mako brought me away from my home village. Late Mako said not one helped, he wanted me to help him so we worked together till now.
I will remain here at Sanap till the proposed CHP project is fully completed and in operation.

Mrs Nuni Mako moved meeting closed and seconded by Simon Nekints.

Meeting closed at 4.00pm

.....
John Ketepa (Mr.)
Chairman

.....
Orake Pokara (Mr)
Minute Taker

Sanap Landowners meeting min 14-03-2019

Appendix 7: Certificate of Land Alienation (COA) for Sanap CHP site.



Land Act No.45 of 1996

CERTIFICATE OF ALIENABILITY

I, **Manase Uyass** Custodian, being specifically charged under Section 134 of the Land Act No.45 of 1996 to establish, further or protect the interests of customary land owners in or in relation to land under customary tenure DO HEREBY CERTIFY that in respect of the proposed purchase/lease by the Independent State of Papua New Guinea of about 0.898 hectares of land under customary tenure known as **Sanap (Portion 373C)** situated approximately 4 Kilometers from Baiyer Government Station in the **Mul** District of **Western Highlands** Province:

- (a) There is no dispute as to ownership;
- (b) The customary owners of the aforesaid land and the customary owners of all improvements thereon are willing to sell/lease for a period of _____ years the land and improvements to the Independent State of Papua New Guinea;
- (c) The sale/lease for a period of _____ years of the aforesaid land and improvements to the State will not be detrimental to the best interests of the customary owners or of their descendants either now or in the foreseeable future; and
- (d) I have fully considered the question of reserving to the customary owners and/or their descendants rights of training, pathway, collecting, fishing and access and reserving the same reservations to make;
- (e) The subject land is/is not required for public purpose.

GIVEN Under my hand at **Waigani** this **10th** day of **March**, 2015.

C. of A. No: **3/3/2015**
D.P. & L.O.A. Ref: **35-6-14**
L & S Ref:

Manase Uyass
Secretary

Department of Provincial and Local Level Government Affairs



Appendix 8: Request Letter for Additional activity approval to CEPA.



DEPARTMENT OF HEALTH Office of the Secretary

P. O. Box 887
WAIGANI
National Capital District, Papua New Guinea

Phone: + (875) 301 3801, 301 3834
Fax: + (875) 323 9870
Email: health_secretary@health.gov.pg

Date: 04th April 2015

Managing Director,
Conservation and Environment Protection Authority
P. O. Box 6601
BOROKO
NCD.

Re: Seeking Approval for Additional Activity to Community Health Post Construction (Level 1)

Dear Sir,

The Rural Primary Health Project under the National Department of Health has received the Letter of Confirmation for level 1 Activities for the construction of 32 new rural Community Health Post in 8 selected provinces dated 25th November 2013 from your Office.

Currently for some of these selected sites, water extraction from the ground water source is required to sustain the constant supply of water during the temporary dry seasons when the water tanks run out. Therefore, for Additional Activity, this project therefore intends to construct 3000 L water wells that will supply about 1000 – 1300L of water per day into the tanks only during the temporary dry seasons which only lasts for about 2-3 months per year.

The well design as attached will only be dug 2-3 meters into the ground as the water table is high and has abundant supply of fresh water to sustain the natural ground water supplies further from the main village. The water well is built also to demonstrate the need to address the water and sanitation problems in the rural communities.

Yours sincerely,

Pascoe Kase
Secretary

SERVICE DELIVERY TO THE RURAL MAJORITY AND URBAN POOR

Figures : Sanap Site Assessment s

Figures 1-5 : Pictures of the site Assessments.



1. Existing Aid Post - top
2. Stable & flat land for CHP Construction - top
3. Eager Community
4. Public forum on Land & Environment.
5. Signing of Land Acquisition MOA in public forum.



Table 5: Earth Quakes in PNG – 29th March 2015

| Earthquakes in Papua New Guinea | | | |
|---------------------------------|--|-----------|------------------|
| Date | Location | Magnitude | Fatalities |
| Jul 17, 1998 | Near North Coast of New Guinea, Papua New Guinea | M 7.0 | |
| May 10, 1999 | New Britain region, Papua New Guinea | M 7.1 | |
| May 16, 1999 | New Britain region, Papua New Guinea | M 7.1 | Fatalities 2,183 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 8.0 | Fatalities 2 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 7.8 | |
| Nov 17, 2000 | New Britain region, Papua New Guinea | M 7.8 | |
| Sep 8, 2002 | New Guinea, Papua New Guinea | M 7.6 | Fatalities 4 |
| Jan 10, 2003 | New Ireland, Papua New Guinea, region | M 6.7 | |
| Mar 11, 2003 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Jun 7, 2003 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 9, 2005 | New Ireland Region, Papua New Guinea | M 7.6 | |
| Sep 29, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Dec 11, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 1, 2006 | Bougainville Region, Papua New Guinea | M 6.8 | |
| Oct 17, 2006 | New Britain region, Papua New Guinea | M 6.7 | |
| Jun 28, 2007 | Bougainville region, Papua New Guinea | M 6.7 | |
| Sep 26, 2007 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Nov 22, 2007 | Eastern New Guinea Region, Papua New Guinea | M 6.8 | |
| Jun 23, 2009 | New Ireland region, Papua New Guinea | M 6.7 | |

Environmental Management Plan

Kaduwaga, Milne Bay Province

August 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(April 8 2015)

Currency Unit - PNG Kina

K1.00 = \$0.37

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| DEC | : | Department of Environment & Conservation |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

- 1) **Affected Persons (APs):** Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership

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A. BACKGROUND

- 1) The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating provinces.
- 2) The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

The Department of Environment and Conservation has been consulted for permission for the Level 1 activities in the Community Health Post Constructions prior to any civil works commenced. The permission letter from the Secretary of the Department of Environment and Conservation is attached in Appendix 3.

B. CHP REQUIREMENTS AT KADUWAGA SITE

- 3) Milne Bay Province has a land mass of approximately 14 760 Km² and a sea area of about 230 000 Km². There are more than 600 islands of which 160 are inhabited. It is located towards the eastern end of the country. The Province has some rugged terrain and one of the largest maritime areas with many scattered islands. The geography thus makes the efficient delivery of goods and services to the rural majority population of 95.3% very difficult. Only 11 % of the rural populations have access to roads (1995) and of 24 Air strips, only 2 are used currently. There are four (4) Districts and 16 Local Level Governments in the Province. Kaduwaga is in Kiriwina-Goodenough District. The Kiriwina Islands are a 450 Km² archipelago of coral atolls. The major islands in the group are Kaileuna, Vakuta and Kitava. Kiriwina Island is relatively flat with only a few hills along the eastern shore. Despite this, there has never been any recorded high tide into the Island in the past. Most of the population of 12 000 indigenous people live on the main Kiriwina island which is where the Government station of Losuia is located. The only busy airport is also located at Kiriwina Island and is accessible by third level airlines. There is also an existing district hospital, a market and a few shops that have automatic teller machines, a police station and other Government agents on the main Kiriwina Island. Communication by mobile phone services is available via the Digicel PNG telecommunication company.

- 4) Economically, the Province is dependent upon tourism, oil palm and gold mining on Wood Lark Island. There are small scale village projects on fishing, cocoa, copra, informal sector markets like carving, betel nuts and sea food, mostly fish. The majority of the population lives by subsistence farming; gardening for self-consumption and for ceremonial occasions or exchange systems or for local marketing at the government station. Mean of transport is mostly by sail canoes or speed boats for those who can afford the operating cost.
- 5) The Kaduwaga Community Health Post (CHP) site is located in an underserved rural location in Ward 30 of Kiriwina Rural LLG; it meets the selection criteria of the Project for the rural location of a new CHP. The land proposed for building the health post is deemed suitable and sufficient (0.5077 hectares) for the construction of a CHP and three staff houses, being located on flat land, in a central location, with good access by both road and sea transport. The Community Health Post is expected to provide consultations and treatment to an average of forty (40) persons per day. The final CHP design options have been completed and accepted by the Milne Bay Provincial Health Authority.
- 6) The landowners have agreed to alienate land for the CHP and have signed a Voluntary Land Use Agreement with the National Department of Health. To ensure that the agreement is truly voluntary, the Project followed adequate safeguards processes including extensive consultation with the local community, use of applicable National land laws and regulations, and due diligence to ensure that local people will not experience major adverse impacts. The landowner groups willingly provided the land in consideration of the benefits of having a CHP in their community.

The Trobriand Islands, (part of the *Massim* region of Milne Bay) lie in the Solomon Sea, due north of the eastern tip of mainland Papua New Guinea. The Trobriand group is comprised of eight inhabited islands and over a hundred uninhabited islets. Most are raised coral atolls, and so almost uniformly flat, except for Kitava Island. The dead coral foundations are covered by humus, which supports tropical vegetation and enables food cultivation on all the inhabited islands. The largest island in the group is Kiriwina, which is around 45 kilometers long and between 2 and 14 kilometers wide, with approximately 60 villages. The capital of the Kiriwina- Good enough district is Losuia, which has a few shops, an airport, a hotel, district administration offices, a large market, a rural health centre and a high school. There is an extensive road network (built by the Americans during the war) connecting most of the villages in north Kiriwina, and one road south to the less populated south. The roads are made of crushed coral rock, and while they are all-weather roads, are often poorly maintained so travel is slow.

- 7) There will be construction of a new CHP facility and three staff houses as per the attached site plan. There will be some earth works required especially for the drainage, leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. Soil erosion control during earth works is vital as the storm water drainage outlet is only 20 meters away from the sea.
- 8) Water extraction from ground water well (5000 L) will provide backup water supply for Kaduwsaga CHP during the dry seasons. Ground water extraction permits have been acquired from CEPA as attached in appendix 6. However, the Project will be installing nine 5000L water tanks to capture rain water. Milne Bay has a prolonged wet season from November to April and regular rainfall all year round. There will be one tank for each of the three staff houses. The water for drinking would come from the four tanks at the CHP facility and water for ablutions and other domestic use will come from tanks on the other two sheds. Power supply at this time would come from a 3 – 5 KVA Generator and solar panels.
- 9) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.

- 10) All types of wastes including construction, kitchen and toilet wastes will be managed as per the EMP and CEMP.
- 11) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category | Sub-category | Category of activity | Level 1 |
|----------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

C. LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

1) LEGAL AND POLICY FRAMEWORK

- 11) The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities.
- 12) The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EAPF and the measures set out in this updated EMP.

2) INSTITUTIONAL ROLES AND RESPONSIBILITIES

13) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

14) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed Construction Environmental Management Plan (CEMP) that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the Safeguards Specialist advises the Project's Construction Manager that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

3) GRIEVANCE REDRESS MECHANISM

- 15) The Project will establish a Grievance Redress Mechanism (GRM) which will be **accessible** (considering literacy levels), **predictable** (known procedures, within a set timeframe), and **transparent**. The Provincial Safeguards Officer (PSO) will be the grievance redress focal point to address Project related concerns that may arise during implementation, through public meetings, communities and affected people will be informed by the RPHSDP that they have a right to grievance resolution, and told how they can have access to the GRM. Complaints and grievance procedures will be based on those outlined in the Land Assessment Framework. These will be adapted slightly to ensure communities are easily able to register any complaints at the local level, and that there is a publicly acceptable forum to deal with them. A Grievance Registration book will be established in every CHP site, to be held and administered by a trusted literate member of the community. This may be the Village Magistrate, Ward Development Councilor, the Aid Post OIC, women's group leader, or other appropriate person, chosen by the community themselves. Anyone can approach this person (the 'Grievance Registrar') to lodge a complaint or grievance. **See Appendix 3** for an example of a grievance intake form.

4) ENVIRONMENTAL MANAGEMENT PLAN

a. Environmental Management Plan and Monitoring

- 16) Appendix 2 contains the EMP table updated for the Kaduwaga site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the Bid and Contract Documents (BCD).
- 17) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 18) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 19) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the **PSU/NDOH on a monthly basis and to ADB semi-annually.**

b. Requirements of the Construction Environmental Management Plan

- 20) Based on the EMP included in the approved IEE and this updated EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 21) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 22) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 23) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Section 5 provides guidance on how to prepare a CEMP.

Table 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Land use MOA signed upon agreement by true land owners & users for the health services thus minimal financial and social impact ensured as per the land and environment assessment in accordance with ADB and Go PNG legal requirements. | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding. | Site designation above potentially flooded sites. Slight elevation of building structures above ground level. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed land surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams. Parking areas and workshops (if any) to have oil separators. | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible by formal Agreements with resource owners in place Obtain permits as required. Submit quarry management plan or gravel extraction plan to PSU. | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible. | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion. All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas. Minimize size/duration of cleared areas | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|---|---------------------------------------|
| | | Undertake progressive re-vegetation. | |
| Storage and handling of construction materials, fuel, and lubricants | Secure storage, minimize generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Store chemicals in secure area, with concrete floor and weatherproof roof. Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill. All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution (high water table). | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| | | No impacts on existing users (mini-hydro) | |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users. | As per design standard and specifications stipulated by PSU Environmental permit requested and obtained from CEA as in the Appendix. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| *Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

5) GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

MANAGEMENT PLAN

PREPARATION

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

CONTENT

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (DEC) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. The flow of storm water into the nearby outlet drains to the surroundings would only reach the sea water about 20 meters away hence controls must be put in place.
- b. Earth excavation and all types of wastes should have waste storage containers that will be disposed off as approved by local authorities due to high water table area.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation should be minimized as much as possible.
 - b. Leveling/ Backfilling and compaction if (f) (ii) (a) is required.
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses as per the design
 - b. CHP facility and structures as per the design
 - c. Incinerator & Gen set house as per the design
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;

- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 3 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|----------------------|--------------------|------------------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works. This includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under an environmental permit may be required. This will need to be obtained from DEC. This section of

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- Type of construction of facilities (floor, walls, and roof);
- Storm water drainage, collection systems, flow paths, and disposal areas;
- Source of water and type of treatment required for cooking, washing, and drinking;
- Effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- Source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- How long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 4 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a. |

c.g.i. = corrugated iron; n.a. not applicable.

6) ENVIRONMENTAL PROTECTION WORK PROCEDURES

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

7) MONITORING OF WORK

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

8) STAFF AND WORKER TRAINING

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

9) REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month

- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

Appendix 2: Department of Environment & Conservation Permit – Level 1 Activity



DEPARTMENT OF ENVIRONMENT AND CONSERVATION Environment Protection Wing

Telephone: + (675) 3839630
Facsimile: + (675) 3218371
Email: env@pnc.gov.pg
P.O. Box 6600
BOROKO, NCD
Papua New Guinea

Level 1, Bennet Office Building
Waigani Drive

Mr. Robert Akers – Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC/28-14-32
Action Officer: (M)

Dear Mr. Akers:

SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atoton (Milne Bay Province) premises (Bubuleta and Guney) on 19th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the Environment Act 2000.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the Environment Regulation 2002.

Yours Sincerely,


K. MICHAEL WAU

Deputy Secretary

Delegate of the Department of Environment & Conservation

Handwritten notes:
Haze's
Please send to
1st Grade &
file hand copy


Appendix 3 - GRIEVANCE INTAKE FORM (GRM)

No table of figures entries found.

CHP/Site Location: Kaduwaga

The Rural Primary Health Service Delivery Project welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| Contact Information | | | |
|--|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |
| | | | |

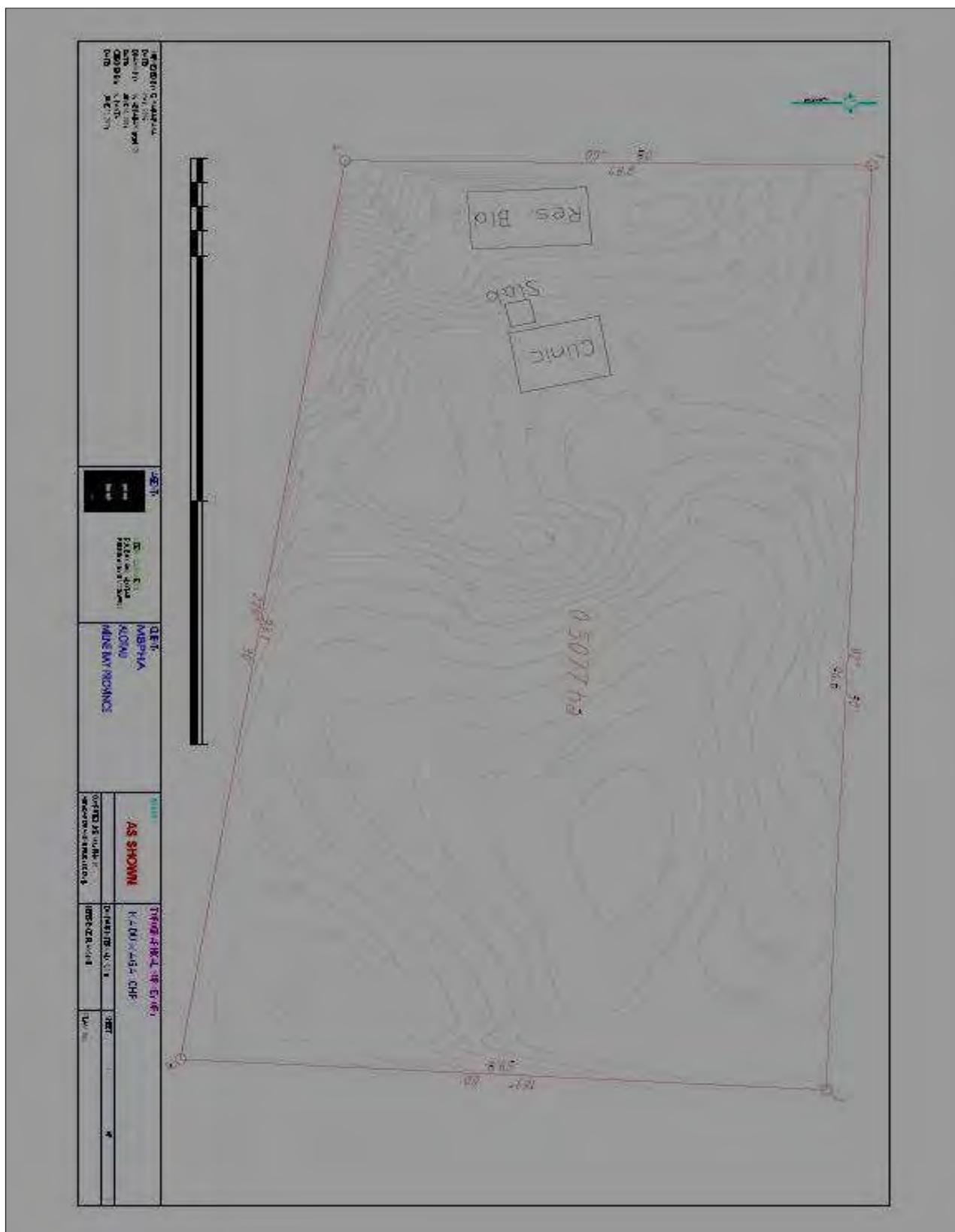
Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

Appendix 4: Kaduwaga Survey Plan



[illegible]

Appendix 6: Permit to Extraction of Ground water – Additional Activity



CONSERVATION AND ENVIRONMENT PROTECTION AUTHORITY

OFFICE OF THE MANAGING DIRECTOR

Phone: (675) 301 4500
Facsimile: (675) 325 0182
E-mail: office@cepa.gov.pg

BMobile Building, 1st Level
P O Box 6601, BORDO, NCD
Papua New Guinea

Date: 13/08/2015
Our Reference: EP-L2A(462)
Action Officer: ei

National Department of Health
P.O. Box 807,
WAIGANI,
National Capital District
Papua New Guinea.

Dear Sir;

Subject: Grant of Environment Permit for National Department of Health.

Attached please find the Environment Permit (**EP-L2A(462)**) that has been recently approved by the Director.

The permit authorizes the extraction of water from underground well situated within the grounds of Kaduwaga Village, Milinch of Kalleuna, Fournil of Trobriand (the "premises") in Kiriwina Goodenough District, Milne Bay Province. The water extracted will be mainly used for Rural Primary Health Care.

Further to the approval of the Environment Permit, your company is also hereby reminded of its obligations under this approval.

Please note that we are now operating as the CEPA. You will be informed accordingly of the new annual charges in due course.

For any clarification on the terms and conditions of the permit, please contact the undersigned on Phone 3014543 or 3014522.

Yours faithfully,


GUNTHER JOKU
Managing Director

Appendix 7: Certificate of Land Alienation (COA) for Kaduwaga CHP site.



Land Act No. 45 of 1996

CERTIFICATE OF ALIENABILITY

I **Munare Uyassi** Custodian, being specifically charged under Section 134 of the Land Act No. 45 of 1996 to establish, further or protect the interests of customary land owners in or in relation to land under customary tenure DO HEREBY CERTIFY that in respect of the proposed purchase/lease by the Independent State of Papua New Guinea of about **0.51** hectares of land under customary tenure known as **Kaduwaga (Tumasa) Portion 18e** situated on **Kailom Island, Kiriwina LLG** in the **Kirivina/Gordenough** District of **Milne Bay** Province:


- (a) There is no dispute as to ownership;
- (b) The customary owners of the aforesaid land and the customary owners of all improvements thereon are willing to sell/lease for a period of _____ years the land and improvements to the Independent State of Papua New Guinea;
- (c) The sale/lease for a period of _____ years of the aforesaid land and improvements to the State will not be detrimental to the best interests of the customary owners or of their descendants either now or in the foreseeable future, and
- (d) I have fully considered the question of reserving to the customary owners and/or their descendants rights of hunting, gathering, collecting, fishing and access and recommend that such reservations be made.
- (e) The subject land is/are not required for public purpose.

GIVEN Under my hand at **Waigani** this **5th** day of **February**, **2015**.

C. of A. No: **2/2-2015**

D.P. & L.G.A. Ref: **35-6-4**

I. & S Ref:


Munare Uyassi
Secretary

Department of Provincial and Local Level Government Affairs



Appendix 8: Map of existing Aid Post at Kaduwaga.

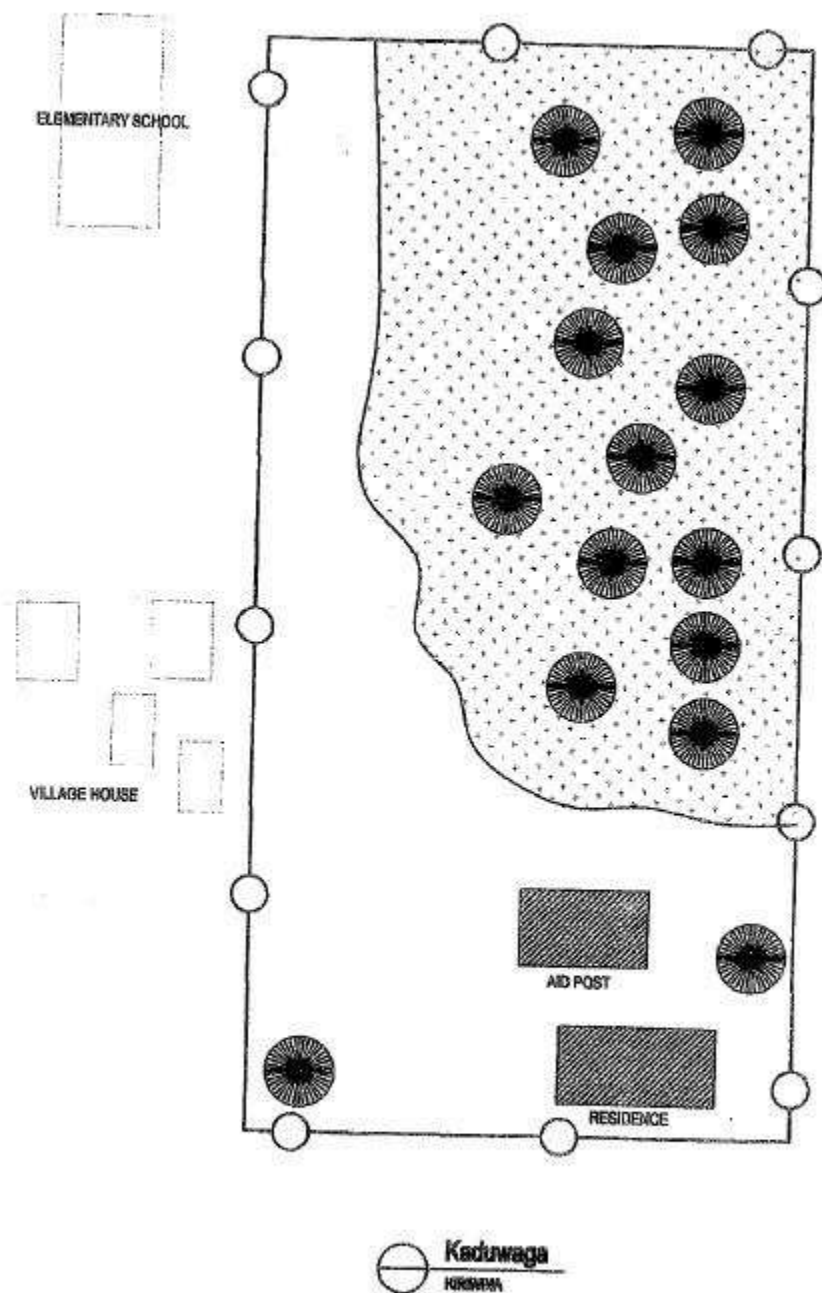


Figure 1: The Kiriwina Islands Map



Figure 2: Kaduwaga viilage water front at low tide.



Figure 3 : Village Ground water source only during low tides.



Figure 3 indicates the level of water table on the Island. The Islanders often rely on this ground water (slightly salinated) for domestic use. As much as possible, care must be taken not to contaminate the ground water source during the CHP construction. Base line water quality assessments will be done prior to any civil works hence monitoring of the water quality during and thereafter the completion of Civil works.

Figures 4-9 : Pictures of the site Assessments.



4. Existing Aid Post - top 5. Stable & flat land for CHP Construction - top 6. Children in main kaduwaga village - top

7. Public forum on Land & Environment. 8. Signing of Land Acquisition MOA in public forum.



9. Jetty construction at Kaibola on the main Kiriwina Island in 2014 – below.



Table 5: Earth Quakes in PNG – 29th March 2015

| Earthquakes in Papua New Guinea | | | |
|---------------------------------|--|-----------|------------------|
| Date | Location | Magnitude | Fatalities |
| Jul 17, 1998 | Near North Coast of New Guinea, Papua New Guinea | M 7.0 | |
| May 10, 1999 | New Britain region, Papua New Guinea | M 7.1 | |
| May 16, 1999 | New Britain region, Papua New Guinea | M 7.1 | Fatalities 2,183 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 8.0 | Fatalities 2 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 7.8 | |
| Nov 17, 2000 | New Britain region, Papua New Guinea | M 7.8 | |
| Sep 8, 2002 | New Guinea, Papua New Guinea | M 7.6 | Fatalities 4 |
| Jan 10, 2003 | New Ireland, Papua New Guinea, region | M 6.7 | |
| Mar 11, 2003 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Jun 7, 2003 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 9, 2005 | New Ireland Region, Papua New Guinea | M 7.6 | |
| Sep 29, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Dec 11, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 1, 2006 | Bougainville Region, Papua New Guinea | M 6.8 | |
| Oct 17, 2006 | New Britain region, Papua New Guinea | M 6.7 | |
| Jun 28, 2007 | Bougainville region, Papua New Guinea | M 6.7 | |
| Sep 26, 2007 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Nov 22, 2007 | Eastern New Guinea Region, Papua New Guinea | M 6.8 | |
| Jun 23, 2009 | New Ireland region, Papua New Guinea | M 6.7 | |

Environmental Management Plan

Sinaketa, Milne Bay Province

August 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(April 8 2015)

Currency Unit - PNG Kina

K1.00 = \$0.37

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| DEC | : | Department of Environment & Conservation |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

- 1) **Affected Persons (APs):** Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership

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A. BACKGROUND

- 1) The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating provinces.
- 2) The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

The Department of Environment and Conservation has been consulted for permission for the Level 1 activities in the Community Health Post Constructions prior to any civil works commenced. The permission letter from the Secretary of the Department of Environment and Conservation is attached in Appendix 3.

B. CHP REQUIREMENTS AT SINAKETA SITE

- 3) Milne Bay Province has a land mass of approximately 14 760 Km² and a sea area of about 230 000 Km². There are more than 600 islands of which 160 are inhabited. It is located towards the eastern end of the country. The Province has some rugged terrain and one of the largest maritime areas with many scattered islands. The geography thus makes the efficient delivery of goods and services to the rural majority population of 95.3% very difficult. Only 11 % of the rural populations have access to roads (1995) and of 24 Air strips, only 2 are used currently. There are four (4) Districts and 16 Local Level Governments in the Province.

Sinaketa is in Kiriwina- Goodenough District. The Kiriwina Islands are a 450 Km² archipelago of coral atolls. The major islands in the group are Kaileuna, Vakuta and Kitava. Kiriwina Island is relatively flat with only a few hills along the eastern shore. Despite this, there has never been any recorded high tide into the Island in the past. Most of the population of 12 000 indigenous people live on the main Kiriwina island which is where the Government station of Losuia is located. The only busy airport is also located at Kiriwina Island and is accessible by third level airlines. There is also an existing district hospital, a market and a few shops that have automatic teller machines, a police station and other Government agents on the main Kiriwina Island. Communication by mobile phone services is available via the Digicel PNG telecommunication company.

- 4) Economically, the Province is dependent upon tourism, oil palm and gold mining on Wood Lark Island. There are small scale village projects on fishing, cocoa, copra, informal sector markets like carving, betel nuts and sea food, mostly fish. The majority of the population lives by subsistence farming; gardening for self-consumption and for ceremonial occasions or exchange systems or for local marketing at the government station. Mean of transport is mostly by sail canoes or speed boats for those who can afford the operating cost.
- 5) The Sinaketa Community Health Post (CHP) site is located in the south west coast of Kiriwina Island in Ward 26. This is within Kiriwina Rural LLG which has a population density of 48 per square kilometer and a total community population of 1099 with about 113 households ; it meets the selection criteria of the Project for the rural location of a new CHP. The land proposed for building the health post is suitable (0.34 hectares) for the construction of a CHP and three staff houses, being located on flat land, in a central location, with good access by both road and sea transport. The Community Health Post is expected to provide consultations and treatment to an average of forty (40) persons per day. The final CHP design options have been completed and accepted by the Milne Bay Provincial Health Authority.
- 6) The landowners have agreed to alienate land for the CHP and have signed a Voluntary Land Use Agreement with the National Department of Health. To ensure that the agreement is truly voluntary, the Project followed adequate safeguards processes including extensive consultation with the local community, use of applicable National land laws and regulations, and due diligence to ensure that local people will not experience major adverse impacts. The landowner groups willingly provided the land in consideration of the benefits of having a CHP in their community.

The Trobriand Islands, (part of the *Massim* region of Milne Bay) lie in the Solomon Sea, due north of the eastern tip of mainland Papua New Guinea. The Trobriand group is comprised of eight inhabited islands and over a hundred uninhabited islets. Most are raised coral atolls, and so almost uniformly flat, except for Kitava Island. The dead coral foundations are covered by humus, which supports tropical vegetation and enables food cultivation on all the inhabited islands. The largest island in the group is Kiriwina, which is around 45 kilometers long and between 2 and 14 kilometers wide, with approximately 60 villages. The capital of the Kiriwina- Good enough district is Losuia, which has a few shops, an airport, a hotel, district administration offices, a large market, a rural health centre and a high school. There is an extensive road network (built by the Americans during the war) connecting most of the villages in north Kiriwina, and one road south to the less populated south. The roads are made of crushed coral rock, and while they are all-weather roads, are often poorly maintained so travel is slow.

- 7) There will be construction of a new CHP facility and three staff houses as per the attached site plan as in **Appendix 4**. There will be some earth works required especially for the drainage, leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. Soil erosion control during earth works is vital as the storm water drainage outlet is only 20 meters away from the sea.
- 8) Water extraction from ground water well (5000 L) will provide backup water supply for Sinaketa CHP during the dry seasons. Ground water extraction permits have been acquired from CEPA as attached in appendix 6. However, the Project will be installing nine 5000L water tanks to capture rain water. Milne Bay has a prolonged wet season from November to April and regular rainfall all year round. There will be one tank for each of the three staff houses. The water for drinking would come from the four tanks at the CHP facility and water for ablutions and other domestic use will come from tanks on the other two sheds. Power supply at this time would come from a 3 – 5 KVA Generator and solar panels.
- 9) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.

- 10) All types of wastes including construction, kitchen and toilet wastes will be managed as per the EMP and CEMP.
- 11) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category | Sub-category | Category of activity | Level 1 |
|----------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

C. LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

1) LEGAL AND POLICY FRAMEWORK

- 11)** The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed **Level 1 Activities**.
- 12)** The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the

development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project's EARF and the measures set out in this updated EMP.

2) INSTITUTIONAL ROLES AND RESPONSIBILITIES

13) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

14) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed Construction Environmental Management Plan (CEMP) that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the Safeguards Specialist advises the Project's Construction Manager that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

3) GRIEVANCE REDRESS MECHANISM

- 15) The Project will establish a Grievance Redress Mechanism (GRM) which will be **accessible** (considering literacy levels), **predictable** (known procedures, within a set timeframe), and **transparent**. The Provincial Safeguards Officer (PSO) will be the grievance redress focal point to address Project related concerns that may arise during implementation, through public meetings, communities and affected people will be informed by the RPHSDP that they have a right to grievance resolution, and told how they can have access to the GRM. Complaints and grievance procedures will be based on those outlined in the Land Assessment Framework. These will be adapted slightly to ensure communities are easily able to register any complaints at the local level, and that there is a publicly acceptable forum to deal with them. A Grievance Registration book will be established in every CHP site, to be held and administered by a trusted literate member of the community. This may be the Village Magistrate, Ward Development Councilor, the Aid Post OIC, women's group leader, or other appropriate person, chosen by the community. Anyone can approach this person (the 'Grievance Registrar') to lodge a complaint or grievance. **See Appendix 3** for an example of a grievance intake form.

4) ENVIRONMENTAL MANAGEMENT PLAN

a. Environmental Management Plan and Monitoring

- 16) **Table 2** contains the EMP table updated for the Sinaketa site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the Bid and Contract Documents (BCD).
- 17) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 18) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 19) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the **PSU/NDOH on a monthly basis and to ADB semi-annually.**

b. Requirements of the Construction Environmental Management Plan

- 20) Based on the EMP included in the approved IEE and this updated EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 21) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 22) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 23) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Section 5 provides guidance on how to prepare a CEMP.

Table 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Land use MOA signed upon agreement by true land owners & users for the health services thus minimal financial and social impact ensured as per the land and environment assessment in accordance with ADB and Go PNG legal requirements. | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding. | Site designation above potentially flooded sites. Slight elevation of building structures above ground level. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed land surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams. Parking areas and workshops (if any) to have oil separators. | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible by formal Agreements with resource owners in place Obtain permits as required. Submit quarry management plan or gravel extraction plan to PSU. | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible. | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion. All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas. Minimize size/duration of cleared areas | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|---|---------------------------------------|
| | | Undertake progressive re-vegetation. | |
| Storage and handling of construction materials, fuel, and lubricants | Secure storage, minimize generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Store chemicals in secure area, with concrete floor and weatherproof roof. Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill. All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution (high water table). | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| | | No impacts on existing users (mini-hydro) | |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| *Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

5) GUIDELINES FOR PREPARATION OF CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

MANAGEMENT PLAN

PREPARATION

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

CONTENT

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (DEC) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. The flow of storm water into the nearby outlet drains to the surroundings would only reach the sea water about 20 meters away hence controls must be put in place.
- b. Earth excavation and all types of wastes should have waste storage containers that will be disposed off as approved by local authorities due to high water table area.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation should be minimized as much as possible.
 - b. Leveling/ Backfilling and compaction if (f) (ii) (a) is required.
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses as per the design
 - b. CHP facility and structures as per the design
 - c. Incinerator & Gen set house as per the design
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;

- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 3 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|----------------------|--------------------|------------------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works. This includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under an environmental permit may be required. This will need to be obtained from DEC. This section of

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- Type of construction of facilities (floor, walls, and roof);
- Storm water drainage, collection systems, flow paths, and disposal areas;
- Source of water and type of treatment required for cooking, washing, and drinking;
- Effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- Source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- How long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 4 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a |

c.g.i. = corrugated iron; n.a. not applicable.

6) ENVIRONMENTAL PROTECTION WORK PROCEDURES

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

7) MONITORING OF WORK

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A **monthly report** on monitoring activities is to be included in the monthly CEMP report.

8) STAFF AND WORKER TRAINING

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

9) REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month

- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

Appendix 2: Department of Environment & Conservation Permit – Level 1 Activity



Mr. Robert Akers - Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2011
File: ENPC/28-14-32
Action Officer: (X)

Dear Mr. Akers,

SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2011, has been received and acknowledged.

Following an inspection of the Atoton (Milne Bay Province) premises (Bubuleta and Gonyey) on 19th -20th November 2011, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the Environment Act 2000.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the Environment Regulation 2002.

Yours sincerely,

K. MICHAEL WAU

Deputy Secretary

Delegate of the Department of Environment & Conservation

Handwritten notes:
Date
Please send to
1st Grade &
file hand copy
[Signature]

Appendix 3 - GRIEVANCE INTAKE FORM (GRM)

CHP/Site Location: Sinaketa

The Rural Primary Health Service Delivery Project welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| Contact Information | | | |
|--|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |
| | | | |

Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

Appendix 4: Sinaketa Survey Plan



Appendix 5: Sinaketa CHP Site Plan



Appendix 6: Permit for ground water extraction from CEPA - Additional Activity Permit



CONSERVATION AND ENVIRONMENT PROTECTION AUTHORITY

OFFICE OF THE MANAGING DIRECTOR

Phone: (675) 361 4500
Facsimile: (675) 325 0182
E-mail: officesec@dec.gov.pg

BMobile Building, 1st Level
P.O. Box 6601, BOROKO, NCD
Papua New Guinea

Date: 13/08/2015
Our Reference: EP-L2A(463)
Action Officer: ei

National Department of Health
P.O. Box 807,
WAIGANI,
National Capital District
Papua New Guinea.

Dear Sir;

Subject: Grant of Environment Permit for National Department of Health.

Attached please find the Environment Permit (**EP-L2A(463)**) that has been recently approved by the Director.

The permit authorizes the extraction of water from underground well situated within the grounds of Sinakela Village, Milinch of Losuia, Fommil of Trobriand (the "premises") in Kiriwina Goodenough District, Milne Bay Province. The water extracted will be mainly used for Rural Primary Health Care.

Further to the approval of the Environment Permit, your company is also hereby reminded of its obligations under this approval.

Please note that we are now operating as the CEPA. You will be informed accordingly of the new annual charges in due course.

For any clarification on the terms and conditions of the permit, please contact the undersigned on Phone 3014543 or 3014522.

Yours faithfully,


GUNTHER JOKU
Managing Director

Appendix 7: Certificate of Land Alienation (COA) for Sinaketa CHP site.

U Recved 05-01-15



OFFICE OF THE SECRETARY

Telephone: (675) 325 0233
Facsimile: (675) 325 0553

Department of Provincial &
Local Government Affairs
P O Box 1287,
BOROKO 111,
National Capital District,
Papua New Guinea

Date: 16th December 2014
File : 35-6-4

Mr. Simon Malu
Director – Land Acquisition
Department of Lands and Physical Planning
P. O. Box 5665
BOROKO
National Capital District

**SUBJECT: CERTIFICATE OF ALIENABILITY (COA), KAINAKAILABUAGAU LAND
(PORTION 103) MILNE BAY PROVINCE**

Please find attached Certificate of Alienability issued upon my satisfactory assessment of the Land Investigation Report for outright acquisition of Kainakailabuaga Land (Portion 103) for the purpose of Community Health Aid Post as per your request of 3rd December 2014.

Details of certificate as follows:

| NO | COA NO | L.A (Ha) | NAME OF LAND | PURPOSE |
|----|------------|----------|------------------------------------|---------------------------|
| 1 | 42/12-2014 | 0.34 ha | Kainakailabuaga (Portion 103 c) | Community Health Aid post |

Yours Sincerely,


Munate Uyassi
Secretary

Appendix 8: Map of existing Aid Post at Sinaketa.

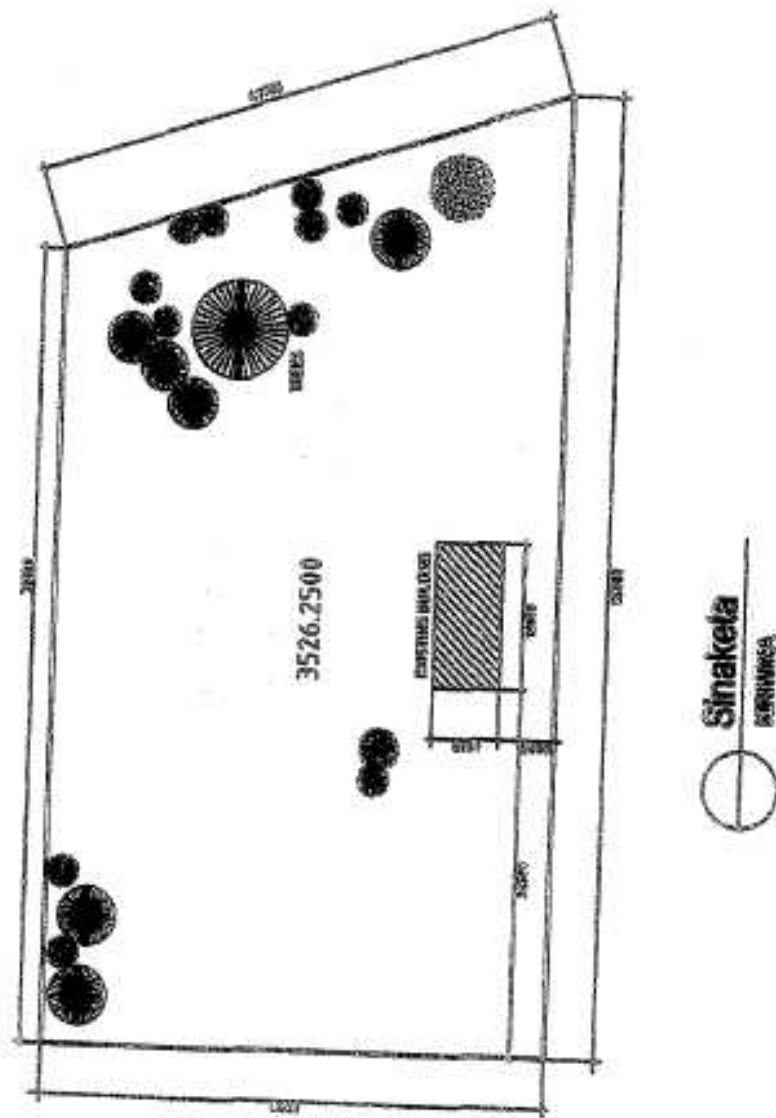


Figure 1: The Kiriwina Islands Map



Figure 2: Sinaketa viilage water front at low tide.



Figure 3 : Sinaketa Primary School, next to CHP site



Figure 2 indicates the level of water table on the Island. The Islanders often rely on this ground water (slightly salinated) for domestic use. As much as possible, care must be taken not to contaminate the ground water source during the CHP construction. Base line water quality assessments will be done prior to any civil works hence monitoring of the water quality during and thereafter the completion of Civil works.

Figures 4-9 : Pictures of the site Assessments.



4. Back view of Existing Aid Post - top



5. Stable & flat land for CHP Construction - top



6. Children in main Sinaketa vi

7. Public forum on Land & Environment.



8. Signing of Land Acquisition MOA in public forum.



9. Jetty construction on the main Kiriwina Island in 2014 – below.



Table 5: Earth Quakes in PNG – 29th March 2015

| Earthquakes in Papua New Guinea | | | |
|---------------------------------|--|-----------|------------------|
| Date | Location | Magnitude | Fatalities |
| Jul 17, 1998 | Near North Coast of New Guinea, Papua New Guinea | M 7.0 | |
| May 10, 1999 | New Britain region, Papua New Guinea | M 7.1 | |
| May 16, 1999 | New Britain region, Papua New Guinea | M 7.1 | Fatalities 2,183 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 8.0 | Fatalities 2 |
| Nov 16, 2000 | New Ireland Region, Papua New Guinea | M 7.8 | |
| Nov 17, 2000 | New Britain region, Papua New Guinea | M 7.8 | |
| Sep 8, 2002 | New Guinea, Papua New Guinea | M 7.6 | Fatalities 4 |
| Jan 10, 2003 | New Ireland, Papua New Guinea, region | M 6.7 | |
| Mar 11, 2003 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Jun 7, 2003 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 9, 2005 | New Ireland Region, Papua New Guinea | M 7.6 | |
| Sep 29, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Dec 11, 2005 | New Britain region, Papua New Guinea | M 6.6 | |
| Sep 1, 2006 | Bougainville Region, Papua New Guinea | M 6.8 | |
| Oct 17, 2006 | New Britain region, Papua New Guinea | M 6.7 | |
| Jun 28, 2007 | Bougainville region, Papua New Guinea | M 6.7 | |
| Sep 26, 2007 | New Ireland Region, Papua New Guinea | M 6.8 | |
| Nov 22, 2007 | Eastern New Guinea Region, Papua New Guinea | M 6.8 | |
| Jun 23, 2009 | New Ireland region, Papua New Guinea | M 6.7 | |

Environmental Management Plan

Jafa, Eastern Highlands Province

20 September 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(16 April 2014)

Currency Unit - PNG Kina

K1.00 = \$0.329

\$1.00 = K3.29

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| DEC | : | Department of Environment & Conservation |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

Affected Persons (Aps): Are people who stand to lose as a consequence of a Project, all or part of their physical or non-physical assets irrespective of legal or ownership titles.

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BACKGROUND

The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The Project will be delivering six outputs as follows: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) Project monitoring, evaluation and management. The Project is being implemented by National Department of Health (NDOH) and the local government administrations of the eight participating Provinces.

The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

CHP REQUIREMENTS AT Jafa PROPOSED CHP SITE

- 1) Eastern Highland Provincial (EHP) capital is Goroka and is the homeland of Nokondi the legendary icon, the one legged man of PNG folklore. The Province has a land area of 11 157 Km² that covers the Bismark range and the upper Ramu Valley in north of the province including Araro, Benabena and Dunatina Valleys, these valleys are agriculturally productive. The remote south of Marawaka is mountainous. The occupied area was 5 724 and with a population density of 38.8/square kilometre at the time of this NRI research in 2010.
- 2) Geographically, the area around Henganofi provides a very good income generated from the production and sale of coffee, garden vegetables, tobacco and firewood while most in the northern residents earn a moderate income. There are very few income earning opportunities for the inhabitants of the south of Obura-Wonenara, Okapa and Lufa at the time of this report.
- 3) There were 3 Health Center facilities, one for every 30 590 population and 11 Aid Posts for every 8 343 population living in the District.
There are no medical Officers, 19 nursing Officers, one for every 4 830 population as per the National Research Institute March 2010 Report for Kainantu District with regards to population and health facility ratio.
- 4) There were 54 Elementary schools, 13 Community schools, 26 Primary schools, 2 provincial high school and 2 Vocational centers. The total literacy rate was 53.2 % of which 60.2 % are male and 45.8 % are female.
- 5) The proposed Jafa CHP site has been selected by the Eastern Highlands Provincial Health Authority based on the remote location and the catchment population that will utilize the CHP facility. This facility can also make referrals to the Kainantu District Hospital which is 40 minutes' drive from Jafa and

about two hours' drive from the Goroka General Hospital via the partly deteriorated road which connects to the main highway.

- 6) This proposed CHP site at Jafa is a customary land inherited by customary arrangements. The land was cleared for gardening purposes and thus does not pose any environmental risks to the fauna and flora. There are no protected sites or species at the site and or the surrounding areas as per the site assessments by the Project Environment Assessment Advisor. The EMP will be developed to guide the contractor during the construction phase. The contractor will be trained on CEMP and work will be monitored and progress reports submitted. Grievances Committee has been established for the Jafa community for any dispute resolutions at the village level. More information about the Jafa community profile can be found in Appendix 9.
- 7) New drinking water extraction may not be the best option at this point in time due to environmental permit limitations however, the existing water supply may need upgrading for the CHP facility as a backup water supply for dry seasons. Otherwise water will be sourced from rain water as the Project will be installing nine 5000L tanks to capture rain water as Jafa has a prolonged wet season from December to April all year round. There will be one tank per staff house. The water for drinking would come from the tanks at the CHP facility and water for ablutions and or showers and other domestic use will come from the generator and incinerator sheds. Power supply at this time would come from a 3 – 5 Kva Generator. The proposed CHP design plan is attached as per Appendix 5.
- 8) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source. This also covers for sand, gravel and other construction materials extraction from the local environment.
- 9) All types of wastes including construction, kitchen and toilet wastes must be managed accordingly as per the EMP and CEMP and will not be allowed to seep into nearby water ways.
- 10) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the Project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category No | Sub-category | Category of activity | Level 1 |
|-------------|----------------------|--|---|
| | | | |
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water | Septic tanks for Sewage waste and sewage trench. Incineration and burial for medical |

| | | | |
|------|--|--|--|
| | | ways. | wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

Legal and policy framework

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes Projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities .

The implementation of the Project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possibly, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the Project’s EARF and the measures set out in this updated EMP.

ii. Institutional Roles and Responsibilities

11) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU’s Project manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU’s safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the Project civil engineer that the contractor may now commence work.

- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the Project engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

12) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed CEMP that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the safeguards specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the safeguards specialist advises the Project civil engineer that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

iii. Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been established for the Project and is set out in detail in the IEE. A Grievance Redress Committee (GRC) has been established within the Provincial level to address any environmental complaints at the earliest stage. All records of the committee meetings and how grievances were addressed will be maintained by the respective implementing agency, and the public will have access to these records. See Appendix 1 for an example of a grievance intake form.

IV Environmental Management Plan

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Jafa site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the BCD.

- 13) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the Project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to

determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the Project.

- 14) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the Project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 15) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the PSU/NDOH *on a monthly basis and to ADB semi-annually.*

b. Requirements of the Construction Environmental Management Plan

- 16) Based on the EMP included in the approved IEE and this Site specific EMP, at the onset of Project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subProject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subProject. This training will be undertaken by the PSU's PE and SS.
- 17) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 18) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU
- 19) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Appendix 3 provides guidance on how to prepare a CEMP.

APPENDIX 1 - Grievance Intake Form (GRM)

CHP/Site Location:

Project ____ welcomes complaints, suggestions, comments, and queries regarding Project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| | | | |
|--|--|-----------|--|
| Contact Information | | | |
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |

Portion to be filled in by the staff:

| | |
|-------------------|---|
| Date received: | |
| Received through: | In person mail email fax phone sms |

| | |
|---|--|
| | |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

APPENDIX 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|---|---|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Customary Land Acquisition by Agreement. | Identification of suitable land possessing titles on government or church-owned land or acquire all customary land by Agreement only. Resettlement plan for sites planned for acquisition | NDOH, PSU, provincial lands officers, DLPP officers. |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding and or land slips | Site designation should be above potentially flooded areas and away from land slip areas. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas and manage spoil dumps. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge or seep into surface water streams. Parking areas and workshops (if any) to have oil separators | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. Standard Absorption trenches to be installed. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible Agreements with resource owners in place Obtain permits as required Submit quarry management plan or gravel extraction plan to PSU | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area as in Appendix 7. Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material (top soil) to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas Minimize size/duration of cleared areas Undertake progressive re-vegetation | Construction contractor, PE, SS |
| Storage and handling of construction | Secure storage, minimize generation of potential water pollutants, minimize | Store chemicals in secure area, with concrete floor and weatherproof roof Ensure that construction equipment and vehicles are | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|--|--|---------------------------------------|
| materials, fuel, and lubricants | accidental spills and emergency response plan in place in case accidental spills occur | maintained in good condition. All refueling to be done at least 20 m from waterways Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. Waste water and sewage waste management. | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained No impacts on existing users (mini-hydro) | Construction contractor, PE, SS, NDOH |
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. | Construction contractor, PE, SS |

{ }

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|---|-----------------------------------|
| facilities | | To be included as part of final inspection before final payment is made. | |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits as required. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

APPENDIX 3 - Guidelines for Preparation of Construction Environmental Management Plan

Preparation

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the Project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU, or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to

be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

Content

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the Project EMP. The CEMP consists of the following sections:

a. Introduction and Purpose

Identify the Project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and/ or Environmental Permits at this point in pre-construction stage as this Project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (DEC) , however all Environmental Management

Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be a few minor environmental concerns;

- a. The nearby river is protected from soils, rubbish and contaminants during wet seasons.
- b. Locate an existing gravel source for construction purpose requires a permit depending on the required amount.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
 - a. Camping, messing, drinking water, toilets and bath rooms, offices etc.
- ii. Earth works
 - a. Top soil Excavation (profiling)
 - b. Leveling/ Backfilling / compaction and landscaping
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses
 - b. CHP facility
 - c. Incinerator & Gen set houses
 - d. Fencing
- iv. Plumbing works
 - a. Clean water tank and piping and taps
 - b. Waste water pipes and toilet /shower
 - c. Install septic tanks and absorption trenches
- v. Electrical wiring and Gen set
 - a. Lighting

- b. Equipment
 - c. Power points
- vi. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Demobilize Clean up and

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following;

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the Project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 2 - Example of Table for Machinery that will be Brought to Site

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

| Make and Type | Age (years) | Condition |
|-----------------|-------------|-----------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works this includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under EPAR, an environmental permit may be required. This will need to be obtained from DEC. This section of the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- type of construction of facilities (floor, walls, and roof);
- storm water drainage, collection systems, flow paths, and disposal areas;
- source of water and type of treatment required for cooking, washing, and drinking;

- effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- how long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 3 – Guide to Contractor’s Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a |

c.g.i. = corrugated iron; n.a.= not applicable.

Environmental Protection Work Procedures

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the Project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the Project EMP provides a list of mitigation requirements that will

require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the Project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The Project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use and storage of hazardous materials.
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

Monitoring of Work

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

Staff and worker Training

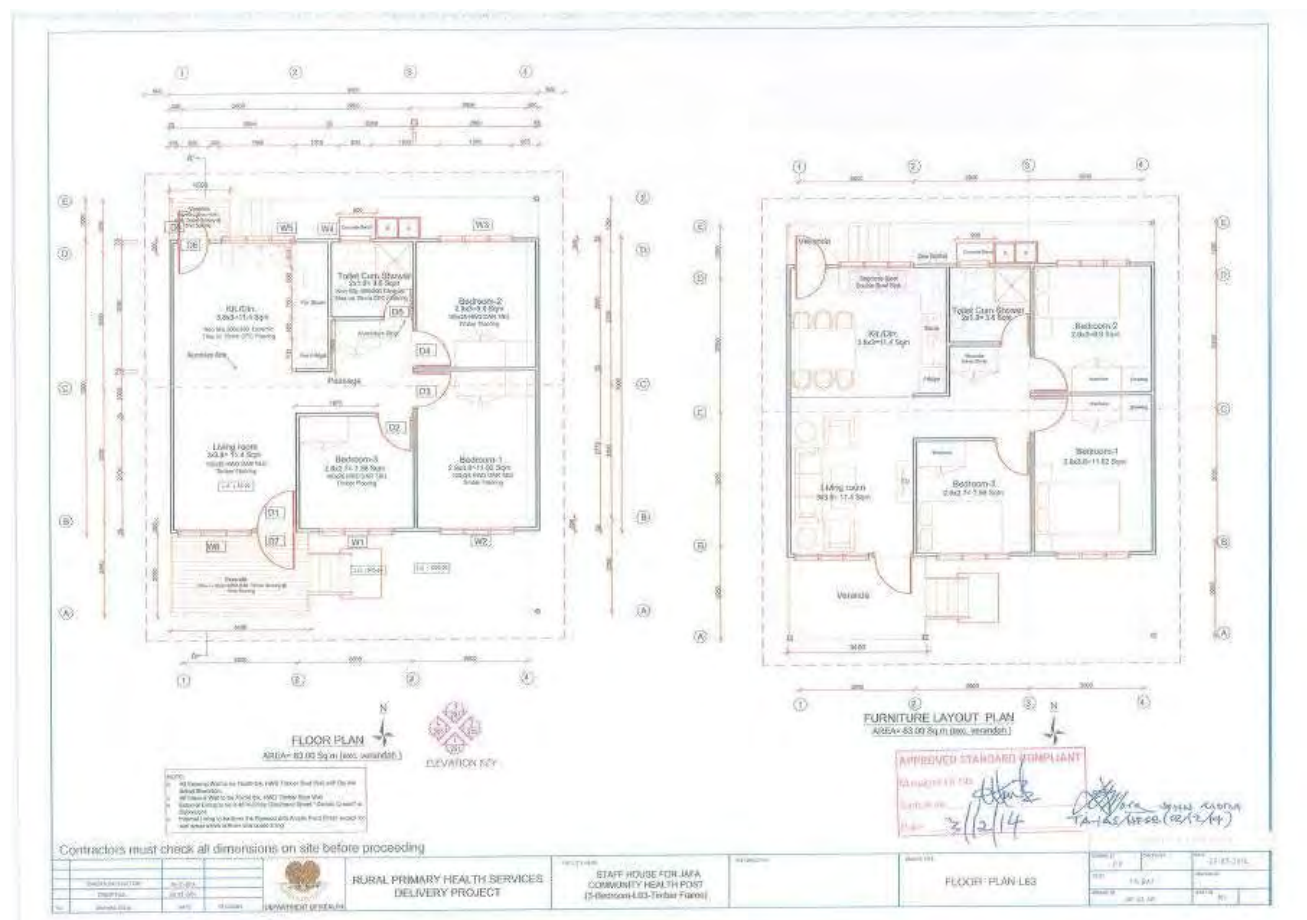
12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the Project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month
- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues



APPENDIX 5: Jafa CHP Site Plan



APPENDIX 6: Jafa CHP SITE PICTURE.

Community consultation and site Environment assessment



Jafa CHP Site

1. Community consultation and awareness on land use and land use consent with land owners and users.
2. Environment management and controls discussed with the people.

Provincial Health officers meetings with the Project Safe guards Officers on the land acquisition and Environment Management practices expected of this Project.

Eastern Highlands Province



Appendix 9: Jafa Community Profile

| Village Name | Onki Village | Jafa Village | Ino - Onka | Janavo | Bazanofi | Kumanofi | Jompo sa | Namura | Orege | Comment |
|---------------------|---|---|---|--|--|---|---|---|---|--|
| Clan Names | Ogonofi Yari Onki Bagonofi | Jamuza Ranofi Tasage Ontenu | Klemento , Ogi, Jano, Amigi clans- All are Amunonofi Clan | Jano and Upa Clan | Ontenu, Tafunina and Taba Nofi Clans | Kunamofi and Kremenofi clans | Tirae Clan | Kere – 1 Hajafa Namura Ontinofi Munanofi | B'sa orege (Henkaru) & Hani Orege | |
| Ward | 4 | 4 | 5 | 1 | 5 | 5 | 4 | 2 | 4 | Total of 4 wards visited |
| LLG | Kamano | Kamano No 1 | Kamano No 1 | Kamano No 1 | Kamano No 1 | Kamano No 1 | Kamano No 1 | Kamano No1 | Kamano No 1 | |
| District | Kainatu | Kainantu | Kainantu | Kainatu | Kainantu | Kainantu | Kainantu | Kainantu | Kainantu | |
| Population | 898 | 562 | 249 | 675 | 471 | 380 | 181 | 1195 | 1129 | Est Population = 5740 |
| Denomination | EBC – 180 L – 450 SA – 200 SDA – 120 Total = 950 | EBC – 150 L – Renewal - 320 L - Evangelical-300 Total = 770 | EBC -200 L – 160 FS – 195 Baptist – 152 SDA – 120 Total = 827 | CLC– 81 L – Evangelical-85 L – Renewal -60 Total - 226 | EBC – 203 L – 167 L – Renewal-57 Baptist – 43 Total - 470 | EBC – 9 L – 245 L-Renewal – 105 PNG Revival-24 Total - 383 | EBC – 30 SDA – 20 L – 35 FS – 25 Total – 110 | EBC – 15 L – 85, L Renewal - 60 FS -80 New Covenant-50 / CLC - 13 SDA-70 Total - 373 | EBC – 56 L -90 FS – 65 Others – 48 Total - 259 | EBC- 843 L – 1552 L-renewal – 602 L- Evangelical-385 SDA – 330 SA – 200 Baptist – 195 CLC – 195 PNG Revival-24 |

| | | | | | | | | | | |
|-------------------------------|--|---|--|--|---|--|---|---|--|---|
| Information on Housing | P – 5 SP – 2 BM – 600 Total – 607 houses | P – Nil SP – 3 BM – 400 Total - 403 | P – 5 SP – 12 BM – 163 Total - 180 | P – 6 SP – 8 BM – 505 Total - 519 | P – 2 SP – 91 BM – 80 Total - 173 | P – 4 SP – 2 BM – 180 Total - 186 | Only bush material houses Total - 180 | P – 5 SP – 12 BM – 1200 Total - 1217 | P – 2 SP – 3 BM – 102 Total - 107 | Total of P- 29 SP – 133 BM – 3230 Total = 3392 |
| Information on Health | Health Facility (Aid post) is accessed by walking and is 5 km far. Ante- natal clinic and delivery is done at Famo Aid Post and the charge that was normally charged is K20. 3 Village Health Volunteer 3 Village Birth Attendant | Health Facility is too far (Famo Aid Post) and the charge for Delivery is K20.00 2 Village Health Volunteers 3 Village Birth Attendants | The health Facility is close by and there are 2 village health volunteers and 10 village birth attendants. It is not clear which facility women go to and type of facility. | The aid post is 5 km far. The women go to Kainantu District for Ante-natal clinic and use to pay K25 for deliveries. There are no Village Health Volunteers and Village Birth Attendants. | The facility often visited is Famo Aid Post. | The distance to Famo Aid post is 6km and women mostly go to Famo Aid post for ante-natal clinic and deliveries. The women use to pay K20.00 for delivery. No VHV and VBA. | Women go to Barola Haus Mama Clinic for ante natal care and is 3 km walking distance. The women pay K20 for delivery. 2 Trained VHV 2 Trained VBA | Barola Haus Mama is only 2 km and women go for ante natal care there. Deliver charged is K20.00 /delivery. | Women often go to Kainantu Rural Hospital for ante-natal care. The Health Facility is only 1.5km away. (Not other statement) | |
| Common Diseases | Malaria, Typhoid, TB, Flu, Deliveries (it is not | Typhoid, TB, Malaria, Unwanted Pregnanci | Pneumon ia, Diarrhoea , Malaria, Typhoid, | Fever, Malaria, Typhoid, Diarrhoea , Typhoid, | Typhoid, Fever, Diarrhoea, Cold, Heart burn, TB, | Toothache , Scabies, Diarrhoea, Joint pains, | Fever, Cough, Diarrhoea, Typhoi | Fever, Pneumonia, Cough, Sore, Malaria, | Suggested that TB is now common in their area these days. | |

| | | | | | | | | | | |
|--|--|--|--|--|---------------------|--|--|--|--|--|
| | clear what the community meant by Child birth Deliveries) | es (no family planning) Sore. Other Issues – Marijuana and no family planning | Skin diseases, TB, Maternal deaths, Back ache, joints pain, swollen of legs. Social Issues – Believe that people die of sorcery | Cancer, PID in women 45yrs and above, Joints pain. Social issues – Drugs, marijuana . | Problem in delivery | Stomach pains, back pains, eye sights problem. | d, PID, joints pain, weak, sore. Social issues – Smokin g (<i>not specifie d what sort of smokin g referre d to here</i>) and drinkin g alcohol . | PID, Bronchitis, joints pain, weak, back aches. Social& domestic issues- Unwanted pregnancies , smoking (not specified) alcohol, no idea on family planning, Unwanted pregnancies and Polygamy. | | |
| Any Implementation of Healthy Island Setting? | None | None | None | None | None | None | None | None | None | |
| Any motoring Visits by other departments | Health Workers - only once with awareness and Immunisation | Health workers – Once a year for immunisation | Health Workers visited twice a year for immunisation. Education Inspector once a year for Schools Inspection | Health – once a year for immunisation. Education – Once a year for School inspection. | None | None | Salvation Army visited in 2010 and carried out community health. In 2012 Police and Parish elders visited the community and talked about peace. | Health Workers- Once in a year with SIA. And 3 months in a year with Immunisation. Crusades by Church groups. | No records of any visits since 2010 to 2011. | |

| | | | | | | | | | | |
|------------------------------------|---|---|--|--|--|---|--|--|---|--|
| <p>Information on Water</p> | <p>Collect water from creeks and Rivers.</p> <p>Water is stored in Buckets or containers.</p> | <p>Collect water from Springs and water is stored in buckets and containers</p> | <p>Water is stored in Water tanks (3) collected from rain, and water is collected from creeks and water holes using buckets and containers. There is also water supply in the community (6 taps)</p> | <p>Water is stored in water tanks and those without water tanks store water in 44gallon drums when there is rainfall. The community has water supply and most collect water from rivers and creeks. Water is stored in buckets and containers.</p> | <p>Water is collected from the Swamp and creeks and is stored in containers and buckets.</p> | <p>Water is collected from Rivers and creeks and are stored in buckets and containers</p> | <p>There is water supply in the village and water is collected from the water supply in the village or from the rivers. There are a few water tanks where water is stored that is collected from rain.</p> | <p>Water is collected from Streams, rivers and creeks and stored in buckets.</p> | <p>The communities collect rain water, water from creeks and there is also a water supply. Water is stored in Water tanks, 44 gallon empty drums and buckets.</p> | |
| | <p>The creeks are located at the swampy area and dries up during dry season. The river is polluted with waste being disposed into rivers.</p> | <p>The springs are located in the bush and Mountain base and far. Difficulties are with weight and distance and also water gets dry during dry season</p> | <p>The water from the water hole and creeks are not clean and not enough storage containers to store water.</p> <p>Water supply cannot flow during dry season and is</p> | <p>The problem with 44 gallon drums is that it often gets rusty when the water finishes during dry season.</p> <p>Water supply cannot flow during dry season and is</p> | <p>The problem with water from the creeks and swamps are, the water does not have a good taste and people get diarrhoea.</p> | <p>The problem faced is the creeks are located at the swampy area, and the rivers in the bush. The distance to collect water is far.</p> <p>Water is not boiled and people get sick with diarrhoea.</p> | <p>Rain water is sometimes dirty and water supply from taps is also dirty. The rivers are not very clean and mosquitoes breed from</p> | <p>The water gets dirty during rainy season.</p> | <p>The water from the creeks gets dirty and polluted by alluvium gold mining.</p> | |

| | | | | | | | | | | |
|---|--|---|--|---|--|---|--|---|--|--|
| | | | | hard because there is only one tap. Rivers and creeks are too far. | | | water tanks. | | | |
| Sanitation VITP- Ventilated Improved Toilet Pits PL-Normal toilet pits FT- Flush Toilets B/R/S – Bush/Rivers/Sea | VITP – 0 PL – 60 Others not recorded | VITP – 0 PL – 20 (18 functioning & 2 not functioning) | VITP – 0 PL – 63 (59 functioning & 4 not functioning) B – Others use the bush as shown on record. | VITP – 0 PL – 400 (300 functioning & 100 not functioning) FT – 2 Other use Bush and Rivers | PL – 3 all functioning. The majority of the population uses the bush while others use the rivers. | VITP -1 PT – 200 Others use bushes and rivers. | PL - 100 70 are functioning while the other 30 are not functioning. | PL – 100 (90 functioning & 10 not functioning) Others use the bush and rivers. | PL – 105 FT – 2 | Total of; VITP -1 PT – 800 FT – 2 Others use busehes and rivers |
| Information on Power /Fuel | Kerosene Lamp – High cost of Kerosene Candle Torch Lights – High cost of batteries | Firewood for cooking is collected from far distances. Torch – Not enough money Kerosene lamp- High cost of Kerosene | Firewood for cooking – Distance to collect wood is far and there is shortage of firewood. Kerosene Lamp- House burnt due to accident. Battery Lamp – Not enough finance. | Firewood – Distance too far. Kerosene Lamp- House burnt due to accident. Battery Lamp – Not enough finance. | Firewood – Long distance to look for firewood. | Firewood- Long distance to look for firewood. Kerosene lamp and high cost of kerosene. | There is no electricity and gas is too expensive to buy hence the distance is too far and remote | Battery light – Cost money and distance is far to buy batteries. Kerosene lamp- Cost money and far to buy. | Kerosene stove – cost of kerosene is high. Power Generator – Cost of petrol and diesel is high. | |
| Mode of Transport PMV-Passenger Motor Vehicle – this also refers to busses. | By walking and PMV Trucks. | PMV Truck and walking | By PMV and walking | By trucks and by walking | PMV and by Walking | Walking and PMV | PMV | PMVs and Walking | Land Transport | |
| | PMV fares are high and the road is bad- When walking legs get | Road is damaged, too many pot holes, slippery and it's too far too walk so | Bad road condition and long distance to walk to town. | Too many pot holes and heavy load while walking which | Bad road, the road is slippery and there are a lot of pot holes. Carrying | Poor road condition and high cost charged on PMVs. People | The distance from the road is too far. | Accidents on the road, hold ups and bad road. | Road Condition is bad. | |

| | | | | | | | | | | |
|--|--|--|---|--|---|--|---|--|--|--|
| | swollen. | legs gets swollen when walking. | | leads to swollen legs and injury on foot. | heavy loads for long distances to the market. | end up with muscle cramps and with leg pains associated with walking long distances. | | | | |
| Information on Paid Employment CHW – Community Health Worker | 10 Teacher, 4 Male & 6 females 16 Store assistance, 10 males 6 females | 1 Doctor, 1 teacher, 1 CHW, 3 shop assistance. | 3 teacher (1 female & 2 males) 1 male doctor | 1 female Geologist, 1 male Agriculture officer, 3 male teacher, 1 male Architect and 1 female lawyer | Currently there are; 2 male carpenters, 1 male welder, 1 male mechanic, all working. | 2 female teacher 2 doctors 1 CHW | 1 driver (Male) 1 carpenter (Male) 2 teachers (1 female & 1 male) 1 nurse (female) | 1 electrician 2 teachers (1 male & 1 female) 1 male mining Superintendent. 1 female Pilot (Overseas) 1 hospital female Cleaner | 1 female shop assistant. 6 male securities. 6 male teachers 1 female teacher. 1 female and 1 male police. 1 male geologist. | |
| Technical Skills | 3 males with Technical Skills 1 Carpenter, 1 Plumber and 1 electrician | Currently one male is attending Technical skills training in Carpentry and Joinery | 3 male carpenters currently working & 7 male mechanics currently working | 1 retired carpenter and 2 male carpenters currently working. 2 male machinery operators and 1 welder currently working. | Same as Above | Same as above | Currently working; 1 carpenter (Male) 2 plant operators (male) 1 nurse (female) 1 teacher | 1 male carpenter 1 male joinery 1 male welder | 1 retired welder. 2 male mechanics. 1 male surveyor. 1 geologist. | |

| | | | | | | | | | | |
|--|---|--|--|---|---|---|---|--|---|--|
| | | | | | | | female 1 brick layer (retired male) | | | |
| Level of Education AL – Adult literacy E 1-2 – Elementary 1-2 CS - Community School (3-6) HS – High School (7-10) S - Secondary T/C/Uni - Tertiary/College/University | AL – 72 E 1-2 – 120 CS – 300 HS – 20 T/C/Uni-14 | AL – 0 E 1-2 – 45 CS – 28 HS – 16 T/C/Uni – 5 (These information is about the current pupils attending school) | AL – 60 E 1-2 22 CS – 54 HS – 28 S – 10 T/C/Uni - 9 | Currently there are 250 children attending elementary school, 112 attending CS, HS is 15 while 5 are at S. 7 are currently studying at T/C/Uni. There is no record of those in the community with their education level. | AL – None T/C/Uni – 5 with Qualification on Welding, Doctor and Teacher. Currently there are 25 children attending E 1-2, 50 attending Community School and 15 attending High School. | AL – 0 E 1-2 – 30 CS – 40 HS – 30 S - 2 T/C/Uni - 2 | Current ly there are 50 Elementary student s, 20 Comm unity S, 15 attendi ng high school, 10 attendi ng Second ary School and 10 attendi ng Univers ity. | Not recorded | The number listed is not specified whether it is the number of people in the community or if the number refers to the number of children currently attending classes. AL-192, E1-2 – 145, CS-243, HS -68, S – 28, Uni-7. | |
| Information on Facilities and services | No proper classrooms for Kindergartens. Primary School is 6km far, High School is 14 km far | Shortage of teachers at the Schools at Elementary and Primary Schools. High School is too far. No village court building. 2 sports field and grass is growing. | Shortage s of building materials for 1 elementary school and 1 primary School. No proper place for court sites and there is no sporting equipment | High School is far – It is risky for female students to walk the distance due to rape and hold ups. 1 Elementary School, 1 Primary School | 1 Elementary School with no proper classroom. 1 Community School with no proper classroom. 1 village court with no proper building. 1 sports-field but not labelled properly | No proper facilities for Elementary School, and primary school. There is no proper land for a sports field. | Bad road conditions and tribal fights affect the Primary School. There is 1 primary school. It too far to travel to the | The facility is too far and children often arrive late for school, there are leaking roof no fencing and no proper teachers' houses. | 1 rundown Elementary School. 2 community halls need maintenance. 1 village court house needs a proper house, 2 sports fields needs upgrading. | |

| | | | | | | | | | | |
|---------------------------------|---|---|--|---|---|---|---|--|---|--|
| | | | t. | community halls with leaking roofs. 1 sports field and no Court building | | | village court sides. There are 2 village court sides. (Area and location not stated) | | | |
| Distance from Facilities | All the facilities are located 15km far. The cost of bus fares is high. Police, Post office, Market, Fire Station, Store, Supermarket, Courts, Banks/ATM, Dept Agriculture & Lands Dept of Education, Dept of Community development. | All the facilities are located 15km far. The cost of bus fares is high. Police, Post office, Market, Fire Station, Store, Supermarket, Courts, Banks/ATM, Dept Agriculture & Lands Dept of Education, Dept of Community development. | The facilities are too far away and there are difficulties that are hard to solve. It is hard for farmers to seek help from DAL office. Road is bad. | Police station – no proper place to sit and lay complaints and it's too far. Post office – Too far and sometimes closed due to holdups. Market – No proper shelter to hide and it's too far. Store – No quality goods but expensive. Supermarket -Far and goods are too expensive. A court – | All the facilities are located 15km far. The cost of bus fares is high. Police, Post office, Market, Fire Station, Store, Supermarket, Courts, Banks/ATM, Dept Agriculture & Lands Dept of Education, Dept of Community development. | All the facilities are located 15km far. The cost of bus fares is high. Police, Post office, Market, Fire Station, Store, Supermarket, Courts, Banks/ATM, Dept Agriculture & Lands Dept of Education, Dept of Community development. | All the facilities are located 15km far. The cost of bus fares is high. Police, Post office, Market, Fire Station, Store, Supermarket, Courts, Banks/ATM, Dept Agriculture & Lands Dept of Education, Dept of Community development. | All the facilities are more than 10km and the only way to access facilities is by PMVs and Busses. | The distance is not very far from the District main town. Bank- Standing on a long queue waiting to be served. DAL-services not provided. With Market the gate fees are too high. Store goods are expensive. | |

| | | | | | | | | | | |
|--|---|--------------------|---|---|------|------|--|------|------|--|
| | | | | <p>No proper house for hearings and is too far.</p> <p>Banks/ATM – It is far to travel to town. The line is often full.</p> <p>Distance cost money and is hard to walk.</p> | | | | | | |
| Information on Community Development | <p>Elementary Classroom was funded by Department of Education for the last 3 years.</p> <p>Road & Bridge was funded by the Member for Kainantu - through DSIP funds</p> | Bridge - Completed | VBA in progress at Barola Haus Mama (Not sure who funds it and who is involved) | None | None | None | <p>Water supply was funded by Australian Government-completed.</p> <p>Fish Project funded by DAL-Incomplete.</p> | None | None | |
| Skills training community participated for the last 3 years | None | None | None | None | None | None | <p>Healthy Community – By Salvation Army.</p> | None | None | |

Environmental Management Plan

Brigiti, East Sepik Province

October 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(30 October 2015)

Currency Unit - PNG Kina

K1.00 = \$0.335

\$1.00 = K3.35

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| CEPA | : | Conservation and Environmental Protection Authority |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

Affected Persons (APs): Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership titles.

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BACKGROUND

The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the Government in implementing the National Health Plan 2011-2020 as it relates to rural health. The Project will be delivering six outputs as follows: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The Project is being implemented by National Department of Health (NDoH) and the Provincial Government administrations of the eight participating provinces.

The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

REQUIREMENTS AT PROPOSED CHP SITE

- 1) East Sepik Province (ESP) has a land mass of about 43 426 km². It has a total population of about 433480 (2011 Census) with a population density of 10.1 persons/square kilometer. The Province has 6 Districts, 26 Local Level Government (LLG) and 647 Wards. The Provincial Health Authority nominated Maprik and Wewak Districts for this CHP project.
- 2) Geographically, the Province consists of rugged Prince Alexander Mountains in the north, the Torricelli Mountains in the south and the coastal plains. The Sepik River flows from the west to the east of the Province from the Central range which borders with Enga Province in the south. The Sepik Highway and other major roads provide adequate access to the populated areas in the north while river transport is the most significant form of transport along the Sepik and other Rivers. The seasons are influenced by the changing monsoon winds.
- 3) The majority of the people earn relatively low cash income from the sale of garden food, small scale cocoa, fish or betel nut. Some moderate incomes can be earned around Yangoru and Drekikir area from selling rubber, cocoa and food but due to poor road access better income opportunities are limited.
- 4) Maprik District has 4 LLGs and 65 wards, the Albiges Mableb, Bumbuita Muhiang, Maprik Wora and Yamil Tamaul. The District has a total population of 71750 (2011 Census) of which 50.3 % male and 49.7 % female. The percentage of population less than 15 years at the time was 40.4% of the total population and 22.9% were women of child bearing age.
- 5) The population is served by the Provincial General Hospital, three District Hospitals, thirty seven (37) Health Centres and eighty seven (87) Aid Posts. There are 17 Medical Officers and 176 nursing Officers according to the

National Research Institute's March 2010 Report for East Sepik Health with regards to number and facility. The mortality rates per 1000 are as follows; infants under 1 year is 79, under 5 years is 115. The life expectancy for male is 51.3 and for females is 53.1.

- 6) There are 273 Elementary schools, 48 Community schools, 197 Primary schools, 11 provincial high schools, 4 secondary schools and 9 Vocational centers. The total literacy rate at 52.7% of which 59.7% are male and 46 % are female. The gross enrolment rate is 73.8% as per the NRI 2010 Report.
- 7) The Brigiti site for the proposed CHP has been selected by the East Sepik Provincial Health Authority based on its remote location and the catchment population that will utilize the CHP facility. This facility can also make referrals to the proposed new Maprik District Hospital which is less than half an hour's drive from Brigiti via an unsealed road in poor condition. The Boram General Hospital in Wewak is about four hours' drive from Maprik Health Centre.
- 8) The proposed CHP site at Brigiti is customary land. The local people have agreed to provide 0.88 hectares for the purpose of constructing the CHP which will be of benefit to them. There will be a new CHP facility and three staff houses as per the attached design plan in Appendix 5. The preliminary CHP design option has been submitted and accepted by the East Sepik Provincial Administration.
- 9) There will be some minor earth works required especially for storm water drainage, leveling and to provide the access road. Soil erosion control during these earth works is vital and the storm water drainage outlet must not interfere with the surrounding environment beyond the land survey boundary which belongs to the local community. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging.
- 10) New drinking water extraction is not envisaged at this point in time. Water will be sourced from rain water as the Project will be installing nine 5000L tanks to capture rain water as a prolonged wet season is experienced from December to April with lighter rain recorded all year round. There will be one tank per staff house. The water for drinking will come from the tanks at the CHP facility and water for ablutions and or showers and other domestic use will come from the generator and incinerator sheds. Power supply at this time would come from a 3.5 Kva Generator. The proposed CHP design plan is attached as per Appendix 6.
- 11) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.
- 12) All types of wastes including construction, kitchen and toilet wastes must be managed accordingly as per the EMP and CEMP.
- 13) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category No | Sub-category | Category of activity | Level 1 |
|-------------|----------------------|---|--|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

Legal and Policy Framework

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities .

The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EARF and the measures set out in this updated EMP.

Institutional Roles and Responsibilities

- 14)** The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's Safeguards Specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the Safeguards Specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an Environmental and Safety Officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the Provincial Safeguards Officer (SO) with support as required from the SS. The PSU and/or Province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the SS will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the project engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

15) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed CEMP that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to CEPA for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the SS advises the project civil engineer that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

i. Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been established for the Project and is set out in detail in the IEE. A Grievance Redress Committee (GRC) has been established at Provincial level to address any environmental complaints at the earliest stage. All records of the committee meetings and how grievances were addressed will be maintained by the

respective implementing agency, and the public will have access to these records. See Appendix 1 for an example of a grievance intake form.

Environmental Management Plan

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Brigiti site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the BCD.

- 16)** The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 17)** The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.

Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the PSU/NDOH on a monthly basis and to ADB semi-annually.

b. Requirements of the Construction Environmental Management Plan

- 18)** Based on the EMP included in the approved IEE and this Site specific EMP, at the onset of project implementation, model construction contracts will be prepared which incorporate the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's Safeguard Officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG: especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 19)** The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.

- 20)** The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 21)** Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Appendix 3 provides guidance on how to prepare a CEMP.

APPENDIX 1 - Grievance Intake Form (GRM)

CHP/Site Location:

Project ____ welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

Contact Information

| | | | |
|------------------|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |

Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below:

How do you want us to reach you for feedback or update on your comment/grievance?

Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

APPENDIX 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|---|--|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Identification of suitable land possessing titles on government or church-owned land Resettlement plan for sites planned for acquisition | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding. | Site designation above potentially flooded sites | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas and manage spoil dumps. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams Parking areas and workshops (if any) to have oil separators | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. Standard Absorption trenches to be installed. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible Agreements with resource owners in place Obtain permits as required Submit quarry management plan or gravel extraction plan to PSU | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area as in Appendix 7. Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material (top soil) to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas Minimize size/duration of cleared areas Undertake progressive re-vegetation | Construction contractor, PE, SS |
| Storage and | Secure storage, minimize | Store chemicals in secure area, with concrete floor | Construction |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|---|---|---------------------------------------|
| handling of construction materials, fuel, and lubricants | generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | and weatherproof roof Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. Waste water and sewage waste management. | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained No impacts on existing users (mini-hydro) | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits as required. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

APPENDIX 3 - Guidelines for Preparation of Construction Environmental Management Plan

Preparation

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU, or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

Content

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

- b. **Management Responsibilities**

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available

on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Conservation and Environment Protection Authority (CEPA) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. the backflow of water into the main spoon drain to the outlet from surrounding soils during wet seasons.
- b. need to locate an existing gravel source for backfill purposes which may require a permit depending on the requirement.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation
 - b. Leveling/ Backfilling and compaction
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses
 - b. CHP facility
 - c. Incinerator & Gen set house
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 1 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|-----------------|-------------|-----------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works this includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under EPAR, an environmental permit may be required. This will need to be obtained from CEPA. This section of the CEMP can be submitted to CEPA as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit or quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- type of construction of facilities (floor, walls, and roof);
- storm water drainage, collection systems, flow paths, and disposal areas;
- source of water and type of treatment required for cooking, washing, and drinking;
- effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- source of energy to be used for heating and cooking;
- confirm as "yes" or "no" if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- how long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 2 – Guide to Contractor’s Facilities to be used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a. |

c.g.i. = corrugated iron; n.a.= not applicable.

Environmental Protection Work Procedures

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required, the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

Monitoring of Work

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

Staff and Worker Training

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

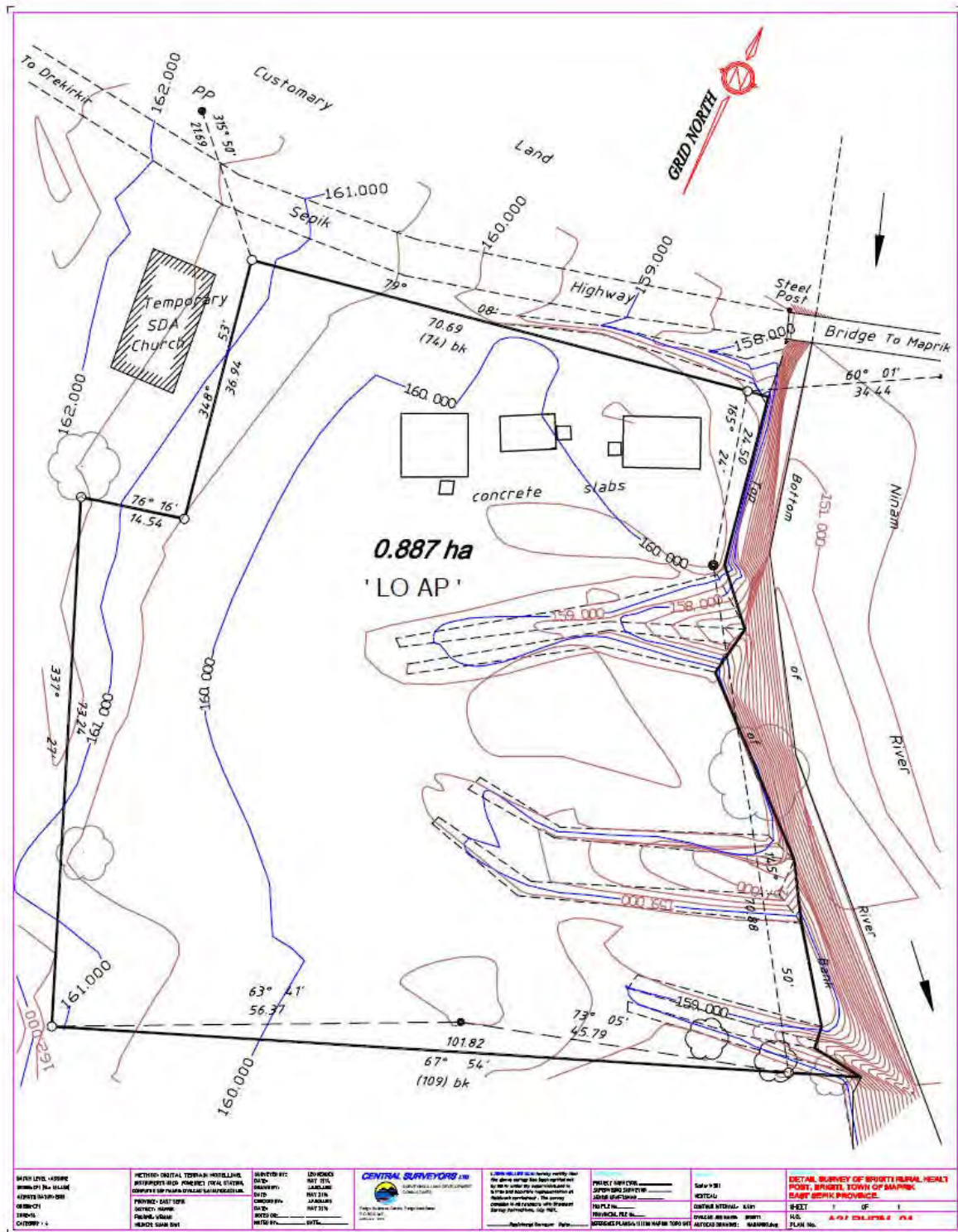
REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month
- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

APPENDIX 4: Brigiti CHP site survey plan



APPENDIX 5: Brigiti CHP Site plan



APPENDIX 6: Environmental permit approval from CEPA



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Environment Protection Wing

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Mr. Robert Akers – Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC:28-14-32
Action Officer: DI

Dear Mr. Akers,

**SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES
DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES**

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atotau (Milne Bay Province) premises (Buhuleta and Gurney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,

K. MICHAEL WAU
Deputy Secretary

Delegate of the Department of Environment & Conservation

NOTED
Please scan to
"A" Drive &
file hard copy
12/12/13

APPENDIX 7: Environment and Land Assessments



APPENDIX 8: Community Consultations for Land & Environment.



Environmental Management Plan

Kassi, Enga Province

24th October 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(16 April 2014)

Currency Unit - PNG Kina

K1.00 = \$0.329

\$1.00 = K3.29

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| DEC | : | Department of Environment & Conservation |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

Affected Persons (APs): Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership titles.

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KASSI, Enga Province1

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BACKGROUND

The government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the government in implementing the National Health Plan 2011-2020 as it relates to rural health. The project will be delivering six outputs as follows: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National department of Health (NDOH) and the local government administrations of the eight participating provinces.

The project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

CHP REQUIREMENTS AT KASSI PROPOSED CHP SITE

- 1) Wabag is the provincial capital of Enga. The province covers a land mass of 2 800 km². Most of the land in the province is at an altitude of over 2000 meters. Lower altitude areas are typically valleys which form the watershed for the two major river systems namely the Lagaip (a tributary of the Fly River) and the Lai (a tributary of the Sepik River) rivers. Enga has a total population of about 432 045 with a population density of 37/ km² (2011 Census). The five current districts of Enga are; Kandep, Kompam-Ambum, Lagaip-Porgera, Wapenamanda and Wabag. There are 15 Local level Government Councils and 334 ward councils. The two districts selected for the CHP upgrade or new buildings are Kompam-Ambum and Lagaip-Porgera.

Kassi has been selected as one proposed CHP site for a new CHP. Kassi is located in the upper Ambum area of Ambum local level government. Kassi is about 30 km away from the Ambum district head quarter. Kassi in Ambum LLG was selected on its centrality and genuine catchment population of 9 581 of which 4771 are of the ages 15-49, 86 are 0-11 months while 958 are of the ages 0-59 months. Though the road network is poor and geographically inaccessible, the 4 wheel drive cars often travel up and down from Kassi. This means access by road is not possible and easy during wet seasons.

The initial Aid Post in Kassi was established in early 1980's. This Aid Post has served about 7 council wards in which two primary schools also benefitted from this. The old Aid Post building still exists today. There

are also two staff houses still in good use. The Community in Kassi have been so careful of the health facility since its establishment over the years despite a few trouble fights in the area over other issues other than the land on which the Health facility has been built. The locals have voluntarily provided their customary land for the benefit of the Health service. The state has already completed the formal land acquisition process for this CHP site and would obtain a land title certificate form DLPP.

- 2) The Kassi land owners have donated 1.49 hectares of their customary land voluntarily for the much needed health service in return. The land boundary is partly created by the Kassi River at one end and slopes upwards towards the main road. The future chances of river bank erosion are not possible but there will be control measures to be put in place to minimize soil erosions and medical wastes dumped as there will be an incinerator installed for the wastes.
- 3) There are 28 existing Health Center facilities, one for every 10 537 population and 148 Aid Posts. There are 10 medical Officers, 104 nursing Officers, one for every 29 503 population as per the National Research Institute (March 2010) Report for Enga province as a whole with regards to population and health facility ratio.
- 4) The Kompam-Ambum economy is mostly agricultural and depends on cash crops such as coffee, food crops, live stock but cultivated areas are very prone to both drought and frost which can affect food security. Coffee is grown on small holder blocks and the dry beans exported. The wet season which sustains the agricultural activities is from December to early April with an average mean of 203 mm per month. The wet seasons may be transitional from time to time. The grassland dominates most lowland areas due to continuous gardening or burning activities. At high altitudes, the vegetation type is mountain rainforest dominated by beech forest and pandanus species.
- 5) The two nearest sub-health centers within the catchment area of KASSI are Londor and Anditale. Londor is 5 hours walk up the slopes but Anditale is about 4 hours of walk. There were 7 Health Centers per 6,333 population and 41 Aid Posts in Kompam-Ambum district. There was 1 medical officer per 44,332 population and 26 nursing officers in the district as per the National Research Institute March 2010 Report.
- 6) In the district itself, there were 46 Elementary schools, 15 Community schools, 15 Primary schools, 2 provincial high schools and 3 Vocational centers. The total literacy rate was 30.3% of which 35.1% are male and 24.9 % are female at the time of the report.
- 7) The preliminary CHP design option has been done and accepted by the Enga Provincial Health Authority. There will be some minor earth works required especially for the drainage, the leveling, compaction and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging and or any environment effects into the surrounding rivers. The soil erosion control during earth works is vital and the storm water drainage outlet must not interfere with the surrounding streams outside the land survey boundary.
- 8) New drinking water extraction may not be the best option at this point in time due to environmental permit limitations however, the water supply may need upgrading for the CHP facility as a backup water

supply for dry seasons. Otherwise water will be sourced from rain water as the project will be installing nine 5000L Tuffa (plastic) tanks to capture rain water as Kassi has a prolonged wet season from December to April all year round. There will be one tank per staff house. The water for drinking would come from the tanks at the CHP facility and water for ablutions and or showers and other domestic use will come from the generator and incinerator sheds. Power supply at this time would come from a 3 – 5 Kva Generator. The proposed CHP design plan is attached as per Appendix 5.

- 9) Water for Construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.
- 10) All types of wastes including construction, kitchen and toilet wastes must be managed accordingly as per the EMP and CEMP and will not be allowed to seep into nearby water ways.
- 11) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category No | Sub-category | Category of activity | Level 1 |
|-------------|----------------------|---|---|
| | | | |
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

i. Legal and policy framework

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities .

The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EARF and the measures set out in this updated EMP.

ii. Institutional Roles and Responsibilities

12) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU’s project manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU’s safeguards specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial

- safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the project engineer.
 - (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

13) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed CEMP that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the safeguards specialist who will approve it and forward a copy to DEC for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the safeguards specialist advises the project civil engineer that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

iii. Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been established for the project and is set out in detail in the IEE. A Grievance Redress Committee (GRC) has been established within the Provincial level to address any environmental complaints at the earliest stage. All records of the committee meetings and how grievances were addressed will be maintained by the respective implementing agency, and the public will have access to these records. See Appendix 1 for an example of a grievance intake form.

IV Environmental Management Plan

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Kassi site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the BCD.

- 14) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and

(ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.

- 15) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 16) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the PSU/NDOH *on a monthly basis and to ADB semi-annually*.

b. Requirements of the Construction Environmental Management Plan

- 17) Based on the EMP included in the approved IEE and this Site specific EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.
- 18) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 19) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 20) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Appendix 3 provides guidance on how to prepare a CEMP.

APPENDIX 1 - Grievance Intake Form (GRM)

CHP/Site Location:

Project ____ welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| | | | |
|--|--|-----------|--|
| Contact Information | | | |
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |
| Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: | | | |
| How do you want us to reach you for feedback or update on your comment/grievance? | | | |

Portion to be filled in by the staff:

| | |
|--|---|
| Date received: | |
| Received through: | __ In person __ mail __ email __ fax __ phone __ sms |
| Name of staff who received comment/complaint | |

| | |
|--------------------|--|
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

APPENDIX 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|---|---|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. | Identification of suitable land possessing titles on government or church-owned land. Resettlement plan for sites planned for acquisition. | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding and or land slips | Site designation should be above potentially flooded areas and away from land slip areas. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas and manage spoil dumps. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge or seep into surface water streams. Parking areas and workshops (if any) to have oil separators | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. Standard Absorption trenches to be installed. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible Agreements with resource owners in place Obtain permits as required Submit quarry management plan or gravel extraction plan to PSU | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material (top soil) to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas Minimize size/duration of cleared areas Undertake progressive re-vegetation | Construction contractor, PE, SS |
| Storage and handling of | Secure storage, minimize generation of potential | Store chemicals in secure area, with concrete floor and weatherproof roof | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|---|---|---------------------------------------|
| construction materials, fuel, and lubricants | water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 10 m from waterways. Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill. All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to only daylight hours Noise not to exceed 45 dBA at boundary of workplace. | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures. | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. Waste water and sewage waste management. | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained No impacts on existing users (mini-hydro) | Construction contractor, PE, SS, NDOH |
| Archaeological | Prevention of the loss of | Chance discoveries are to be notified to SS. Avoid | Construction |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| discoveries | cultural values | 2 cemeteries far north of surveyed area. | contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits as required. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

APPENDIX 3 - Guidelines for Preparation of Construction Environmental Management Plan

Preparation

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.

4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU, or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.

5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.

6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

Content

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

a. Introduction and Purpose

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement

- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and/ or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (DEC) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be a few minor environmental concerns;

- a. The nearby river is protected from soils, rubbish and waste water discharge or leached.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
 - a. Camping, messing, drinking water, toilets and bath rooms, offices etc.
- ii. Earth works
 - a. Top soil Excavation (profiling)
 - b. Leveling/ Backfilling / compaction and landscaping
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses
 - b. CHP facility
 - c. Incinerator & Gen set houses

- d. Fencing
- iv. Plumbing works
 - a. Clean water tank and piping and taps
 - b. Waste water pipes and toilet /shower
 - c. Install septic tanks and absorption trenches
- v. Electrical wiring and Gen set
 - a. Lighting
 - b. Equipment
 - c. Power points
- vi. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Demobilize Clean up and

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following;

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 2 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|-----------------|-------------|-----------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works this includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under EPAR, an environmental permit may be required. This will need to be obtained from DEC. This section of the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit or quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- type of construction of facilities (floor, walls, and roof);
- storm water drainage, collection systems, flow paths, and disposal areas;
- source of water and type of treatment required for cooking, washing, and drinking;
- effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- source of energy to be used for heating and cooking;
- confirm as "yes" or "no" if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- how long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 3 – Guide to Contractor's Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|--|-------------------------------------|----------------------------|--------|--------|--|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin > natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin > natural drainage system | n.a. |
| 4 | Storage area – | 400 m ² | Coral | c.g.i. | c.g.i. | Sediment basin > natural drainage | n.a. |

| | | | | | | | |
|---|---|----------------------------------|----------------------|--|--|---|-----|
| | materials | (40 m x 10 m) | aggregate | | | system | |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a |

c.g.i. = corrugated iron; n.a.= not applicable.

Environmental Protection Work Procedures

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required; the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use and storage of hazardous materials.
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

Monitoring of Work

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

Staff and worker Training

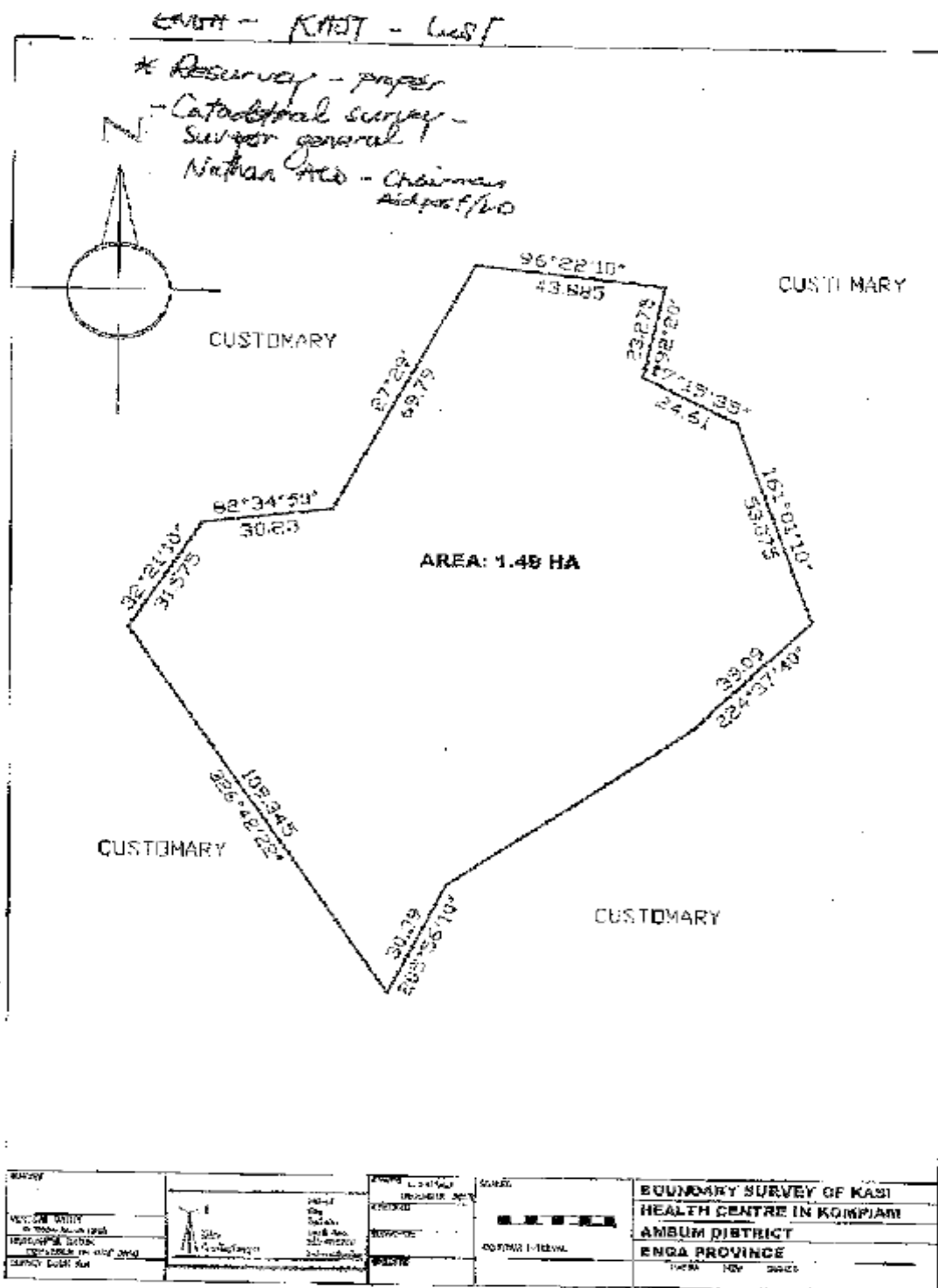
12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month
- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

APPENDIX 4: KASSI CHP SITE SURVEY MAP.





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Environment Protection Wing

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Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENFC-28-14-32
Action Officer: DI

Dear Mr. Akers,

**SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES
DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES**

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atotau (Milne Bay Province) premises (Bubuleta and Gurney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.


Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,


K. MICHAEL WAU
Deputy Secretary

Delegate of the Department of Environment & Conservation

NOTED
Please scan to
'P' drive &
file hard copy


APPENDIX 5: KASSI CHP SITE PICTURES.

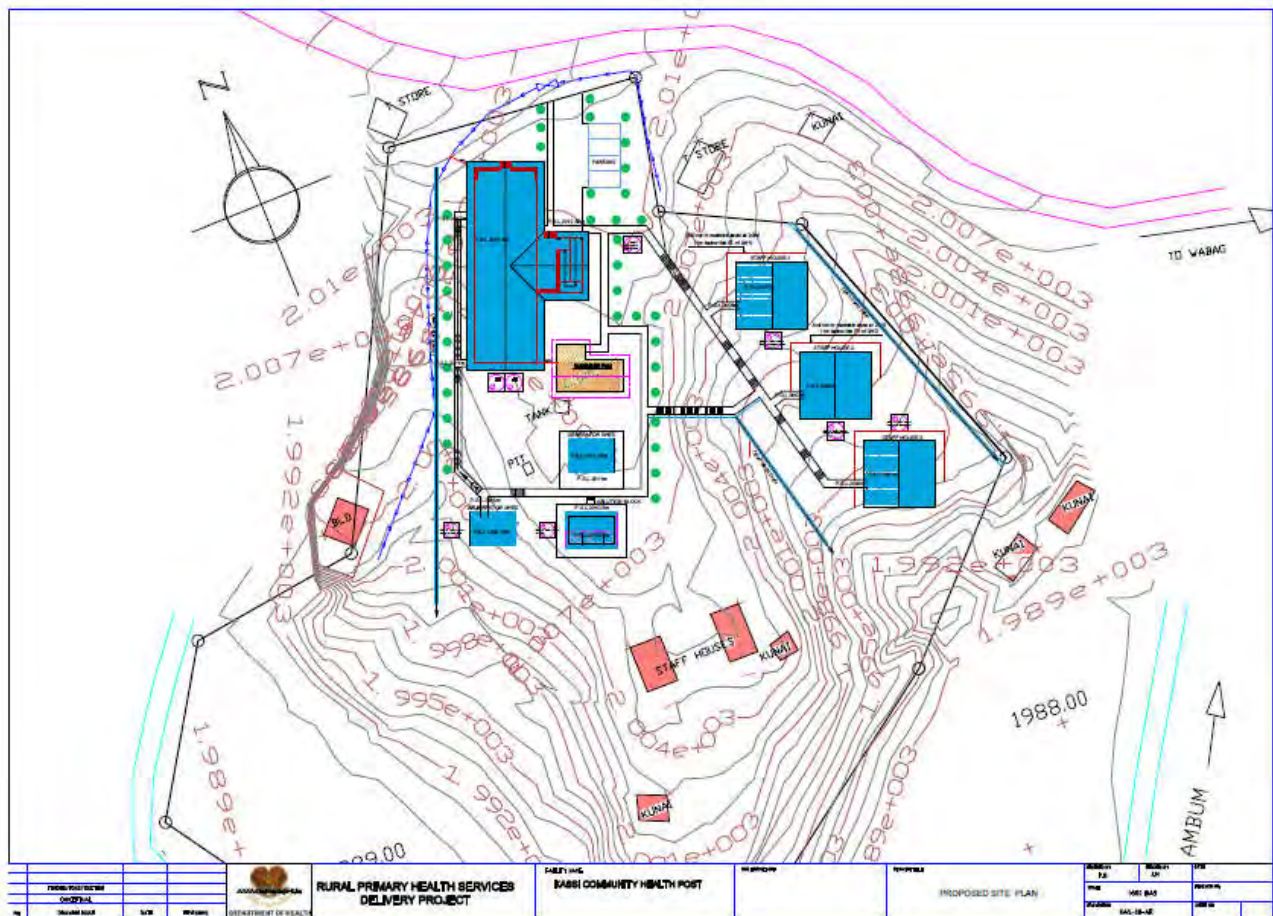
Existing CHP at Kassi



Community Consultations/ meeting(FPIC) on Land & Environment with Safeguards & DLPP Officers.



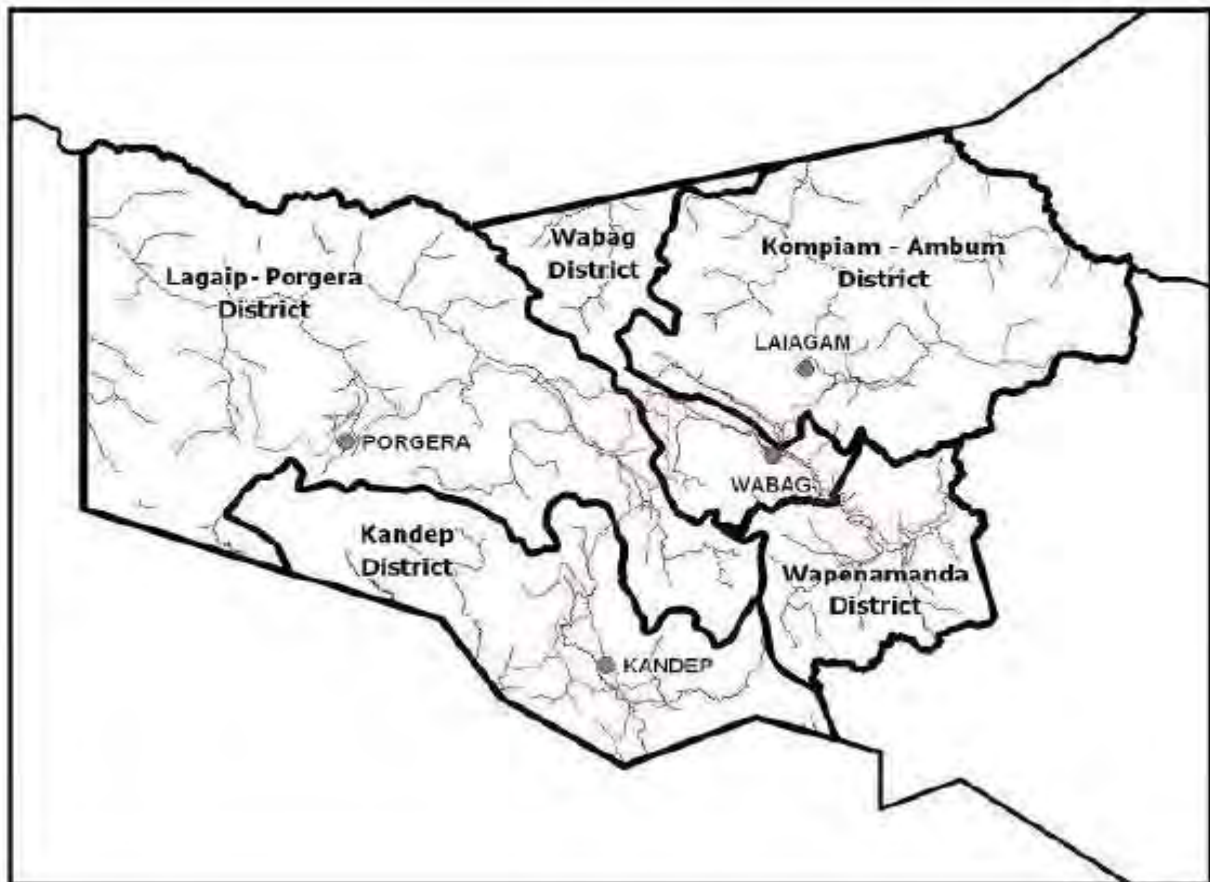
Appendix 6: Kassi Site Plan



APPENDIX 7: ENGA PROVINCIAL CAPITAL MAP



Enga Province



Environmental Management Plan

Naramko, East Sepik Province

October 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(16 April 2014)

Currency Unit - PNG Kina

K1.00 = \$0.329

\$1.00 = K3.29

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|---|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| CEPA | : | Conservation and Environment Protection Authority |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

Affected Persons (APs): Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership titles.

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BACKGROUND

The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the majority rural population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the Government in implementing the National Health Plan 2011-2020 as it relates to rural health. The Project will be delivering six outputs as follows: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National department of Health (NDOH) and the local government administrations of the eight participating provinces.

The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

REQUIREMENTS AT PROPOSED CHP SITE

- 1) East Sepik Province (ESP) has a land mass of about 43 426 km². It has a total population of about 433480 (2011 Census) with a population density of 10.1 persons/square kilometer. The Province has 6 Districts, 26 Local Level Government (LLG) and 647 Wards. The Provincial Health Authority nominated Maprik and Wewak Districts for this CHP project.
- 2) Geographically, the Province consists of rugged Prince Alexander Mountains in the north, the Torricelli Mountains in the south and the coastal plains. The Sepik River flows from the west to the east of the Province from the Central range which borders with Enga Province in the south. The Sepik Highway and other major roads provide adequate access to the populated areas in the north while river transport is most significant along the Sepik and other Rivers. The wet seasons may be transitional from time to time as influenced by the common changing monsoon winds.
- 3) The majority of the people earn relatively low cash income from the sale of garden food, small scale cocoa, fish or betel nut. Some moderate incomes can be earned around Yangoru and Dreikir area from selling rubber, cocoa and food but due to poor road access better income opportunities are limited.
- 4) Maprik District has 4 LLGs and 65 wards, the Albiges Mableb, Bumbuita Muhiang, Maprik Wora and Yamil Tamaul. The District has a total population of 71750 (2011 Census) of which 50.3 % male and 49.7 % female. The percentage of population less than 15 years at the time was 40.4% of the total population and 22.9% were women of child bearing age.

- 5) The population is served by the Provincial General Hospital, three District Hospitals, thirty seven (37) Health Centres and eighty seven (87) Aid Posts. There are 17 Medical Officers and 176 nursing Officers according to the National Research Institute's March 2010 Report for East Sepik Health with regards to number and facility. The mortality rates per 1000 are as follows; infants under 1 year is 79, under 5 years is 115. The life expectancy for male is 51.3 and for females is 53.1.
- 6) There are 273 Elementary schools, 48 Community schools, 197 Primary schools, 11 provincial high schools, 4 secondary schools and 9 Vocational centers. The total literacy rate at 52.7% of which 59.7% are male and 46 % are female. The gross enrolment rate is 73.8% as per the NRI 2010 Report.
- 7) The Naramko proposed CHP site has been selected by the East Sepik Provincial Health Authority based on the remote location and the catchment population that will utilize the CHP facility. This facility can also make referrals to the proposed new Maprik District Hospital which is less than half an hour's drive from Naramko by a deteriorated road. The Wewak District Hospital is about four hours' drive from Maprik Health Centre.
- 8) This proposed CHP site at Naramko is on a customary land. The locals have agreed to provide the 0.79 hectares for the purpose of the CHP which will be of benefit to them. There will be construction of a new CHP facility and three staff houses as per the attached design plan in appendix 5. The preliminary CHP design options has been done and accepted by the East Sepik Provincial Health Authority and Building Board.
- 9) There will be some minor earth works required especially for the drainage, the leveling and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging. The soil erosion control during earth works is vital and the storm water drainage outlet must not interfere with the surrounding environment outside the land survey boundary which belongs to the local community.
- 10) New drinking water extraction may not be required at this point in time. Water will be sourced from rain water as the Project will be installing nine 5000L tanks to capture rain water as Naramko has a prolonged wet season from CEPAember to April and lighter rain all year round. There will be one tank per staff house. The water for drinking would come from the tanks at the CHP facility and water for ablutions and or showers and other domestic use will come from the generator and incinerator sheds. Power supply at this time would come from a 3 – 5 Kva Generator. The proposed CHP design plan is attached as per Appendix 6.
- 11) Water for construction works and construction workers camp use for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from agreed /permitted source.
- 12) All types of wastes including construction, kitchen and toilet wastes must be managed accordingly as per the EMP and CEMP.
- 13) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category No | Sub-category | Category of activity | Level 1 |
|-------------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

i. Legal and policy framework

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities .

The implementation of the project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project’s EARF and the measures set out in this updated EMP.

ii. Institutional Roles and Responsibilities

14) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's Safeguards Specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the Safeguards Specialist advises the Project Architect that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the Provincial Safeguards Officer (SO) with support as required from the SS. The PSU and/or Province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the Safeguards Specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the project engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

15) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed CEMP that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the Safeguards Specialist who will approve it and forward a copy to Conservation and Environmental Protection Authority for their information.
- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the safeguards specialist advises the project civil engineer that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

iii. Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been established for the project and is set out in detail in the IEE. A Grievance Redress Committee (GRC) has been established within the Provincial level to address any environmental complaints at the earliest stage. All records of the committee meetings and how grievances were addressed will be maintained by the respective implementing agency, and the public will have access to these records. See Appendix 1 for an example of a grievance intake form.

IV Environmental Management Plan

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Naramko site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the BCD.

- 16) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 17) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 18) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the PSU/NDOH *on a monthly basis and to ADB semi-annually.*

b. Requirements of the Construction Environmental Management Plan

- 19) Based on the EMP included in the approved IEE and this Site specific EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on detailed design, are incorporated within the BCD of each subproject (site). The IA's safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU's PE and SS.

- 20) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 21) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 22) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Appendix 3 provides guidance on how to prepare a CEMP.

APPENDIX 1 - Grievance Intake Form (GRM)

CHP/Site Location:

Project ____ welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

Contact Information

| | | | |
|------------------|--|-----------|--|
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |

Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below:

How do you want us to reach you for feedback or update on your comment/grievance?

Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

APPENDIX 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|---|---|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. Project certainty | Identification of suitable land possessing titles on government or church-owned land Resettlement plan for sites planned for acquisition | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding. | Site designation above potentially flooded sites | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas and manage spoil dumps. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge to surface water streams Parking areas and workshops (if any) to have oil separators | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. Standard Absorption trenches to be installed. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible Agreements with resource owners in place Obtain permits as required Submit quarry management plan or gravel extraction plan to PSU | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Minimize excavation area as in Appendix 7. Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material (top soil) to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas Minimize size/duration of cleared areas Undertake progressive re-vegetation | Construction contractor, PE, SS |
| Storage and | Secure storage, minimize | Store chemicals in secure area, with concrete floor | Construction |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|---|---|---------------------------------------|
| handling of construction materials, fuel, and lubricants | generation of potential water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | and weatherproof roof Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | contractor, PE, SS |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. Waste water and sewage waste management. | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained No impacts on existing users (mini-hydro) | Construction contractor, PE, SS, NDOH |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|--|
| Archaeological discoveries | Prevention of the loss of cultural values | Chance discoveries are to be notified to SS | Construction contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits as required. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

APPENDIX 3 - Guidelines for Preparation of Construction Environmental Management Plan

Preparation

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the Project Support Unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.
4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU, or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.
5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.
6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

Content

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

- a. **Introduction and Purpose**

- Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement
- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines

d. Licenses and Permits

There is no need for Environmental Licenses and or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (CEPA) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be two environmental concerns;

- a. the backflow of water into the main spoon drain to the outlet from surrounding soils during wet seasons.
- b. need to locate an existing gravel source for backfill purposes which may require a permit depending on the requirement.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
- ii. Earth works
 - a. Top soil Excavation
 - b. Leveling/ Backfilling and compaction
 - c. Drainages (including storm water, sewer & water supply) and Excess road
- iii. Building Construction
 - a. Building 3 staff L63 houses
 - b. CHP facility
 - c. Incinerator & Gen set house
- iv. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Clean up

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following:

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and
- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 1 - Example of Table for Machinery that will be brought to Site

| Make and Type | Age (years) | Condition |
|-----------------|-------------|-----------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works this includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under EPAR, an environmental permit may be required. This will need to be obtained from CEPA. This section of the CEMP can be submitted to CEPA as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; *(no need for quarry due to Environmental permit limitations)*
- requirement for any permits or approvals to open the borrow pit or quarry;
- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- type of construction of facilities (floor, walls, and roof);
- storm water drainage, collection systems, flow paths, and disposal areas;
- source of water and type of treatment required for cooking, washing, and drinking;
- effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- source of energy to be used for heating and cooking;
- confirm as “yes” or “no” if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- how long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 2 – Guide to Contractor’s Facilities to be used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|---|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin> natural drainage system | Closed septic system |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a |

c.g.i. = corrugated iron; n.a.= not applicable.

Environmental Protection Work Procedures

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider

that a procedure that is shown in the project EMP is not required, the contractor will need to justify that CEPAision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use of hazardous materials
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)
- Archaeological discoveries
- Rehabilitation of construction sites and contractor facilities

Monitoring of Work

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

Staff AND Worker Training

12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

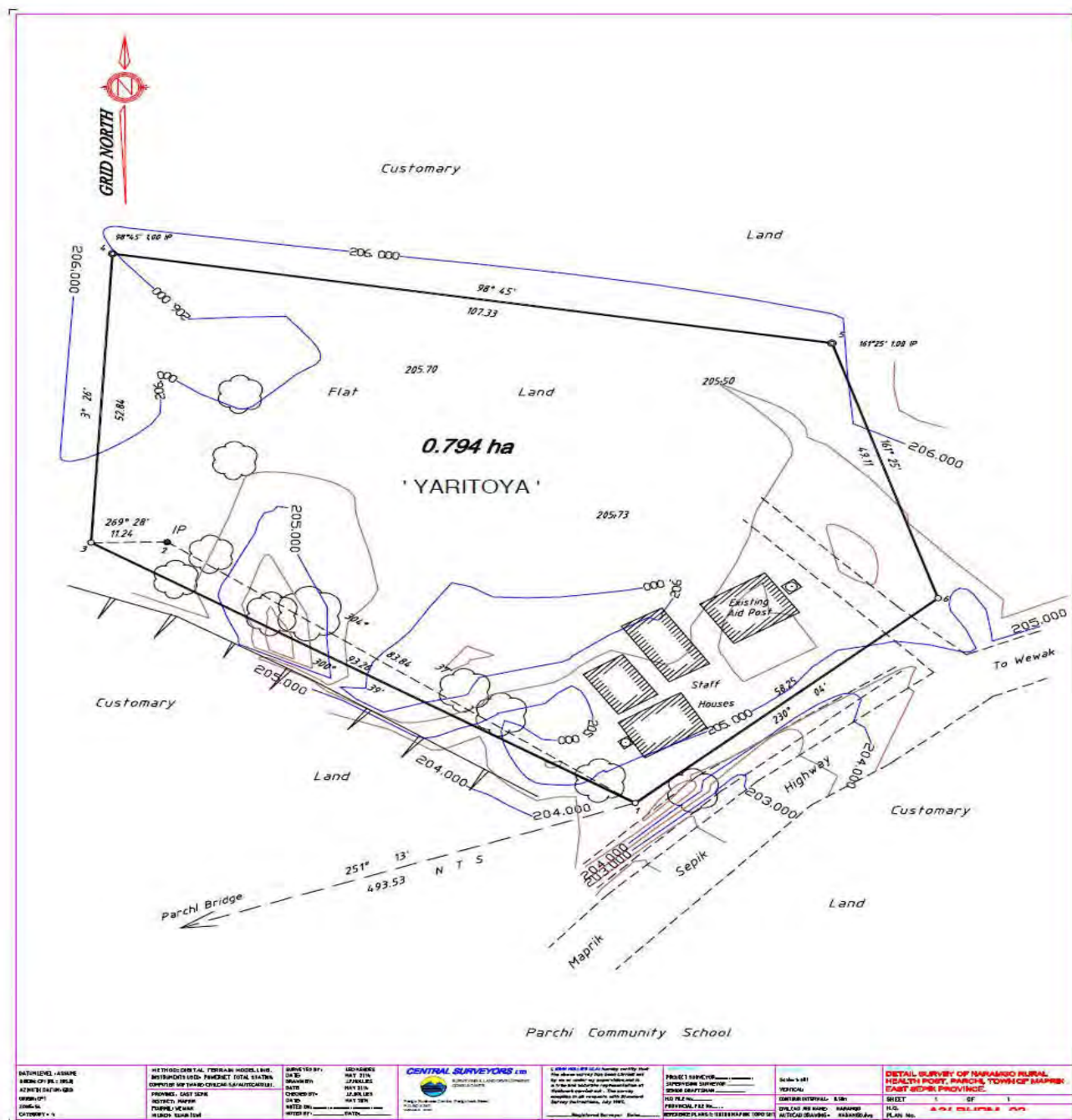
REPORTING

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month
- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

APPENDIX 4: Naramko CHP site survey plan



APPENDIX 5: Naramko CHP Site plan



APPENDIX 6: Environmental permit approval from CEPA



DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Environment Protection Wing

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Mr. Robert Akers – Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC:28-14-32
Action Officer: DI

Dear Mr. Akers,

**SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES
DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES**

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atotau (Milne Bay Province) premises (Buhuleta and Gurney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.

Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours Sincerely,

K. MICHAEL WAU
Deputy Secretary

Delegate of the Department of Environment & Conservation

NOTED
Please scan to
"A" drive &
file hard copy
12/12/13

APPENDIX 7: Environment and Land Assessments



APPENDIX 8: Community Consultations for Land & Environment.



Environmental Management Plan

Porea, Enga Province

10th October, 2015

RURAL PRIMARY HEALTH SERVICE DELIVERY PROJECT

Papua New Guinea



Prepared by the National Department of Health, Government of Papua New Guinea for the Asian Development Bank.

CURRENCY EQUIVALENTS

(16 April 2014)

Currency Unit - PNG Kina

K1.00 = \$0.329

\$1.00 = K3.29

ACRONYMS AND ABBREVIATIONS

| | | |
|--------|---|--|
| PNG | : | Papua New Guinea |
| GoPNG: | | Government of PNG |
| ADB | : | Asian Development Bank |
| NDOH | : | National Department of Health |
| PSU | : | Project Support Unit |
| CHP | : | Community Health Post |
| NGO | : | Non Government Organization |
| DEC | : | Department of Environment & Conservation |
| EPAR | : | Environment Prescribed Activities Regulation |
| IEE | : | Initial Environment Examination |
| EARF | : | Environment Assessment Review Framework |
| EMP | : | Environment Management Plan |
| CEMP | : | Contractor Environment Management Plan |
| BCD | : | Bid & Contract Document |
| SS | : | Safeguards Specialist |
| PE | : | Project Environment |
| SO | : | Safeguards Officer |
| ESO | : | Environment & Safety Officer |

GLOSSARY

Affected Persons (APs): Are people who stand to lose as a consequence of a project, all or part of their physical or non-physical assets irrespective of legal or ownership titles.

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| Staff and worker Training..... | 20 |

BACKGROUND

The Government of Papua New Guinea (PNG) with assistance from Asian Development Bank (ADB) is implementing the Rural Primary Health Services Delivery Project. The Project objective is to increase the coverage and quality of primary health care services for the rural majority population in partnership with state and non-state health service providers (private sector, churches, nongovernment organizations [NGOs], and civil society). It will support the Government in implementing the National Health Plan 2011-2020 as it relates to rural health. The Project will be delivering six outputs as follows: (i) national policies and standards for community health posts (CHPs); (ii) sustainable partnerships between provincial governments and non-state actors; (iii) human resource development in the health sector; (iv) community health facility upgrading; (v) health promotion in local communities; and (vi) project monitoring, evaluation and management. The project is being implemented by National department of Health (NDOH) and the local government administrations of the eight participating provinces.

The Project's Environmental Assessment and Review Framework (EARF) provides detail on the process to be adopted during implementation to ensure that environmental management objectives and principles set out in PNG's Environment Act 2000 and ADB's Safeguard Policy Statement (2009) are complied with. The Project's Initial Environment Examination (IEE) was carried out to generally identify the impacts of activities during construction and operation of CHPs and included a generic but comprehensive environmental management plan (EMP) covering expected works. The IEE concluded that the works are small-scale and impacts will be site-specific and can be managed and/or mitigated adequately. The EARF requires that based on the site-specific design for a CHP, access requirements, water and power supply needs and waste management and treatment needs, the EMP will be updated and integrated into the bid and contract documents (BCD).

CHP REQUIREMENTS AT TUKUSANDA PROPOSED CHP SITE

- 1) Wabag is the provincial capital of Enga. The Province covers a land mass of 2 800 km². Most of the land in the Province is at an altitude of over 2000 meters. Lower altitude areas are typically valleys which form the watershed for the two major river systems, namely the Lagaip (a tributary of the Fly River) and the Lai (a tributary of the Sepik River) Rivers. Enga has a total population of 432 045 with a population density of 37/ km² (2011 Census). The five Districts of Enga are; Kandep, Kompam-Ambum, Lagaip-Porgera, Wapenamanda and Wabag. There are 15 Local Level Government Councils and 334 Ward councils. The two districts selected for the CHP upgrade or new buildings are Kompam-Ambum and Lagaip-Porgera.
- 2) Lagaip-Porgera covers the Lagaip Valley and a large area in the north west of Enga Province. There are 28 Health Centre facilities, one for every 10 537 population and 148 Aid Posts. Lagaip –Porgera has a total land area of 4 608 km² with a population density of 19.7 per km². This means the land area now occupied is 1081 km².
- 3) There are 10 medical Officers, 104 nursing Officers, one for every 29 503 population as per the National Research Institute (March 2010) Report for Enga Province as a whole with regards to population and health facility ratio. A road links Porgera with Wabag and the Highlands Highway, however people in the lower Lagaip Valley are very remote and require more than a day's travel to get to a service centre.
- 4) Porea has been selected as one proposed CHP site for the construction of a Community Health Post. Porea is located in the Surinki Valley of the Lagaip area under the Lagaip Local Level Government. It is about 50 kms away by road from the Wabag town. The current road condition is good in all weather conditions with the ongoing road maintenance assistance from the (Tax Credit Scheme of) Porgera Gold Mining Company which is a further 20 km south west of Porea. Porea was selected on its centrality in the district and with genuine catchment population of

6181 to serve. Of this total population, 1 040 are over 40 years old, 1 825 are females of the ages 14-45 years, 488 are children of ages 1-5 years while 977 are Children of the ages 0-1 years as reported in the NRI report of 2010. The initial Aid Post in Porea was established in the early 1980's with two staff houses built in the early 2000s. Though the building has been well taken care of by the people during tribal conflicts, the building itself is about 20 years old and has had no maintenances since established. This Aid Post has served 8 Ward council within the catchment area in which 3 elementary schools, 1 primary school and 1 Top up Primary school also benefitted from this. The Community Health Worker lives in one of the permanent buildings.

- 5) The Porea land owners have donated 3.10 hectares of their customary land (existing site) voluntarily for the much needed health service in return. The land is not a perfect flat land but will require minor earth works within the existing CHP site set-up. The land has been surveyed and pending the formal land investigation (LIR) and valuation as required for formal customary land acquisition process required by the PNG Department of Lands and Physical Planning. The survey plan is attached in Appendix 4. The initial community consultations on land use have been done as an open forum with the land owners as pictured in Appendix # 6.
- 6) The Lagaip-Porgera economy is mostly agricultural and depends on cash crops such as coffee, food crops, live stock but cultivated areas are very prone to both drought and frost which can affect food security. Coffee is grown on small holder blocks and the dry beans exported, however incomes are very low. The communities near the mine site and impact zones only benefit from the wages and royalties. The wet season which sustains the agricultural activities is from December to early April with an average mean of 203 mm per month. The wet seasons may be transitional from time to time. The grassland dominates most lowland areas due to continuous gardening or burning activities. At high altitudes, the vegetation type is mountain rainforest dominated by beech forest and pandanus.
- 7) There were 6 Health Centers per 15 167 population and 38 Aid Posts per 2 935 in Lagaip-Porgera District. There were 4 medical officers, one per 22 751 population and 27 nursing officers in the district as per the National Research Institute March 2010 Report.
- 8) In the district itself, there were 86 Elementary schools, 17 Community schools, 21 Primary schools, 3 provincial high schools and 3 Vocational centers. The total literacy rate was at 28% of which 33.1% are male and 22.4 % are female at the time of the report in 2010.
- 9) The preliminary CHP design option has been done and accepted by the Enga Provincial Health Authority. There will be some minor earth works required especially for the drainage, the leveling, compaction and the access road. The septic tank system and its absorption trench will be constructed as planned to maintain a stable building foundation and reduce water logging and or any environment effects into the surrounding rivers. The soil erosion control during earth works is vital and the storm water drainage outlet must not interfere with the surrounding streams outside the land survey boundary.
- 10) New drinking water extraction may not be the best option at this point in time due to environmental permit limitations however, water supply is needed for the CHP facility as a backup water supply during dry seasons. Otherwise water will be sourced from rain water as the Project will be installing nine 5000L tuffa (plastic) tanks to capture rain water as Porea has a prolonged wet season from December to April all year round. There will be one tank per staff house. The water for drinking would come from the tanks at the CHP facility and water for ablutions and or showers and other domestic use will come from the generator and incinerator sheds. Power supply at this time would come from a 3 – 5 Kva Generator. Water for construction works and construction workers camp use

for messing, laundry and toilet/showers has to be delivered to site storage tanks for use from an agreed /permitted source.

- 11) All types of wastes including construction, kitchen and toilet wastes must be managed accordingly as per the EMP and CEMP and will not be allowed to seep into nearby water ways.
- 12) As stipulated in Environment Act 2000 Section 42 and Environment (Prescribed Activities) Regulation (EPAR), environmental permits are required for level 2 and level 3 prescribed activities. Most of the project activities for this CHP are defined as level 1 under EPAR of the Environment Prescribed Activities. Where necessary, the environmental guidelines and code of practices will be incorporated into the site specific Environmental Management Plan (EMP).

Table 1: EPAR Relevant to Level 1 Activities.

| Category No | Sub-category | Category of activity | Level 1 |
|-------------|----------------------|---|---|
| 11.2 | 11: Waste Treatment | Septic tank sludge disposal system intended to serve an equivalent population of | Less than 500 |
| 11.4 | | Incineration and disposal of biomedical waste | Less than 10 tonnes per year |
| 12.7 | 12:Infrastructure | Construction of housing estates | Less than 5 ha |
| 13.2 | 13: Other activities | Discharge of waste into water or onto land resulting in the waste entering water ways | Septic tanks for Sewage waste Incineration and burial for medical wastes less than 10 tonnes per year. |
| 13.3 | | Abstract or use of water for commercial purposes | Water used construction purpose not greater than 1000 Liters per day for 6 months. |

LEGAL FRAMEWORK AND INSTITUTIONAL ARRANGEMENTS

i. Legal and policy framework

The Environment Act 2000, (Prescribed Activities) Regulations (EPAR) 2002 categorizes projects as “Prescribed Activities” in two schedules according to the anticipated potential environmental impact or level of investment. Level 1 activities are not scheduled and do not require permits. Level 2A activities require an environmental permit but do not require environmental assessment. The refurbishment of existing and construction of small health facilities are not defined in the EPAR as either Level 2B or Level 3 activities – hence from the perspective of the environmental legislation, there is no need for submission of environmental assessments under the government’s environmental assessment framework. As noted above some works associated with the CHP construction and operation will be Level 2A activities and permits

for wastewater discharge, water extraction, and air discharge will be required if and where necessary otherwise these EPAR activities are all confirmed Level 1 Activities .

The implementation of the Project will also need to comply with and fulfill the environmental safeguards requirements of ADB. The SPS sets out the policies and principles for the protection of the environment and communities. This will be achieved through the identification of the impacts and the establishment of appropriate mitigating measures to minimize, or if at all possible, eliminate the adverse impacts of the development and/or provide compensation for impacts that cannot be avoided, as established by the process and procedures included in the project's EARF and the measures set out in this updated EMP.

ii. Institutional Roles and Responsibilities

13) The NDOH, with assistance from the Project Support Unit (PSU), has overall responsibility for implementing the EMP. The main environmental management activities include:

- (i) The PSU's Project Manager will be responsible for ensuring that the environmental safeguards are implemented so as to meet their intended requirements. This includes ensuring that the construction section and tendering conditions for the EMP are integrated into the bid and contract documents (BCD).
- (ii) During pre-construction, the PSU's Safeguards Specialist (SS) will revise the EMP as required and extract the construction section from the EMP so that these may be attached to the BCD.
- (iii) The SS will work with and train contractors to assist them in proactively understanding their contractual requirements including the various requirements of the preparation, submission and implementation of the construction EMP (CEMP).
- (iv) Prior to construction commencing, the SS will also evaluate and approve the CEMP that will be prepared by the contractor as a condition of the contract. Following approval of the CEMP the safeguards specialist will arrange to induct the contractor to the construction site whereby details of the CEMP are confirmed with the contractor. When the SS considers that the contractor is competent to undertake compliance with the CEMP the safeguards specialist advises the project civil engineer that the contractor may now commence work.
- (v) The contractor will be required to designate an environmental and safety officer (ESO). The ESO will undertake day-to-day supervision of the CEMP, the overall site supervision responsibilities for ensuring that the contractor is meeting the CEMP requirements will be with the provincial safeguards officer (SO) with support as required from the SS. The PSU and/or province may also appoint an engineer to assist with construction supervision and CEMP implementation.
- (vi) During operation, the safeguards specialist will also undertake regular monitoring as required by the EMP. The SS may issue defect notices concerning non-compliant work which are channeled to the contractor via the project engineer.
- (vii) The PSU will prepare and submit monitoring reports and safeguards reports to NDOH and ADB as specified in the IEE and EARF.

14) The contractor's responsibilities include:

- (i) Prior to construction commencing, the contractor will address the construction section of the EMP which has been attached to the bid and contract documents and develop this into a detailed CEMP that amplifies the conditions established in the EMP. The CEMP also identifies persons who will be responsible for undertaking the work within the contractor's team. It will include a basic monitoring plan and a reporting program.
- (ii) The CEMP will be submitted to the safeguards specialist who will approve it and forward a copy to DEC for their information.

- (iii) Following approval of the CEMP, the contractor is required to attend a site induction meeting where the CEMP is further discussed directly with the contractor to ensure that all compliance conditions are understood.
- (iv) Following this, the safeguards specialist advises the project civil engineer that the contractor is now cleared to commence work.
- (v) The contractor will prepare a monthly report that will include compliance with CEMP to be submitted to the PSU. The report will also contain the monthly accident report.

iii. Grievance Redress Mechanism

A Grievance Redress Mechanism (GRM) has been established for the project and is set out in detail in the IEE. A Grievance Redress Committee (GRC) has been established within the Provincial level to address any environmental complaints at the earliest stage. All records of the committee meetings and how grievances were addressed will be maintained by the respective implementing agency, and the public will have access to these records. See Appendix 1 for an example of a grievance intake form.

IV Environmental Management Plan

a. Environmental Management Plan and Monitoring

Appendix 2 contains the EMP table updated for the Porea site based on (i) the CHP standard design prepared by NDOH, revised as required; (ii) the need for site access; and (iii) provision of renewable energy and water supply to the CHP. This EMP will be incorporated, along with all other relevant safeguards provisions, in the BCD.

- 15) The EMP table includes the requirements for monitoring. An integral part of environmental protection is ensuring compliance with the approved CEMP and periodic monitoring of the condition of the immediate environment to ensure corrective actions required are implemented as quickly as possible and to determine any occurrence of undesirable changes as a result of the project during construction and operation phases. The monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.
- 16) The PSU will have overall responsibility for the management, monitoring and reporting for the implementation of the EMPs for the project. The provincial based SO will receive training and capacity building from the SS and PE. The SOs will be responsible for liaising with the contractor and providing training, advice and assistance in the preparation of the CEMP and its implementation as well as assisting in monitoring and reporting on implementation.
- 17) Monitoring will relate to compliance with construction contracts (including EMP measures and provisions), the state and health of the nearby environmental resources, and the effectiveness of mitigation measures and complaints. Monthly progress reporting will include a summary of the environmental monitoring report submitted to the PSU/NDOH on a monthly basis and to ADB semi-annually.

b. Requirements of the Construction Environmental Management Plan

- 18) Based on the EMP included in the approved IEE and this Site specific EMP, at the onset of project implementation, model construction contracts will be prepared which incorporates the general environmental safeguards and practices required for CHP development. These will be modified specific to each site to ensure that all special or particular safeguard requirements and mitigation measures, recommended in the EMP provisions based on

detailed design, are incorporated within the BCD of each subproject (site). The IA’s safeguard officers and contractors will be provided with the necessary training on the preparation of the CEMP, safeguards requirements of the ADB and the requisite environmental regulations of GoPNG especially those that relate to the materials sourcing and opening and operation of quarries if sourcing of materials locally is required for a subproject. This training will be undertaken by the PSU’s PE and SS.

- 19) The CEMP will respond to the mitigation and monitoring measures stipulated in the BCD. Each contractor will be required to prepare a site-specific plan for mitigating measures to avoid or reduce impacts of proposed works and the contractor will further detail their construction methodology in the CEMP. During the construction and/or CHP upgrading works, it shall be ensured that the contractor strictly implements the approved CEMP.
- 20) The CEMP will set out how the contractor will achieve environmental safeguards; identify the staff designated with responsibility for ensuring and reporting CEMP implementation including implementation of the grievance redress mechanism. The CEMP will also establish how the contractor will report on CEMP implementation and corrective actions as part of Monthly Reporting to PSU. The contractor may move to the site and commence work only after the CEMP has been approved by the implementing agency and endorsed by the PSU.
- 21) Typically, contractors have limited experience in preparing, implementing, and reporting on CEMPs. Therefore, the PSU, through the PE and SS, will need to provide substantial guidance and training for contractors early in implementation to ensure that they can prepare the CEMP, and throughout the contract to ensure that they can implement and report on the CEMP.

Appendix 3 provides guidance on how to prepare a CEMP.

APPENDIX 1 - Grievance Intake Form (GRM)

CHP/Site Location:

Project ____ welcomes complaints, suggestions, comments, and queries regarding project implementation and its stakeholders. We encourage persons with grievances to provide their name and contact information to enable us to get in touch for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name.

Thank you.

| | | | |
|----------------------------|--|-----------|--|
| Contact Information | | | |
| Name | | Gender | <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Location/address | | Age | |
| | | Phone No. | |
| Province | | Email | |

Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below:

How do you want us to reach you for feedback or update on your comment/grievance?

Portion to be filled in by the staff:

| | |
|--|--|
| Date received: | |
| Received through: | <input type="checkbox"/> In person <input type="checkbox"/> mail <input type="checkbox"/> email <input type="checkbox"/> fax <input type="checkbox"/> phone <input type="checkbox"/> sms |
| Name of staff who received comment/ complaint | |
| Position of staff: | |
| Type of grievance: | |
| Remarks | |
| Signature of staff | |

Update on the case:

| | |
|-------|--------|
| Date: | Update |
| | |

APPENDIX 2 – ENVIRONMENTAL MANAGEMENT PLAN

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|---|---|--|
| Preconstruction Stage | | | |
| Land use/acquisition | Minimize financial and social impacts on local people. | Identification of suitable land possessing titles on government or church-owned land Resettlement plan for sites planned for acquisition | NDOH, PSU, provincial lands officers |
| Provision of climate change requirements in design | Minimize risk of damage to infrastructure by flooding and or land slips | Site designation should be above potentially flooded areas and away from land slip areas. | PSU |
| Construction Stage | | | |
| Access | Agreements with local land owners; Minimize vegetation clearance and erosion of exposed surfaces | Temporary access arrangements agreed Minimize size and duration of cleared areas Undertake progressive re-vegetation of cleared areas and manage spoil dumps. | Construction contractor, PE, SS |
| Preparation of site (including Contractors' facilities) | Maintain integrity of the site. | Minimize vegetative loss Soakage areas not to discharge or seep into surface water streams. Parking areas and workshops (if any) to have oil separators | Construction contractor, PE, SS |
| Septic tank installation | Minimize pollution of soil and adjacent water courses | Install as per design standard and specifications stipulated by PSU. Standard Absorption trenches to be installed. | PSU – architect Construction contractor |
| Gravel and material extraction | Reduce use of materials from unsuitable sites, Sustainable extraction and use of materials | Use existing quarry where possible Agreements with resource owners in place Obtain permits as required Submit quarry management plan or gravel extraction plan to PSU | Construction contractor, PE, SS |
| Excavation of construction sites | Loss of topsoil | Apply soil conservation and erosion prevention technologies. Use sediment basins Avoid using machinery in adverse condition. Re-vegetation/protection as soon as possible | Construction contractor, PE, SS |
| Removal and disposal of excavated waste material (if any) | Re-use of material as much as possible | Excavated material (top soil) to be stored away from site at location where it can be reused if required. Material that cannot be reused is to be landscaped so as not to cause erosion All disposal areas to be protected to avoid erosion All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | Construction contractor, PE, and SS |
| Erosion and sedimentation | Minimize erosion of exposed surfaces | Install sediment capture devices Construct diversion drains to direct clean runoff away from disturbed areas Minimize size/duration of cleared areas Undertake progressive re-vegetation | Construction contractor, PE, SS |
| Storage and handling of | Secure storage, minimize generation of potential | Store chemicals in secure area, with concrete floor and weatherproof roof | Construction contractor, PE, SS |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|--|---|--|---------------------------------------|
| construction materials, fuel, and lubricants | water pollutants, minimize accidental spills and emergency response plan in place in case accidental spills occur | Ensure that construction equipment and vehicles are maintained in good condition. All refueling to be done at least 20 m from waterways Accidental spill action plan on site. Install sanitary toilets and washing facilities at construction site Remove waste from site regularly for disposal to landfill All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | |
| Noise and vibration | Minimize nuisance to surrounding communities | Limit noisy activities to daylight hours Noise not to exceed 45 dBA at boundary of workplace | Construction contractor, PE, SS |
| Dust generation | Maintain air quality | If dust is carried towards residential areas or becomes problematic on site, the contractor is to apply dust control measures | Construction contractor, PE, and SS |
| Conflict between workers and local community | Minimize friction with surrounding communities. | Any activities such as (i) use of timber/wood as fuel; (ii) hunting; (iii) clearing of areas for gardening by construction workers prohibited | Construction contractor, PE, and SS. |
| Public access to site | Accident prevention | Erect barriers and warning signs around work areas Site can be accessed only by permission from contractor | Construction contractor, PE, and SS |
| Risks to public and worker health and safety (OHS) | Minimize risk of accidents involving the public or construction workers. | Provide safety equipment to construction workers and train them in its use Secure construction site and restrict access by local community. All vehicles to be properly maintained and operated in accordance with road laws All loads to be secured properly | Construction contractor and PE, SS |
| Use of hazardous materials | Reduction in health dangers to workers and the environment | Contractor to provide list of all hazardous chemicals/materials to be used on site. Contractor to display information sheets in work areas All such materials used and stored in compliance with NDOH guidelines | Construction contractor, PE, SS |
| Disposal of waste materials | Prevent soil and water pollution | All waste materials to be collected and sorted into those that can be re-used and those that need to go to an approved landfill site All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. Waste water and sewage waste management. | Construction contractor, PE, SS |
| Construction of power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained No impacts on existing users (mini-hydro) | Construction contractor, PE, SS, NDOH |
| Archaeological | Prevention of the loss of | Chance discoveries are to be notified to SS. Avoid | Construction |

| Issue | Performance Objective | Mitigation Measure | Responsibility for Implementation |
|---|--|--|-----------------------------------|
| discoveries | cultural values | 2 cemeteries far north of surveyed area. | contractor, PE, SS |
| Clearance and rehabilitation of construction sites and removal of contractors' facilities | Re-established environmental amenity | All solid waste to be removed from sites and disposed of in approved landfills. All contaminated soils to be removed. All sites to be rehabilitated and restored to near-original condition. To be included as part of final inspection before final payment is made. | Construction contractor, PE, SS |
| Operation Stage | | | |
| Water supply | No impact on existing users | As per design standard and specifications stipulated by PSU Environmental permits as required. | PSU and NDOH |
| Power supply | Renewable and sustainable energy sources used | As per design standard and specifications stipulated by PSU Environmental permits, as required, obtained | PSU and NDOH |
| Prevention of discharge of any untreated wastewaters into the environment | Prevention of disease spread – and environmental contamination | Sewerage systems to be built in accordance with CHP specifications (as per Appendix 1) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines. | PSU and NDOH |
| Correct disposal of all medical wastes | Prevention of disease spread – and environmental contamination | Incinerators to be built in accordance with CHP specifications (as per Appendix 2) All waste disposed of as per agreed waste management plan in compliance with NDOH guidelines | PSU and NDOH |

APPENDIX 3 - Guidelines for Preparation of Construction Environmental Management Plan

Preparation

1. The contractor is responsible for preparing the Construction Environmental Management Plan (CEMP). The CEMP is prepared after the award of the contract and is to meet the conditions of the relevant contractor bidding documents. The contractor can move to the site and commence work only after the CEMP has been approved by the project support unit (PSU). The PSU will provide training to the contractor so they can prepare and submit the CEMP.
2. The CEMP is a contractually binding document and applies equally to the main contractor and to subcontractors under its control.
3. The CEMP must be compliant with (i) the EMP and conditions as set out in the bid and contract documents (BCD), and (ii) any legislation established by any administering organization. All licenses and permits issued by any outside organization that are required to meet the CEMP conditions are to be attached to the CEMP. The contractor will notify the PSU within 24 hours of any inspections or visits from any outside organization.

4. The PSU may require the contractor to assess the CEMP activities. When any inspection by the contractor, PSU, or outside organization is undertaken and the work is found to be unsatisfactory, a notice will be issued to the contractor. The contractor will implement corrective action to address the issues raised in the notice. When the work is shown to be nonconforming with the CEMP, the contractor will be responsible for meeting costs of all investigations and associated corrective actions.

5. After a period, the contractor may request that the CEMP be changed, but any requests and alterations to the CEMP can be approved only by the PSU.

6. The contractor is to keep a daily record of all work done to meet the CEMP requirements. The daily record is to be available to the PSU. The contractor is to provide monthly reports to the PSU regarding compliance with the CEMP.

Content

7. The CEMP needs to be a concise and well-focused document that clearly sets out how the contractor will meet the requirements of the project EMP. The CEMP consists of the following sections:

a. Introduction and Purpose

Identify the project and state the purpose of the CEMP. Identify who prepared the CEMP together with the contacts of the person who prepared the document.

b. Management Responsibilities

This section must clearly identify those persons within the contractor's team who will be directly responsible for supervising the CEMP activities. Each person and position is to be identified and contact details provided for their work, after-hours phone numbers for emergency situations, and their email addresses. Details are to be provided as to whether these persons are available on a full-time or part-time basis at the construction site. As a minimum, details are required for the following positions:

- The contractor's environmental manager.
- The back-up person for the environmental manager whenever the environmental manager is away from the site.
- The contractor's site engineer, who is responsible for supervising the contract on behalf of the contractor.
- Any other persons on the contractor's team who will have management responsibilities as required to meet the activities outlined in the CEMP conditions.

c. Legal Requirements

This section will outline the various environmental laws, regulations, and standards that the contractor must comply with during construction. These include;

- ADB Safeguards Policy Statement

- Environment Act 2000
- Environmental Prescribed Activities Regulations
- Project CHP Site specific Environmental Management Plan
- The Contractor Environmental Management Plan
- Environmental Work Procedures and Guidelines
- Land Group Incorporation Act 1974
- Land Registration Act 1981

d. Licenses and Permits

There is no need for Environmental Licenses and/ or Environmental Permits at this point in pre-construction stage as this project has a level 1 Environment Prescribed Activity (EPAR) endorsement from the Department of Environment & Conservation (DEC) , however all Environmental Management Plans (EMP) as per the incorporated Contractor Environment Management Plans (CEMP) and guidelines and or notices served during the works progress must be adhered to by the Building Supervisors to avoid breach of contract agreement and thus non-compliance of Environmental laws of PNG Government and the ADB safeguard policy.

e. Special Environmental or Cultural Issues

There are no significant cultural issues for this site but there may be a few minor environmental concerns;

- a. The nearby river is protected from soils, rubbish and waste water discharged or leached.
- b. Avoid disturbances to existing building on site during soil excavation.

f. Scope of Works

Defined construction requirements clearly identify all of the work to be undertaken by the contractor.

- i. Contractor Facilities set up
 - a. Camping, messing, drinking water, toilets and bath rooms, offices etc.
- ii. Earth works
 - a. Top soil Excavation (profiling)
 - b. Leveling/ Backfilling / compaction and landscaping
 - c. Drainages (including storm water, sewer & water supply) and Excess road

- iii. Building Construction
 - a. Building 3 staff L63 houses
 - b. CHP facility
 - c. Incinerator & Gen set houses
 - d. Fencing
- iv. Plumbing works
 - a. Clean water tank and piping and taps
 - b. Waste water pipes and toilet /shower
 - c. Install septic tanks and absorption trenches
- v. Electrical wiring and Gen set
 - a. Lighting
 - b. Equipment
 - c. Power points
- vi. Rehabilitation
 - a. Dismantling of contractor facilities
 - b. Soils rehabilitation
 - c. Demobilize Clean up and

g. Plan of Works

The contractor is to provide an overall plan of works that shows the location of all of the construction sites and the contractor's support facilities. The plan of works should be based on the detailed engineering site plans and should show the following;

- boundaries of the construction sites showing the extent of the disturbed area;
- boundaries of any culturally or environmentally sensitive areas;
- access roads (temporary and permanent);
- contractor's facilities (show the location of offices, workshops, vehicle and machinery parking areas, material storage areas, fuel stores, etc.);
- worker camps;
- areas to be excavated;
- areas where excavated fill will be dumped both as temporary and permanent dumps;
- locations of material sources, sand, and stones;
- waste disposal sites (nonhazardous and hazardous); and

- north, the map scale, contours, and existing drainage lines.

h. Machinery and Support Equipment Brought to Site

The contractor is to provide:

- a list of all the machinery, vehicles, and support equipment that will be brought to the project;
- the age of the machinery;
- an assessment of the condition of the machinery¹ as good, average, or poor; where average or poor machinery is listed, describe the defect;²
- where vibratory rollers are to be used, indicate the weight of the roller and the safe operating distances where the machine can be operated without causing harm to surrounding buildings or other susceptible infrastructure (the zone of vibration); and
- any machinery that will create noise above 45 dBA is to be listed.

Table 2 - Example of Table for Machinery that will be Brought to Site

| Make and Type | Age (years) | Condition |
|-----------------|-------------|-----------|
| ABC utility | 2 | Good |
| DEF tractor | 3 | Average |
| GHI excavator | 4 | Average |
| JKL 7-ton truck | 1 | Good |

i. Details of Sites Used to Source Raw Materials

The CEMP is to detail raw materials to be sourced for the works this includes borrow pits and quarries. As quarries and materials extraction is a Prescribed Activity under EPAR, an environmental permit may be required. This will need to be obtained from DEC. This section of the CEMP can be submitted to DEC as part of the consideration of the application for the permit. The CEMP is to provide the following details:

- location of material supply areas;
- type of activity and material extracted, e.g., borrow pit for sub-base or quarry for aggregate; (*no need for quarry due to Environmental permit limitations*)
- requirement for any permits or approvals to open the borrow pit of quarry;

¹ Condition relates to the age and the maintenance of the machinery or vehicles. Any vehicles or machinery that are leaking oil or fuel and are operated without satisfactory silencing or are deficient in safety equipment must be classified as average or poor.

² Under the contract, the PSU is able to reject any machinery or vehicles that are unsatisfactory.

- estimated amounts to be extracted – total volume required and daily amounts as numbers of truckloads for how many days/months;
- names of villages and distances along road (in kilometers) that the haul road may need to traverse before reaching the site;
- machinery that will be operated at the site; and
- health and safety issues that will be required to be addressed at the site.

j. Contractor's Facilities and Worker Camps

Provide details of the facilities that the contractor will erect on-site for (i) its own use, and (ii) worker camps. The contractor is to show the location of these facilities on the plan of works and provide the following details:

- For contractor facilities: show the areas required in square meters for all facilities such as administration offices, stores and workshops, vehicles and machinery parking areas. Show sources of electricity and water supply.
- For worker camps: provide details of (i) number of people occupying the camps; and (ii) areas (m²) and facilities installed for (a) washing and sanitation areas, (b) cooking, (c) sleeping areas, and (d) recreation areas.

For both the contractor and worker facilities, describe the following:

- type of construction of facilities (floor, walls, and roof);
- storm water drainage, collection systems, flow paths, and disposal areas;
- source of water and type of treatment required for cooking, washing, and drinking;
- effluent systems to handle the disposal of washing, sanitation, and kitchen waste water;
- source of energy to be used for heating and cooking;
- confirm as "yes" or "no" if the facilities or camps are to be located within or closer than 2 kilometers of a protected or forested area;
- how long the camps will be required to be used; and
- Procedure for closing and dismantling the camps.

Table 3 – Guide to Contractor's Facilities to be Used during Construction

| | Facility | Area (m ²) | Construction | | | Storm water drains to... | Effluent drains to... |
|---|--|-------------------------------------|----------------------------|--------|--------|---|--------------------------|
| | | | Floor | Walls | Roof | | |
| 1 | Administration offices | 300 m ² (30 m x 10 m) | New transportable building | | | Freshwater tanks | Closed septic system |
| 2 | Workshop and machinery wash down areas | 200 m ² (20 m x 10 m) | concrete | c.g.i. | c.g.i. | Oil & water separator > sediment basin > natural drainage | Closed septic system |

| | | | | | | | |
|---|---|-------------------------------------|---------------------------|--------|--------|---|------|
| | | | | | | system | |
| 3 | Vehicle and machinery parking area | 800 m ² (40 m x 20 m) | Compacted coral aggregate | | | sediment basin> natural drainage system | n.a. |
| 4 | Storage area – materials | 400 m ² (40 m x 10 m) | Coral aggregate | c.g.i. | c.g.i. | Sediment basin> natural drainage system | n.a. |
| 5 | Storage area – fuel (5,000 liter) skid tank | 15 m ² (5 m x 3 m) | Concrete bunded base | | | Oil and water separator > sediment basin> natural drainage system | n.a |

c.g.i. = corrugated iron; n.a.= not applicable.

Environmental Protection Work Procedures

8. The CEMP is to provide a series of procedures that are designed to protect the environment. These are called environmental work procedures (EWP) and outline how work will be arranged to address the various issues that have been outlined in the CEMP.

9. The CEMP will review and build on the project EMP requirements to develop more detailed procedures for implementation in the construction activity. While the project EMP provides a list of mitigation requirements that will require procedures to be developed for each of them, the contractor is required to review the adequacy of the requirements and if necessary include additional procedures. Should the contractor consider that a procedure that is shown in the project EMP is not required; the contractor will need to justify that decision.

10. The following is a list of procedures that may be required to be included in the CEMP. The project EMP will confirm which of these procedures or others will be required;

- Site preparation
- Excavation of construction sites
- Removal and disposal of excavated waste
- Erosion and sedimentation
- Storage and handling of construction materials, fuel, and lubricants
- Noise and vibration
- Dust generation
- Public access to site
- Risk to public and worker health and safety (OHS)
- Use and storage of hazardous materials.
- Worker issues (e.g., use of fuel wood, hunting, clearing areas for gardening)
- Disposal of waste material (solid and liquid)

- Archaeological discoveries and Cemeteries
- Rehabilitation of construction sites and contractor facilities

Monitoring of Work

11. The CEMP is to provide details of how each activity will be monitored: how frequently the monitoring will be carried out, what criteria (parameter) will be monitored, and who will undertake the monitoring. A monthly report on monitoring activities is to be included in the monthly CEMP report.

Staff and worker Training

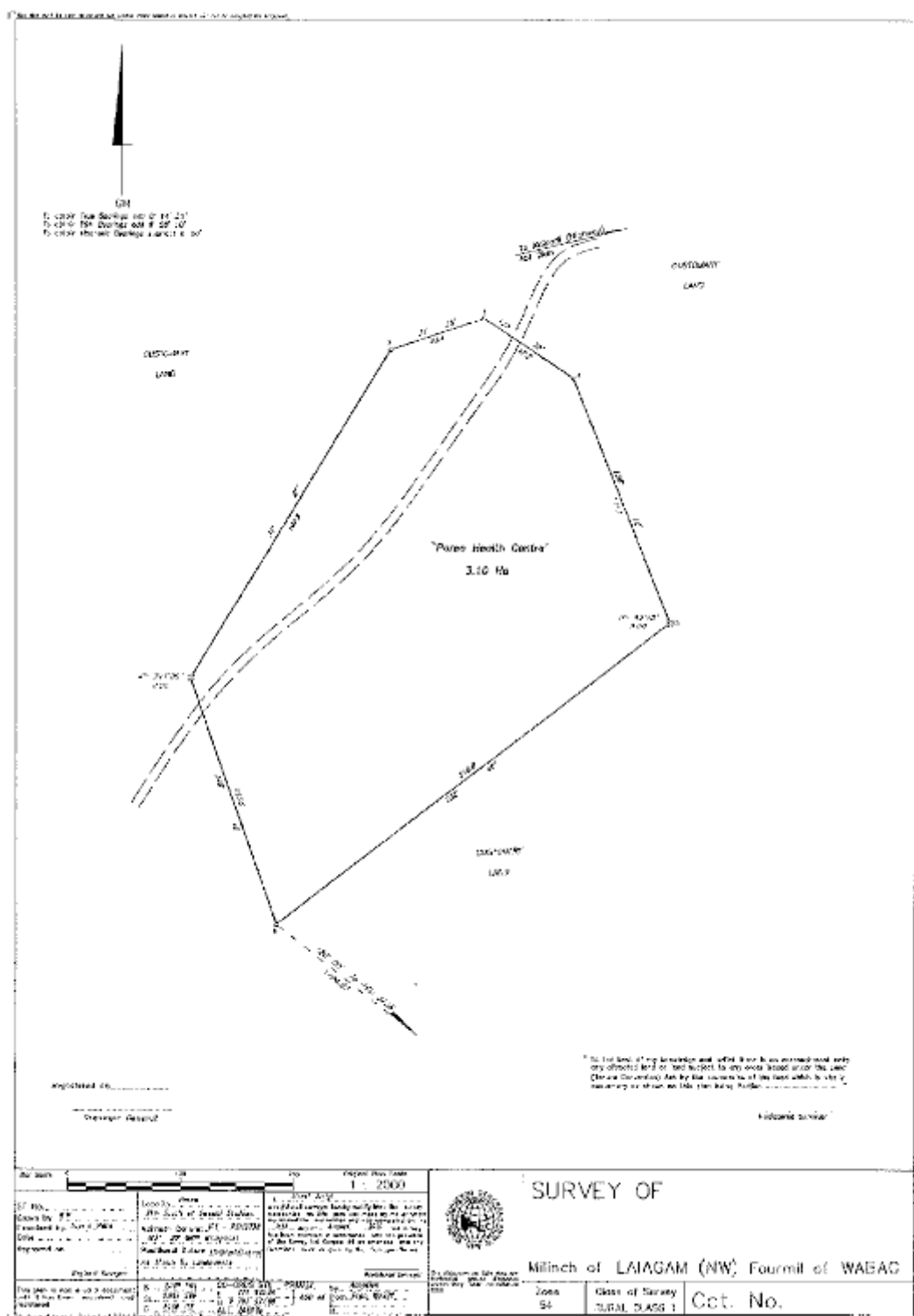
12. The CEMP is to provide details of staff and worker training and awareness programs that will be required to ensure compliance with the CEMP. Awareness of staff and workers about safety and environmental regulations, the CEMP requirements, and in special circumstances where work will need to be carried out within or adjacent to protected areas or areas of cultural heritage will be particularly important. The program will need to show who will be responsible for implementing the program and where the program will be introduced so as to ensure that all workers are aware of the CEMP requirements before commencing work.

13. The contractor is to provide details in a monthly CEMP report. The report will be prepared by the person who has been identified within the contractor's team as responsible for overseeing the CEMP procedures. The report will outline progress with regard to the project's physical monitoring targets and implementation of the CEMP for these works. The report should note which tasks have been completed and have been approved for payment by the PSU. The report is to specify if any notices have been issued by the PSU to correct work and what has been done by the contractor to address these issues.

14. Any complaints or issues that have been received from the public are to follow the general requirements of the GRM and be listed in the report. Three copies of the report are to be sent to the PSU. The report will address the following topics:

- Status of work program: work completed, construction under way, and work planned
- Environmental unit and staff situation for the month
- Staff and worker awareness training carried out
- Waste volumes, types, and disposal (inorganic and organic)
- Areas re-vegetated and rehabilitated
- Dust control report
- Discovery of artifacts
- Safety and monthly accident report
- Status of CEMP environmental mitigation measures
- PSU notices issued and status of all nonconforming work
- Environmental Incidents
- Complaints received (as per GRM)
- Other relevant environmental issues

APPENDIX 4: CHP SITE SURVEY MAP.



APPENDIX 5: ENVIRONMENTAL PERMIT APPROVAL FROM CEPA.



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Environment Protection Wing

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Mr. Robert Akers – Projects Manager
Rural Primary Health Services Delivery Project
Department of Health
P.O. Box 353
GORDENS
National Capital District

Date: 25th November, 2013
File: ENPC-28-14-32
Action Officer: DL

Dear Mr. Akers,

**SUBJECT: CONFIRMATION OF RURAL PRIMARY HEALTH SERVICES
DELIVERY PROJECT ACTIVITIES AS LEVEL ONE ACTIVITIES**

Your query on the Environment Permit process for Level One Activities under the Environment Regulations 2002, dated 21st October 2013, has been received and acknowledged.

Following an inspection of the Atotau (Milne Bay Province) premises (Huhuleta and Curney) on 19th -20th November 2013, please be informed that Rural Primary Health Services Delivery Project activities are well below the requirements of Level 2 and 3 Prescribed Activities under the Environment Regulation 2002. Hence the project is classified as a Level 1 activity.


Level 1 activities are exempted from the obligation to have an Environment Permit. However, activities under this category are required to observe the appropriate environmental guidelines and codes of practices that are relevant to the activity. More importantly, Level 1 activities should be carried out in accordance with the requirements under the Environment Act and Regulations as well as any Policies that are established under the *Environment Act 2000*.

This letter provides clearance for the Health Department to carry out works associated with Rural Primary Health Services Delivery Project as Level 1 activities under the Prescribed Activities of the *Environment Regulation 2002*.

Yours sincerely,


K. MICHAEL WAU
Deputy Secretary

Delegate of the Department of Environment & Conservation

NOTED
Please scan to
"P" drive &
file hard copy

10/12/13

APPENDIX 6: PROVINCE AND COMMUNITY CONSULTATIONS



Dinner with Enga Provincial Health CEO Mr. Aron Luai, Project Officers and Lands Officers.



Site assessments and Community consultation at Porea.

APPENDIX 7: ENGA PROVINCIAL CAPITAL MAP



Enga Province

