

Semi-Annual Report

July 2019

PNG: HIGHLANDS REGION ROAD IMPROVEMENT INVESTMENT PROGRAM (TRANCHE 3)

Gewa-Gembogl Road Sub-Project

(January-June 2019)

Prepared by Highlands Road Management Group (HRMG) of the Department of Works for the Asian Development Bank

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FACT SHEET:

Loan	ADB Loan: 3404/3408 and Grant 0485 PNG
Project Number	CSTB 3530
Subproject	Gewa-Gembogl Road Subproject
Executing Agency	The Department of Works (DOW) is the executing agency for the Highlands Region Road Improvement Investment Program (HRRIP). It has overall responsibility to manage the planning, implementation and monitoring for all road improvement works including environmental management and environmental compliance monitoring. It also includes the acquisition of use rights for additional land to implement HRRIP subprojects, as well as compensation for damages on project-affected land DOW is also responsible for reporting to ADB and the recruitment of the organization to conduct independent monitoring
Implementing Agency/Unit	<p>The DOW will also be the Implementing Agency for the road improvement works. The DOW has delegated to the Highlands Road Management Group (HRMG), the responsibility to carry out the planning, implementation and monitoring for environmental management and environmental compliance monitoring, land acquisition and/or resettlement activities, as required. The more relevant delegated responsibilities include the following;</p> <p>Prior to the commencement of civil works:</p> <ul style="list-style-type: none"><input type="checkbox"/> Submit and indorse environmental assessments required for regulatory approval of the CEPA and require the Contractor to obtain approval, e.g., environmental clearance, environmental permit or permits from other statutory authorities as required by the Government.<input type="checkbox"/> Ensure that all regulatory clearances for the subproject are obtained from the relevant government authorities and are submitted promptly to ADB.<input type="checkbox"/> Ensure that the EMP is updated based on detailed design and included in the bidding document of the subproject and that all bidding Contractors have access to the environmental assessments and EMP.<input type="checkbox"/> Ensure that the EMP and all required mitigation measures during construction, including conditions stipulated in the CEPA's clearance or environmental permit, are included in BCD with requirements to update the EMP in response to any unexpected impacts and<input type="checkbox"/> That all selected Contractors have agreed to implement in full the requirements of environmental mitigation measures prescribed in the EMP<input type="checkbox"/> Provide training as required to HRMG in Mt Hagen and Contractor;<input type="checkbox"/> Receive environmental safeguard clearance on subproject(s).<input type="checkbox"/> Provide training to Contractor prior to preparation of CEMP, safeguards requirements of ADB and regulatory requirements of Conservation Environment Protection Authority (CEPA).

- ☐ Approve CEMP for the subproject, after being cleared by PSC.

During the implementation of civil works:

- ☐ Ensure that the CEMP including all proposed mitigation measures and monitoring, and relevant provisions of the environmental assessments is updated as required,
- ☐ Conduct environmental management and compliance monitoring on a monthly basis in cooperation with the PSC.
- ☐ Review and assess the Contractor's monthly environmental monitoring report and compliances as contained in the CEMP.
- ☐ Assist the Engineer in the compliance of the submitted CEMP.
- ☐ Prepare the quarterly and semi-annual reports in cooperation with the PSC for submission to DOW and ADB.

**Coverage of the
Environmental Monitoring
Report for 2019**

January to June 2019

Abbreviations

ADB	- Asian Development Bank
AP	- Affected People
CEMP	- Construction Environment Management Plan
CEPA	- Conservation Environment Protection Authority
CHEC	- China Harbour Engineering Company
CRO	- Community Relations Officer
DBST	- Double Bitumen-layer Surface Treatment
DC	- Design Consultant
DOW	- Department of Works
DSRT	- District Sectioned Reassessment Team
EA	- Executing Agency
EMP	- Environment Management Plan
EMR	- Environmental Monitoring Report
EO	- Environment Officer
ESSU	- Environment and Social Safeguards Unit
GOPNG	- Government of Papua New Guinea
GRC	- Grievance Redress Committee
GRM	- Grievance Redress Mechanism
HCRN	- Highlands Region Core Road Network
HIV/AIDS	- Human Immune Deficiency Virus/Acquired Immunodeficiency Syndrome.
HRMG	- Highlands Road Management Group
HRRIP	- Highlands Region Road Improvement Investment Program
IA	- Implementation Agency
IEE	- Initial Environment Examination
LLG	- Local Level Government
MFF	- Multi-tranche Financing Facility
MOA	- memorandum of Agreement
NOV	- Notice of Violation
NRA	- National Roads Authority
PIU	- Project Implementation Unit
PNG	- Papua New Guinea
PRO	- Public Relations Officer
PSC	- Project Supervision Consultant
PWM	- Provincial Works Manager
ROW	- Right of Way
RP	- Resettlement Plan
SEMR	- Semi-annual Environmental Monitoring Report
SHP	- Southern Highlands Province
SPS 2009	- Safeguards Policy Statement 2009
SP	- Service Provider
TOR	- Terms of Reference.

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1.0 Introduction

1. This semi-annual environment monitoring report (SEMR) is prepared by Department of Works (DoW)–Highland Road Management Group (HRMG) for the Gewa to Gembogl sub road project under Tranche 3 (herein Project 3) of the Highlands Region Road Improvement and Investment Program (HRRIP).
2. The SEMR is a requirement for project environment monitoring and reporting as stated in the Asian Development Bank's (ADB) Safeguards Policy Statement 2009 (SPS 2009). This EMR covers the period from January to June 2019 which reports on all environment implementation activities and outcomes and mitigation measures on the road subproject.

1.1 Background

3. The Highlands Region of Papua New Guinea (PNG), consist of the Provinces of Western Highlands, Jiwaka, Southern Highlands, Hela, Eastern Highlands, Enga and Simbu. These provinces provide major contributions to the PNG economy through their agricultural production and mineral resources.
4. These economic contributions make it essential to have a well-maintained road network to facilitate the movement of goods and people. The Government of PNG (GoPNG) has made significant investments in improving the road network, but a lack of maintenance has resulted in the deterioration of the roads to the extent that the Highlands Core Road Network (HCRN) is now in poor condition.
5. In order to address the deterioration of the HCRN there is a need to: (i) implement a program of regular maintenance on all HCRN roads that are in good condition; and (ii) improve those roads that are in poor condition, and (iii) ensure that maintenance begins on those roads as soon as the improvement works are completed.
6. The GoPNG has negotiated a Multi-Tranche Financing Facility (MFF) loan with the Asian Development Bank (ADB) to implement the Highlands Region Road Improvement Investment Program (HRRIP). The HRRIP includes projects to improve the HCRN, the preparation of long-term maintenance contracts for the HCRN, and the capacity development of road agencies. In total, 13 road sections are expected to be funded under the program. The Execution Agency (EA) for the program is Department of Works (DOW) whilst the Highland Road Management Group (HRMG) is the Implementation Agency (IA) for road improvement works. The National Road Authority (NRA) is the IA for Road Maintenance works.
7. The Tranche 3 projects include the improvement of four (4) road sections namely, Nipa-Munihi (28.550km), Piangia-Wiru Loop (31.40km), Gewa-Gembogl (21.025km) and Hangenofi-Nupuru (34.00km) in the Southern Highlands, Chimbu and Eastern Highlands Provinces, respectively.
8. The rehabilitation of the Gewa-Gembogl road is one of the 13 projects supported through the above-mentioned loan.
9. The contract for this project has been awarded to China Harbour Engineering Company Limited (CHEC). The contractor was given the permission for site occupation in mid-October of 2017. The construction period of the project is 24 months. It is expected that the project will be completed by January 2020. Thereafter, the defects liability period of one year begins. After the end of the defect's liability period, a program of maintenance of ten years commences. This road will provide an effective link between Kundiawa and Gembogl districts in Chimbu Province.

1.2 Project Description

10. Gewa to Gembogl road section is 21.025 km long connecting Kundiawa district with the Gembogl district, both in Chimbu Province. The construction works for this road section includes up-grading of the tract that was built in the 1970s.
11. The rehabilitated road will have a 6.0-meter sealed carriageway with double bitumen surface treatment (DBST) and 1.0-meter-wide gravel shoulders which will be sealed as necessary to prevent possible scour/erosion. The horizontal and vertical alignments will follow the existing alignments as much as possible.
12. The environmental impacts assessed at the time of preliminary design categorised the subproject as Category B. This category was confirmed by the in-depth environmental analysis conducted at the time of project preparation. The IEE confirmed that environmental impacts of the rehabilitation of the Gewa-Gembogl road are limited to the road corridor, which are minor, and any adverse impacts can be mitigated through the implementation of the measures contained in the environment management plan. The impacts such as dust, noise, liquid and solid waste, hazardous wastes, materials sourcing, storage, haulage, soil erosion, sedimentation and run-off are likely to occur mainly during the construction phase.
13. Based on the EMP presented in the IEE, a construction environment management plan (CEMP) was prepared by the contractor in June 2016. As the document did not meet with the basic requirements, the document was referred back to the contractor for further improvement before its re-submission. The CEMP was given a 'No Objection' letter on the 23rd of January 2018 by ADB. The approved CEMP and monitoring requirements will be conducted by HRMG Environmental Officers and Project Supervision Consultants.
14. Supervision, technical assistance and internal monitoring are undertaken by the Project Supervision Consultant (PSC). The Contractor's Environmental Officer is tasked to implement the CEMP and address environmental concerns. The Environmental Officer (EO) of HRMG conducts an Independent Audit and sometimes joint monitoring with the PSC but prepares an independent monthly monitoring report.

1.3 Purpose

15. This report is written to present the status of environment safeguards in respect of the Gewa-Gembogl road section. QEMR are requirements under the SPS. These reports serve the client, ADB and other organisations to understand the environmental management process, its outcome and the effectiveness of corrective actions that will be implemented.
16. This report contains environmental issues covering the period from January to June 2019.

1.4 Methodology

17. This three-month consolidated report uses the data gathered from several sources. These include (i) Contractor's monthly reports; (ii) Supervision Consultant's verification of environmental compliance which are contained in monthly reports; and (iii) HRMG-PIU internal audits which are also done at least twice a month which are contained in monthly reports.
18. This report is also reviewed by the Supervision Consultant and HRMG-PIU prior to its submission to DOW and ADB. It follows the format prescribed by ADB and a checklist for monitoring environmental compliance.

19. The list of reports reviewed is in Appendix 1 while the names of people interviewed are presented in Appendix 2.

1.5 Report Organisation

20. The report consists of the fore going introduction and 2 other sections as follows:

- a) Section 1 –Introduction
- b) Section 2 – Monitoring results and findings and
- c) Section 3 – Conclusions and recommendations and appendices.

2.0 Monitoring Results and Findings

21. The main findings of internal monitoring during the review period are presented in this section.

22. Discussed below is the status of performance of each of the applicable 21 parameters as well as community consultations and environmental grievances during the reporting period.

23. The monthly reports of PSC and HRMG provide a summary of the environmental non-compliance of the Contractor. A separate monthly audit report by HRMG on environmental issues requiring immediate attention is also submitted to the Resident Engineer who then issues a letter of Non-Compliance to the contractor.

24. The summary of non-compliance from the monthly reports prepared by HRMG from January to June 2019 is provided in Table 1. HRMG has issued Notices of Violation (NOVs) form to ensure that non-compliance reaches the contractor and a feedback mechanism is established. The contractor than provides a corrective action request in response to the NOV that was issued.

Table 1. Summary of Non-Compliance Notices for January-June 2019 for Gewa-Gembogl.

NON-COMPLIANCE	MONTH					
	J	F	M	A	M	J
Evidence of continuous burning of used tyres at the crusher site.	X	X	X	X	X	X
Lack of wastewater treatment at Goghme Batching Plant area.	–	X	X	X	X	X
No approved QMPs of three identified quarries along the project site.	X	X	X	X	X	X
Workers not wearing appropriate PPEs for specified tasks.	X					
The designated spoils disposal sites did not consider the very steep slopes which are impacting water bodies and vegetation cover downstream.	X	X	X	X	X	X
Absence of registered security personnel and proper fencing at explosive storage site.	X	X	X	X	X	X

25. Aside from the monthly reports prepared by HRMG, the Environmental Officer of HRMG also conducts audit reports that are contained in the Back to Office Reports (BTOR). These reports are then forwarded and endorsed by HRMG to the Resident Engineer and The Engineer to provide rectification or mitigation measures.

26. Discussed in some detail below is the status of performance of the various activities carried out during the reporting period.

2.1 Training, Mentoring and Meeting

27. There were no trainings held from January to June 2019. Trainings and Seminars are very important for capacity building for the Contractor's EO including the HRMG EO and the National Environmental Specialist. Moreover, there will be mutual understanding for safeguarding the natural environment whilst implementing the road project.
28. In every monthly inspection, brief meetings are held with the contractor's Environment Health and Safety Personnel. The meetings are basically to verbally cover the 21 monitoring parameters and later proceed for inspections for verification.
29. Mentoring is ongoing as the junior officials are guided by senior officials during field inspections and complying reports.
30. Joint inspections are done together with the contractor's environment and safety officer to clear miss understanding and ensure compliance.

2.2 Health and Safety Issue

31. The contractor's camp is generally clean with domestic rubbish being disposed at designated location at Ch.18+922 (landfill area).
32. Casual workers are issued with basic PPEs, but no job specific PPEs for workers at the batching and crushing plant. Workers at the batching and crushing plant area need to be issued with facial masks to prevent inhaling dust. Except for the workers at the bitumen plant that are issued with job specific PPEs.
33. Security officers are burning old tires at Sumburu Crusher site to provide heat during the night. Inhaling of toxic air can cause heart and lung diseases in the long run.

2.3 Contractor's Camp and Yard

34. The contractor's camp is well managed and is generally clean.
35. The camp site is located at Goghme Station (Ch.19+300) which is in between the Catholic Mission Station and the District Administration area. It is fenced with steel fence to prohibit the entrance of unauthorised personnel.
36. The camp is occupied by Chinese Personnel only. Local workers rent rooms from the surrounding communities. There are no ancillary facilities located in the Goghme Camp except the contractor's and the Engineer's Laboratory.

2.4 Earth Works

37. The earth and civil works have been progressing with much less community resistance from Ch10+500-Ch.31+000.
38. The District Administration has paid the APs and the ones that were left out by the previous sitting Member of Parliament (MP) and genuine ones. Some have been under paid, however there are no stoppage or disturbance of work. The work has been progressing smoothly.

2.5 Erosion and Sedimentation

39. The major causes for the high erosion rates during this period are lack of mitigation measures during clearing and grubbing of spoils and vegetative materials over hill slopes.
40. There are high erosion and sedimentation incidences caused by the clearing and grubbing on steep hilly slopes. Sediments that were exposed to climatic conditions by civil works have been washed to lower elevations by heavy rain.
41. Because of the steep adjacent slopes and as a result of excavation activities have created so many critical slopes resulting to land slippage. The Grievances that are out of the ROW are entirely the sole responsibility of the contractor.



Photograph 1. Lack of mitigation measures to prevent erosion

2.6 Water Quality

42. The major cause for the sediment laden river is the negligence of the contractor to institute soil erosion and sediment deposition mitigation measures. Chimbu River is murky as a result of sedimentation from civil works and partially due to the wet season.
43. The batching plant area is releasing raw hazardous wastewater into the natural stream that is flowing in between the Mission Station and the Local Community.



Photograph 2. Raw wastewater from the batching plant flowing into natural stream

2.7 Air Quality

44. Similar to other road construction activities, the impact on air quality comes from pollution generated by the heavy equipment, passing vehicles and generators. It is recommended that periodic vehicle maintenance be conducted as required in the CEMP.
45. Air pollution from dusts has been observed and regular water spraying needs to be done more frequently during days when there is no rain.
46. The dust particles at the batching and crushing plant area are visible and workers need to be issued with appropriate facial masks.
47. Burning of old tyres has been ongoing at the same location near the workshop area. That means that the same workers at the workshop area are the ones that will be affected for directly inhaling strong fumes from burnt tyres that can cause dizziness and headache when inhaled and can cause heart and lung problems in the long run.
48. There are grievances from the local communities about the fumes coming out from the bitumen chimney. Recommendations have been made for extension of the current chimney to be extended or diverted away from the market area.



Photograph 3. Bitumen chimney needs to be adjusted in height or diverted away from the fence.

2.8 Noise Management

49. There has been no community complaint on excessive noise during the monitoring period. Noise level ranging from 83-85dB or higher could impair person's hearing.
50. High noises of the crushing plant are being prevented by issuance of earmuffs to the workers, working on crushing plant.
51. It is also recommended that the contractor should regularly monitor both the sound levels of their heavy equipment and check if PPEs are used as prescribed.

2.9 Solid Waste Management

52. Because of the geographical setting of the project site, the disposal of spoils during clearing and grubbing has caused soil erosion into the water bodies and the associated vegetation. Despite agreements on spoils disposal sites, this is a recurring problem.
53. After the issuance of the NOV on 25 February 2019, the continuous no-compliance of storage and disposal of domestic waste at Sumburu Quarry have been managed following the recommendations stated in the NOV refer to Photograph 4. **Warning signage erected to prevent throw of rubbish at Sumburu quarry site..**
54. Old tyres are continuously being burnt near the workshop at Sumburu Quarry.



Photograph 4. Warning signage erected to prevent throw of rubbish at Sumburu quarry site.

2.10 Hazardous Material Management

55. The fuel depot is at DoW Kundiawa, fuel is transported by tankers to refuel construction equipment and plants. There are no facilities to collect and dispose of hazardous chemicals including used oil and lubricants. HRMG and the PSC Environmental Safeguards Personnel will conduct an audit on safety procedures on storage, handling and disposal of fuels. There are less oil spill occurring after the issuance of NOV's for oil spill at Sumburu quarry site.
56. Contractor managed to issue specified PPEs for workers working at the bitumen plant. The workers are seen in nose mask, rubber boots, hand gloves, helmets and safety vest to prevent them from direct contact with bitumen.



Photograph 5. Workers at the bitumen plant with job specific PPEs

2.11 Aggregates Extraction

57. HRMG through the CSC issued the NOV to the contractor for continuous noncompliance of no approved QMPs for the three identified quarries (Kanikge, Banduma and Semer) on 25 February 2019.
58. Contractor managed to submit the QMPs directly to PSC's National Environment Specialist; however, there is a line of communication that all these management plans have to come through the Residential Engineer.
59. The Sumburu Quarry in Ch: 24 + 350 apart from extraction, the site has been identified and nominated for establishment of the crushing plant that has proceeded since June 2018. A payment of Kina 12,000 is paid each month to Sumburu Lutheran church as according to the lease arrangement between the contractor and the Lutheran Church which has the title over the site signed on the 28 February 2018 for the establishment of camp and the installation of the crushing plant.
60. Five identified quarries have their data available. Materials extracted are at an agreed cost of Kina 3.00 per bucket which is at Kina 30.00 per truck loads for the standard ten tonne trucks.
61. It is estimated that a total of 6323 burrows were extracted from the five quarries, The Kongrinikge Mud-stone Quarry, Banduma Limestone Quarry, Seme Riverine Quarry, Sumburu Quarry and Kanige Riverine Quarry respectively produced 500 loads (8%), 199 loads (3%), 389 loads (6%), 2097 loads (33%) and 3138 loads (50%).

Table 2 below shows the volume of aggregate extraction and value paid per quarry and summary.



Photograph 6. Stone extractions at Banduma Quarry

Table 2. Royalty payments for quarrying activities covering January-June 2019

Month	Kongirnike Mudstone Quarry Ch: 24 + 800	Banduma Limestone Quarry Ch: 16 + 900	Seme Riverine Quarry Ch: 17 + 480	Sumburu Quarry Ch: 24 + 500	Kanige Riverine Quarry Ch: 15 + 800	Total Aggregate Extraction	Estimated Value (K)
January	N/A	12	101	112	417	642	19, 260.00
February	N/A	17	118	115	525	775	23, 250.00
March	N/A	30	100	110	360	600	18, 000.00
April	NA	70	50	600	684	1404	42,120.00
May	500	70	20	600	648	1838	55, 140.00
June	NA	NA	NA	560	504	1064	31,920.00
Total	500	199	389	2097	3138	6323	189, 690.00
Average	83	33	65	350	523	1054	31,615.00
Percentage	8%	3%	6%	33%	50%	100%	xxxxx

2.12 Ancillary Facilities Management

62.At Sumburu Quarry there are several ancillary facilities found, which are, workshop, equipment parking, bitumen plant, crushing plant, stockpile and camp site.

63.There is a security concern at the explosive storage site at (Ch. 17+850). The guards stationed there are local boys who are in their early 20s. There is no electricity provided, the gates are locked with rusty lock pads.

64.It poses Local and National Security Threat. There are more than 15 households nearby and the current political difference is a major concern that these explosives be guarded by registered security firms.

65.The Batching Plant setup at Goglme is already being in use and is discharging considerable amount of hazardous waste water into the receiving stream at Goghme Station refer to Photograph 2 above.

2.13 Tree Removal and Vegetation Management

66.So far tree removal and vegetation management has not been assessed from January-June 2019. Information on tree planting guidelines has been provided. However, no plans have yet been prepared for revegetation or tree planting.

67.Sedimentation has been accelerated by the hilly rugged terrain of the project site. Hence, underlying vegetation's have been destroyed at certain sections of the project site.



Photograph 7. Rugged terrain couldn't resist disposal over the hillside on existing vegetations.

2.14 Socio-Economic Issues of Workers

68. The project hired a total of 7,328 workers from January-June 2019 consisting of 5,945 males and 1133 females or roughly 84% and 16% respectively. The breakdown for each month is shown in Table 3. There were 6117 displaced persons (DP) employed representing 87% of total persons hired.
69. The computation of the wages paid for women workers need to be verified considering that they are not always paid on a per hour basis for 8 hours a day but on their accomplished work for the day which could be a lot less.



Photograph 8. Casual workers making gabion basket.

Table 3. Summary of disaggregated employed workers from January-March 2019.

Month	Male	Female	Total	DPs Employed	Estimated Female Wages	Estimated Total Wages
January	793	180	973	722	90,000.00	486,500.00
February	902	253	1155	895	126, 500.00	577,500.00
March	950	250	1200	934	125, 000.00	600,000.00
April	1100	250	1350	1110	125,000.00	675,000.00
May	1100	250	1350	1200	125,000.00	675,000.00
June	1100	200	1300	1256	100,000.00	650,000.00
Total	5945	1133	7328	6117	341, 500.00	3,064,000.00
Average	991	189	1221	1020	113, 833.33	510,666.67
Percentage	84%	16%	100%	87%		

70.The minimum wage in the Highlands Region is around Kina 500 a month. This is the basis for estimating the wages paid to women for the covered period. This amount is multiplied by the number of women for the covered period. It is estimated that the women were only able to provide 75% of their time for these construction activities because of the demands of their household responsibilities.

2.15 Socio-Economic Issues of Community

71.The report period covering January-June 2019 show that the contractor has locally purchased various food items, construction materials and miscellaneous items. For the three-month period, a total of Kina 282,913.00 has been spent (Table 4).

72.Equally notable is the purchase of items locally produced and owned by the roadside communities. As part of sharing project benefits to the affected communities, the contractor has sub-contracted other necessary maintenance work within the campsites to the locals who have sufficient skills and capacity to carry out maintenance work.

73.. The total amount spent by the contractor for this reporting period for all local purchases was Kina 392, 413.00. Food was purchased for Kina 23, 000.00 (14%), Construction materials amounted to Kina 56, 000.00 (6%), Purchases of other items amounted to Kina 9,613.00 (2%) and local sub-contracts were paid Kina 392,413.00 (78%). The details are shown in Table 4:

Table 4. Local purchases of food and other items from January to March 2019.

Month	Purchases of Food	Construction Materials	Purchases of Other Items	Local Sub Contracts	Estimated Amount (K)
January	2, 500.00	7, 000.00	2, 000.00	63, 000.00	74, 500.00
February	6, 000.00	12, 000.00	2, 433.00	89, 500.00	109, 933.00
March	7, 000.00	10, 000.00	2, 980.00	78, 500.00	98, 480.00
April	2,500.00	8,000.00	2,200.00	32,000.00	37,500.00
May	2,000.00	8,000.00	NA	28,000.00	38,000.00
June	3,000.00	11,000.00	NA	20,000.00	34,000.00
Total	23,000.00	56, 000.00	9,613.00	311,000.00	392,413.00

Average	3,833.00	9, 333.00	1,602.00	51833.00	65,402.00
Percentage	14%	6%	2%	78%	100%

74. Contractor Construction Camp rentals for Goglme Camp (Ch: 18 + 100) have been arranged through a MOU (Copy attached) in such a way that no rentals be paid to the landlord but for him to acquire full ownership of the facility soon after the completion of the project.

75. Revenues for customary landowners for the lease of customary land for explosive storage site at Banduma and seven disposal sites are presented in this report. Also stated here are the rentals paid to local house owners at Goglme by contractor for few of its skilled and professional workers accommodation. The other arrangement is for the monthly payment of Kina 12,000.00 to Sumburu Lutheran Church for the Quarry facility instalment. Table 5 shows the details.

Table 5. Summary of Lease Rental Payment Rental Paid to Customary Landowners

Month	Sumburu Quarry Plant Site	Bandoma Explosives Storage	Staff Accommodation	Disposal Sites K500/site	Estimated Amount (K)
January	12, 000.00	2, 500.00	3, 600.00	2, 000.00	20, 100.00
February	12, 000.00	2, 500.00	2, 800.00	500.00	17, 800.00
March	12, 000.00	2, 500.00	4, 700.00	1, 000.00	20, 200.00
April	12,000.00	2,500.00	5,000.00	1,000.00	20,500.00
May	12,000.00	2,500.00	7,000.00	500.00	22,000.00
June	12,000.00	2,500.00	8,000.00	2,000.00	24,500.00
Total	72,000.00	15,000.00	11, 100.00	7, 000.00	125,100.00
Average	12, 000.00	2, 500.00	3, 700.00	1, 166.67	20,850.00
Percentage	68%	14%	11%	7%	100%

2.16 Public Safety

76. The risks to public safety are not limited within the road construction limits. Possible impacts downstream or downhill are very high along the subproject due to the very steep slopes.

77. The risks to public safety should be identified in terms of erosion and sedimentation of water bodies and home gardens need to be conducted by the contractor.

78. The contractor is required to follow the provisions of its CEMP and site-specific safety practices should be observed at all times during the project implementation.

79. Installation of barrier tapes at deep excavations and detours including warning signage such as 'Caution Rock fall' is vital for public safety.

2.17 Traffic Management

80. Road traffic signals for public safety and traffic control has been provided. However, traffic signs need to follow DOWs specifications on road safety signage at field works guide.

81. The Traffic controllers are stationed in areas where civil works are in progress to control the

flow of the passing traffic and the pedestrians. Almost all of the traffic controllers are females.



Photograph 9. Female traffic controller stationed after civil works in progress

2.18 Prevention of HIV/AIDS and STDs

82.HIV and AIDS is an important parameter to be monitored as part of the social and environment component during the project implementation. When there is a raise in socio-economic activity there is a rise in the risk of contracting HIV& AIDS. Hence, HIV/AIDS awareness is very important for minimising the risk.

83.The prevention of HIV and AIDS is an important component of the project to stop and prevent its prevalence. From January-June 2019, HIV and AIDs awareness has been carried out at six different locations along the project road corridor. Several activities were carried out with good number of attendees both workers and the local communities.

84.Except for the first quarter of 2019, the second quarter has all HIV/AIDS datum/statistics summarised in Table 6, Table 7 and Table 8 below.

Table 6. Awareness Material Used from January-June 2019

Month	Testing Kits	Posters Displayed	Pamphlets	Male Condoms	Female Condoms
January	NA	NA	NA	NA	NA
February	NA	NA	NA	NA	NA
March	NA	NA	NA	NA	NA
April	631	20	572	300	7
May	100	20	200	150	5
June	100	10	150	100	10
Total	831	50	922	550	22
Average	139	8	154	92	4
Percentage	35%	2%	39%	23%	1%

Table 7. Attendees from January-June, 2019

Month	Males	Females	CHEC Employees	Total
January	80	50	20	150
February	50	26	20	96
March	45	15	20	75
April	65	40	20	125
May	50	45	20	69
June	63	45	20	128
Total	353	221	120	643
Average	59	37	20	107
Percentage	51%	32%	17%	100%

Table 8. Attendees to Service Provided from January-June, 2019

Month	Pre-test Counselling	Testing	Post-test Counselling	Person Tested Positive	Treatment Referrals
January	NA	NA	NA	NA	NA
February	NA	NA	NA	NA	NA
March	NA	NA	NA	NA	NA
April	8 Male	8 Male	8 Male	0	0
May	5 Male	5 Male	5 Male	0	0
June	0	0	0	0	0
Total	13	13	13	0	0
Average	2	2	2	0	0
Percentage	34%	33%	33%		

2.19 Existing Infrastructure Issues

85.District Sectioned Reassessment Team (DSRT) refers to a team that is set up by the District Administration Office to handle the outstanding payments done by the former Member of Parliament. DSRT has already executed payment the last reporting period (month of Feb 2019) and as such, the finalised copy of DSRTs work on payment as anticipated to be handed to HRMG for filing and referencing has not reached HRMG as yet. The DSRT reliably informed HRMG this reporting period that they are still in the process of finalising the report and hence would forward a copy once completed.

86.HRMG has reaffirmed its stand on Construction related Grievances to be handled by Contractor by having a brief on the roadside with its CROs and Contractor's PRO.



Photograph 10. Shows PRO's being informed of HRMGs stand on grievances

87. At Ch.27+ 850 there is a Physical Cultural Resource or Sacred Site that has Religious Significance. There was a Missionary who was killed by the locals there before independence. The missionary was killed by the locals on the Left-Hand Side (LHS) of the Road and a monument is placed on the (Right Hand Side) RHS of the road for that Missionary to be remembered.

88. The National Cultural Property Preservation Act 1965 covers the preservation and protection of objects of cultural or historical importance. This act is administered by the National Museum and Art Gallery.

89. Proposed facelift will be given to the current monument for conservation.



Photograph 11. Physical Cultural Resource that has Religious Significance to be conserved

2.20 Environmental Related Grievances

90. Grievances on the fumes from the bitumen plant's chimney. The fumes from the bitumen have caused the nearby locals to complain of the very strong smell refer to **Photograph 3** above.

91. Other grievances are construction related. Construction related grievances are to be handled by the contractor.

3. Conclusions and Recommendations

3.1 Conclusions

92. The main conclusions arising from the environmental monitoring activities during the review period are:

- i. Contractor have improved very much on compliance on environmental parameters.
- ii. The contractor is commended for acting upon the NOVs that was issued on 25 February, 2019.
- iii. Contractor is commended for continuous monitoring of HIV and AIDS awareness along the project site and have come up with improved statistical datum for HIV/AIDS awareness activities.
- iv. The provision of geo-tagged photographs could provide the monitoring activity with time sensitive and verifiable evidence which the contractor's EO does not have at the moment.
- v. Submission of management plans and monthly reports must be submitted through to the office of the Residential Engineer.
- vi. At Ch.27+ 850 there is a Physical Cultural Resource or Sacred Site that has Religious Significance that need to be conserved.

93. Based on the above conclusions of internal monitoring, it is recommended that further actions are pursued as outlined in the next section.

3.2 Recommended Actions

94. The recommendations, implementation timelines and other relevant information for action by the contractor are provided in Table 9 below.

Table 9. Recommendations for Implementation and Corrective Action.

Non-Compliance	Recommendations for Implementation	Corrective Actions Plan	In-Charge	Date of Implementation
Absence of waste treatment facility at batching plant site	Install at least two filtering ponds/sediment traps to treat	Contractor to install wastewater treatment plant.	CHEC	Immediate

	wastewater before letting it out into natural streams.			
Absence of job specific PPEs for workers at the batching and crushing plant area.	Review with the contractor the need for job specific PPEs.	For contractor to prioritize PPEs in project implementation.	CHEC	Immediate
Absence of soil erosion management and sediment traps to contain spoils being transported to water bodies and vegetation cover.	Contractor to implement immediate establishment of sediment traps and tree and grass seeding or planting.	Contractor to provide action plan with detailed activities.	CHEC	Immediate
Absence of registered security personnel and proper fencing at explosive storage site.	Explosive storage area to be guarded by registered security personnel and should be steel fenced.	Issue an NOV to the contractor to comply.	CHEC & HRMG	Immediate
	PSC and contractor to work together to conserve the scared site at 27+850.	PSC and Contractor's Surveyor to do realignment and conserve this monument.	PSC and CHEC	

Appendices

Appendix 1: List of References

1. Initial Environmental Examination for Gewa-Gembogl Road section (April 2016).
2. Sumburu Quarry Management Plans
3. Internal Monthly HRMG Environmental and Social Safeguards Reports
4. Contractor's Monthly Environmental Reports

Appendix 2: List of People Interviewed

1. Mr. Paul Nombri, Manager, Technical Services, HRMG
2. Mr. Steven Sukot, National Environmental Specialist PSC
3. Mr. Steven Koliye National Resettlement Specialist
4. Mr. Jerry Kevin Senior Social Safeguards Officer, HRMG
5. Miss. Evelyn Kuk – CHEC Environmental Officer
6. Mr. Elizah Philip- CHEC Safety Officer
7. Mr. Paul Komba-Male for HRMG
8. Mrs. Elizabeth Nulai- Female CROs for HRMG