### ORIGINAL

# **Building Design Authority (P) Ltd**



*in joint Venture with* B.N. Consultancy Pvt. Ltd and PLUSH Engineering & Architects (P) Ltd Kathmandu.

**Semi-Annual Environmental Monitoring** 

Report (July-December 2018)

Regional Urban Development Project (RUDP) Project Implementation Unit Biratnagar, Nepal ADB Loan 47252- NEP



*January, 2019* Biratnagar Metropolitan City (BMC), Nepal

#### **Table of Contents**

I.	INTRODUCTION	1
II.	DESCRIPTION OF SUB PROJECT	2
a.	Environmental category of Subprojects	8
b.	Project Safeguard Team	8
C.	Overall project and sub project progress and status	9
III. ENV	COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY /IRONMENTAL REQUIREMENTS	.11
IV.	COMPLIANCE STATUS WITH ENVIRONMENTAL MANAGEMENT PLAN	.11
a. C	Compliance Status	.11
b. S	Summary of Environmental Monitoring Activities for the Reporting Period	.13
c. C	compliance Status with the Environmental Management and Monitoring Plans	.15
V. PRO	APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE OJECT	. 16
VI.	MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS	.17
VI.C	GRIEVANCE REDRESS MECHANISM	.18
VII.	COMPLAINTS RECEIVED DURING THE REPORTING PERIOD	.19
VIII	. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS	.19
Anr	nex 1: Photograph	.21
Env	ironmental Monitoring Checklist Format	.25
Mee	eting of Safeguard Desk	.30
Wat	ter Quality Test Reports	.33
Aar	eement copy of contractor and sand and aggregate supplier	.38

#### ABBREVIATIONS

///////////////////////////////////////		
ADB	=	Asian Development Bank
AP	=	Affected Persons
BMC	=	Biratnagar Metropolitan City
BS	=	Bikram Sambat
CAO	=	Chief Administration Officer
CDP	=	community development program
CRIPPF	=	Combined Resettlement and Indigenous Planning Framework
DSC	=	Design and Supervision Consultant
DUDBC	=	Department of Urban Development and Building construction
DWSS	=	Department of Water Supply and Sanitation
EMP	=	Environmental Monitoring Plan
EPR	=	Environment Protection Regulation
IEE	=	Initial Environmental Examination
GoN	=	Government of Nepal
GRC	=	Grievance Redress Committee
ISWM	=	Integrated Solid Waste Management
MoUD	=	Ministry of Urban Development
MPMC	=	Municipal Project Management Committee
NRs	=	Nepalese Rupees
NGO	=	Non-Government Organization
PCO	=	project coordination office
PIU	=	project implementation unit
PPE	=	Personal Protection Equipment
PPTA	=	Project Preparatory Technical Assistance
ROW	=	right of way
RP	=	resettlement plan
R&R	=	resettlement & rehabilitation
RUDP	=	regional urban development project
SDS	=	social development specialist
STIUEIP	=	Secondary Town Integrated Urban Environmental Improvement Project
SPS	=	Safeguard Policy Statement
SD	=	Safeguard Desk

#### WEIGHTS AND MEASURES

Ha.	=	Hectare
Kg.	=	Kilogram
m.	=	meter
sqft.	=	Square fit
sqm.	=	Square meter
1 ha	=	1.47 bigha

#### I. INTRODUCTION

- 1. The Regional Urban Development Project (RUDP) is designed with the aim to improve livability and urban services in the municipalities of Godawari, Bhimdatta, Biratnagar, Birgunj, Dhangadhi, Shuklaphanta, Nepalgunj and Siddharthanagar in the Terai Region of Nepal through planning, infrastructure investments, and institutional strengthening. The eight cities have high population growth rates, are severely lacking investment, and are experiencing a high level of environmental degradation. The project is also in line with ADB's Nepal Country Partnership Strategy (2013-2017), which supports the government's development objective of accelerated, sustainable, and inclusive economic growth, and with the Asian Development Bank's (ADB) water and urban operational plans.
- Biratnagar is one of the eight municipal towns included in the RUDP. The subcomponent of the RUDP covers the construction and improvement of sewerage, drainage and roads and design of Integrated Solid Waste Management System (ISWMS) for Biratnagar Municipality. Building Design Authority (P) Ltd (Nepal), B.N. Consultancy Pvt.Itd and PLUS Engineers & Architects (P) Ltd Kathmandu as a design and supervision consultant (DSC) and have entered for a Contract of Consulting Services with Regional Urban Development Project (RUDP), Project Implementation Unit (PIU), Biratnagar Metropolitan City (BMC) on 28th August 2017 and design and supervision were commencement on September 6, 2017.
- 3 RUDP, the Department of Urban Development and Building Construction (DUDBC), under the Ministry of Urban Development(MoUD) through the Government of Nepal (GoN) has received the loan from ADB.
- 4 In line with ADB's Strategy 2020 and based on Nepal's fundamental long term needs and on the GoN's priority, the ADB is continuing to support the Government in(i) improving urban infrastructure; improving access to water supply and sanitation (ii) supporting urban environmental improvement(iii) strengthening the operation and management skills of local governments. The RUDP will forward to promote healthy cities by creating healthier urban environments and was formulated under the PPTA 2010. *Figure 1* presented below shows project location of BMC.
- 5 The 3<sup>rd</sup> Semi-annual Environmental Monitoring Report (EMR) of RUDP, Biratnagar has been prepared on the basis of results of the regular environmental monitoring activities undertaken by the Contractor during the reporting period from July to December 2018 as required by the Environmental Management Plan (EMP).
- 6 Similarly regular monitoring visits by DSC Environmental Expert were made and standard environmental monitoring checklist was used to note the status of EMP compliance.

Figure 1: Project location of RUDP



#### II. DESCRIPTION OF SUB PROJECT

7 Since 2012 STIUEIP is implementing (i) drainage and sanitation including wastewater treatment plants (facultative and anaerobic pond), public and school toilets, and storm water drainage; and (ii) roads and lanes including upgrading of roads, footpaths, side drain and walkways in BMC. In most of the sections the drainage construction and earthen works of the roads has been completed but pavement improvements could not be done under STIUEIP due to cost overrun.

8 The additional works under RUDP are expected to complement STIUEIP and lead to increased efficiencies, greater improvement in service delivery, and higher impact on the livelihood outcomes of inhabitants of BMC. The pre-project construction activities, including land acquisition have been almost completed by the RUDP. In many cases, RUDP is working on the

same alignment as STIUEIP. STIUEIP installed the drain and RUDP will rehabilitate the road and construct a footpath. The table 1 provides a summary of the proposed alignments where STIUEIP is also working to show synergies between the two projects. The shaded rows denote new/additional alignments under RUDP.

11 Components	Description of the Activities	Quantification of major construction items/ activities	Location
Drainage and			Location
-		1	
Sewerage network	Sewerage pipe supply and installation; manhole; sewer inlet; house connections	Installation of 20.082 km sewerage pipeline; construction of 685 manholes; 1,010 sewer inlets and 3,784 house connections	At the central line of the existing roads within clear road width
Storm water	RCC drains	Construction of Chyangbari	Within the clear width of
drainage		Nala = 652.89 m	existing Nala
Roads and La	nes		
Road	Asphalt	Road improvements with	Existing roads and footpaths
improvements	concrete, footpath	asphalt concrete: 73.86 km,	
	and roadside drains	including footpaths and	
		roadside drains: 26.05km	
Integrated Soli	d Waste Management (IS	SWM)	
Design of		Preliminary design, detail	Municipality proposed
ISWN		design and final design	Dangraha site is not finalized till date
Street Light			
Streetlight	Supply and installation	Solar streetlights, including	Existing roads and footpaths
installation	of solar streetlights	pole, battery and all solar system = 1.0 km	

# Table 1: Summary of Project Components in Regional Urban Development ProjectBiratnagar

9 Total length of the proposed sewerage system will be 20.082 kilometers (kms). Similarly, 685 manholes are proposed in all sewerage sub systems. As indicated in design and drawings there will be 4 types of trunk and secondary sewerage system. Overall layout plan of the sewerage system as proposed for RUDP is given in *Figure 2*.



Figure 2: Sewerage Layout Plan

10 A total of 652.8m storm water drainage is proposed under the RUDP. *Figure 3* presented below shows overall storm water drainage plan for BMC. All planned drainage system has already been constructed by STIEUIP except for 652.89 m which passes through the existing Chyangbari Nala (Sagarmatha tole to Sukrabare Hatiya). The right side of blue shaded area in the *Figure 3* is proposed under the RUDP. The existing ROW of the drainage will be sufficient to improve the proposed section. There are no registered private lands, tenants and sharecroppers or seasonal encroachers at either site of the proposed drain.





11 A total of 74 km road improvement is proposed in the RUDP. The roads included for improvements are those roads which were damaged due to pipeline installation, storm drain construction and other project related works of STIUEIP and couldn't be restored due to unavailability of funds. The overall road network layout plan is shown in *Figure 4a and 4b*.

Figure 4a: Overall Layout Plan of Road Improvement Networks (Northern part/main road)





#### *Figure 4b*: Overall Layout Plan of Road Improvement Networks (Southern part/rani area)

Page | 7

#### SALIENT FEATURES OF CONTRACT PACKAGE - RUDP/ICB/BRT/2

	General Features					
Name of Project	Regional Urban Development Project(RUDP)					
	Government of Nepal, Ministry of Urban Development					
Executing Agency	Department of Urban Development and Building					
	Construction (DUDBC)					
Implementing Agency	Biratnagar Metropolitan City, Biratnagar					
Funded By	Asian Development Bank & Government of Nepal					
Components	Construction and Completion of Sewerage, Drainage, Road, Footpath and Road furniture works					
Contract No.	RUDP/ICB/BRT/2					
Location	Biratnagar Metropolitan City, Biratnagar					
Consultant	Building Design Authority (P) LTD in Joint Venture With B.N. consultanc Pvt and PLUS Engineers and Architects (P) Ltd Kathmandu.					
Contractor	ZHONGHENG Construction Group International Engineering co Ltd. Beijing, China.					
Date of Commencement	2 <sup>nd</sup> November2017					
Completion Date	1 <sup>st</sup> November 2019					
Contract Amount including PS and VAT	NRs. 2,611,092,249.63					
Physical Progress	Construction works are under progress. Overall physical progress till December 2018 is 39.47%					

#### a. Environmental category of Subprojects

12 The project is environmental improvement project, and mainly constitutes works on sewerage/ drainage improvement works Road works and design for Integrated Solid Waste Management in BMC besides others. As per ADB Safeguard Policy Statement (SPS), 2009 on Environmental Assessment requirements, this project is classified as Environment Category B.

**13** According to GoN's Environmental Protection Rules, 2054 BS, schedule -1, IEE is required for Operations of Sewerage Schemes under Schedule 1.h.2.e (Pertaining to Rule 3). IEE report under STIUEIP was approved by MoUD on May 14, 2013. Also an IEE report on additional Sewerage, Drainage and Roads Improvement Works was prepared by RUDP, Biratnagar Sub-Metropolitan City on February 2017.

14 The Inception report on Integrated Solid Waste Management(ISWM) has already been prepared and submitted to PIU. Similarly Stakeholder's analysis, communication strategy and consultation plan for ISWM also has been submitted.

#### b. Project Safeguard Team

15 A Safeguard Desk (SD) of 4 members has already been formed to monitor the overall project's safeguard issues. The details of the safeguard team with their respective roles is as follows:

Name	Designation/O	Email	Contact	Roles
	ffice	Address	Number	
PIU				
Mr. Bharat	Project	stiueip.brt@	9852026869	Overall management and
Kumar	Manager/	gmail.com		monitoring of the project
Neupane	Biratnagar			activities
	Metropolitan			
	City			
Mr. Punam	Social	<u>punamkdah</u>	9852022729	Monitoring the Issues of
Kumar	Safeguard	<u>al@yahoo.c</u>		social safeguard, GESI and
Dahal	Officer/Biratn	om		resettlement of the project,
	agar			check and monitoring the
	Metropolitan			safeguard activities of
	City			contractor and consultant
Consultan				
ts				
Mr.	Social	<u>pbs026@g</u>	9841329719	Monitoring the Issues of
Prakash	Safequard	mail.com		social safeguard, GESI and
Bhakta	Expert/			resettlement of the project,
Shrestha				Prepare Social Monitoring
	DSC			Report and resettlement plan

				and check and monitor the safeguard activities of the contractor
Mr.	Environmenta	<u>phuyaldwari</u>	9851086137	Monitoring the Issues of
Dwarika	I Safeguard	ka@gmail.c		environmental safeguard of
Phuyal	Expert/	om		the project,
				Prepare Environmental
	DSC			Monitoring Report(EMR)
				check and monitor the
				safeguard activities of the
				contractor.

#### c. Overall project and sub project progress and status

16 The Overall Project Progress till the month of December is <u>39.47%</u>. There are altogether 548 labours employed in construction, Among those 147 are skilled labour. The progress till December, 2018 is as shown in table:

S No	Sub Project Components	Progress % (as end of December)		
1	Road and Lane Rehabilitation with Asphalt	24.68%		
2	Sewer Line	52.80%		
3	Storm Drain	97.44%		
4	Road Side Drain	70.86%		
5	Design of Integrated Solid Waste Management (ISWM)	Inception Report as well as Stakeholder's Analysis, Communication Strategy and Consultation Plan has already been submitted. Due to Social Problem, Progress on design has been hindered.		
6	Overall Physical Progress	39.47%.		

The physical progress till December, 2018

#### 1.Drainage and sanitation

#### i) Sewer Lines

17 Detailed Surveying works for construction has been completed after identifying the all sewer lines and construction work is under progress. The total length of sewer lines is 20.08Km. Laying of RCC Hume pipe as well as HDPE has been started to accelerate the progress. Till this reporting period more than 50% of laying the sewer lines has been completed.

#### ii) Storm Water Drainage

18 Total length of 652.89m. storm water drainage was proposed. Almost the storm water drainage construction has been completed.

#### 2. Road and Lanes

19 Similarly, Construction and upgrading of roads and lanes with road side drains are ongoing. The total length of proposed road sections is 73.86 Km. Further the construction of road side drain in almost Road Sections are under progress. Similarly Pavement works (laying of base and sub base with asphalt concrete) in those road sections are also under progress. The total length of road side drain is 26.05 Km, of which about 70% has been completed.

#### 3. Street Light

20 Supply and installation of solar street light including pole, battery is in the contract of length 1.0km not yet sorted.

#### 4. Integrated Solid West Management

21 The inception report as well as Stakeholder's Analysis, Communication Strategy and Consultation Plan has been already submitted to the PIU. Due to unclear/uncertain of ISWM site (Demarcation of land boundary) The Engineer cannot proceed the further work of design as per TOR.

Package	Component	Contract	Status of	If On-going Construction		
Number	Number s/List S		Implementation	Physical	Expected	
	of Works	(specify if	(Preliminary	Progress	Completion	
		under	Design/Detailed		Date	
		bidding or	Design/On-going			
		contract	Construction/Co			
		awarded)	mpleted/O&M)			
	Sewer	Contract	On-going	Construction under	1 <sup>st</sup> November	
	lines	awarded	Construction	progress (52.8%)	2019	
	Storm	Contract	About to	Construction work	1 <sup>st</sup> November	
	Water	awarded	complete	under progress	2019	
	Drainage		Construction	(97.44%).		
	Roads and	Contract	On-going	Road pavement	1 <sup>st</sup> November	
	Lanes	awarded	Construction	with asphalt	2019	
				concreting under		
				progress (24.68%)		
	Street light	Contract	Not yet	-		
		awarded			1 <sup>st</sup> Nov 2019	
	ISWM	Contract	Not yet,	-	12 months from	
		awarded	Inception report		Commencement	
			submitted		Date for ISWM.	

#### Description of subprojects (package wise) and status of implementation:

**Regional Urban Development project (RUDP)** 

#### III. COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

#### **Compliance Status**

Packa ge Numbe r	Sub project name	Statutory Environmental Requirements	Status of Complia nce	Action Required	Specific Condition that will require environmenta I monitoring as per Environmenta I Clearance, Consent/Per mit to establish
RUD P/ICB /BRT/ 2	Sewerage and Drainage Networks, and Road & Lane Improvem ent	As per ADB guidelines on Environmental Assessment requirements, this project is classified as Environment Category B, and therefore Initial Environmental Examination (IEE) has to be done. GoN's Environmental Protection Regulations (1997) also stipulate that an IEE is necessary. The project is environmental improvement project, and mainly constitutes works on sewerage/ drainage improvement works in BMC besides others. According to Environmental Protection Regulation, 2054 BS, IEE is required for Operations of Sewerage Schemes under Schedule 1 (Pertaining to Rule 3).	Compli ed		

#### IV. COMPLIANCE STATUS WITH ENVIRONMENTAL MANAGEMENT PLAN

#### a. Compliance Status

The IEE report and Site Specific EMP as a part of Contract document have already been approved. The monitoring of sub project components under implementation has been carried out. The contractor has been mobilized since 2<sup>nd</sup> November, 2017 and construction work is under progress.

#### Compliance Status of IEE and EMP:

**Regional Urban Development project (RUDP)** 

Package	Final IEE based or	n Detailed D	esign		Site-specific	Remarks
Number	Not yet due (detailed design not yet completed)	Submitt ed to ADB (Provide Date of Submissi on)	Disclosed on project website (Provide Link)	Final IEE provided to Contracto r/s (Yes/No)	EMP (or Construction EMP) approved by Project Director?(Yes/ No	
RUDP/IC B/BRT/2	Final IEE approved on May 14, 2013 IEE on additional Sewer, Drain and Roads improvement has already been prepared by RUDP/Biratna gar on Feb., 2017	Yes	https://www .adb.org// <u>36188-023-</u> <u>iee-07</u> http://www. biratnagar mun.gov.n p/en/conte nt/regional- urban- developme nt- projectrudp	Yes	Yes	

23 The internal environmental monitoring activity focuses on the current status of implementation of the environmental safeguard measures, effectiveness in implementation and provision of feedbacks and suggestions for the full compliance with ADB Environmental Safeguard Policy and GoN rules and regulations.

The EMR therefore is necessary to know the status of safeguard measures implementation and to recommend the corrective action for full compliance of safeguard measures.

24 For the contract package there is a provision of Accident Prevention Officer as a contractor's person for environmental safeguard. The contractor has appointed a safety officer to look after environment, health and safety issues.

#### b. Summary of Environmental Monitoring Activities for the Reporting Period

The monitoring activities during this reporting period along with potential environmental impacts, mitigation measures, monitoring parameters, locations with responsible agencies is shown in the table below.

Table 2 Environmental Monitoring Activities

Impacts	Mitigation Measures	Parameters monitored	Method of monitoring	Location of Monitoring	Date of monitoring conducted	Monitored by
Design Phase						
Pre -construction phase						
No such impact is anticipated as the works involve only about review of detailed design, site investigation, detailed survey etc.						
Construction Phase						
Deterioration of air quality, increase in dust/suspended particulate matters	-Sprinkling of water on road surface and across diversion two to three times a day or as required -Cover stockpiled construction materials with tarpulin -Provision of dust masks to	Dust emission Frequency of Sprinkling of water	Observati on	Construction Site	Dec-01, 02 and 03, 2018	Environm ental Safeguard Expert

Page | 13

	workers	Use of dust				
		preventive		Construction		
		mask by	Observati	Site		
		workers	on			
Inconvenience to	-Plan transportation route	Transportation		Construction	Dec-01,	Environm
pedestrians and	-Inform public about the nature	Plan and	Observati	Site	02 and	ental
vehicles	and duration of construction	schedule of	on		03, 2018	Safeguard
	-Do not block public road and	working				Expert
Issue of	pedestrian footpath					
management of	-Provide diversion with proper					
excavated surplus	traffic sign boards					
	Place precast slab cover					
Insufficient number	immediately as early as					
of labours	possible on completion of					
	construction by cleaning the	Proper				
	drain bed of side drain	diversion		Construction		
	Immediate	Traffic signs	Observati	Site		
	back fill of sewer line/side drain	and barricades	on			
	after laying of sewer lines and constructing road side or/and	Road side drain				
	storm drain,	cover Proper				
	storm drain,	excess surplus management				
	-Minimize the period of	папауеттетт				
	construction by increasing					
	workers.	No. of labours				
	WORKERS.	NO. OF IADOUTS				
Occupational Health	Implement a site Health and	Provision of	Observati	Construction	Dec-01,	Environm
and Safety Issues	Safety Plan	PPE on site	on	Site	02 and	ental
Accidents and	-Provide adequate Personnel				03, 2018	Safeguard
Injuries	Protective Equipment (PPE) to					Expert
-	workers (helmets, boots, gloves					

Regional Urban Development project (RUDP)

Issues of Labour camp establishment, waste management and Water Supply and Sanitation	and masks etc.) to workers Provision of light and ventilation with safe and proper drinking water facilities, toilet and collection and proper management of solid waste and liquid wastes including good living environment	Quality and quantity of drinking water, type of toilet and waste collection and management facilities		
Operation Phase				
Construction phase under progress				

#### c. Compliance Status with the Environmental Management and Monitoring Plans Overall Compliance with EMP

Sub-Project Name	EMP Part of Contract Documents (Y/N)	EMP Being Implemented (Y/N)	Status of Implementation(Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required
Sewerage and Drainage Networks, Road & Lane Improvement	Y	Y	Satisfactory	

#### V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

25 This Environmental Monitoring Report has been prepared based on Environmental Management Plan (EMP) and observations made during monitoring visits by DSC Environmental Specialist. Contractor submits regularly monthly report along with Site-specific Environmental Monitoring Checklist to DSC. The DSC will check and verify the reports whether or not the EMP complied. The contractor nodal person (Accident Prevention Officer) who is involved in looking over health, safety and environmental issues and fills monitoring checklist.

A copy of the sample site specific monitoring checklist is attached in Annex 1.

Besides this, other major activities undertaken by the Environmental Specialist in ensuring environmental compliance and monitoring are listed as follows;

**Desk review:** National policies and legislations relevant to the projects sub-components were reviewed timely. Site specific Environmental Monitoring Checklist was prepared and used to note the status of project activities and EMP compliance.

**Field Work:** Potential environmental impacts identified by the contractors and the suggested mitigation measures' compliance or non-compliance mentioned in the Site-specific Monitoring Checklist was validated through field observations every month by the DSC.

**Interaction and consultation with the local community and other stakeholders:** A Safeguard Desk was established in the project for effective planning, monitoring and follow up of all environmental, social development/ safeguard issues. It was started as a functional mechanism consisting of PIU and DSC. The desk consists of the PM and Social Safeguard Officer of PIU, Environmental and Social Safeguard Experts of DSC.

The desk will review, update and discuss the progress, issues, constraints and challenges of social and environmental aspects, Community Development Program and implementation of resettlement plan as well as monitoring of social development activities.

The Environmental Specialist of DSC also has made regular field monitoring visits to the project site, interact with the Contractor and verify that the mitigation activities are being carried out as required.

Labours and other Work-force are questioned each time during field visit about the environmental safeguard measures they are taking and materials being provided by the contractor along with direct observation of the work force camps for accommodation and the quality of water supply, hygiene and sanitation.

DSC prepares Semi-annual environmental monitoring reports and submits to PIU, PMC and ADB after reviewing the Contractor's reports.

#### VI. MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS

26 Dust Pollution was noticed as a major problem in the initial stage of improvement of roads and lanes because of storage of construction materials like sub-base course and base course, other construction materials and excavated spoilage along roadside for a long time. Movement of vehicles over those materials and unpaved road surface within project area cause trouble of dust emission and air pollution.

27 To minimize it, the contractor is instructed to store debris and materials properly when stored along roadside with the intention of reuse of the same immediately in filling and laying as road surface course and compacting with the use of sufficient water. Water spray should be continued at least two to three or more during the day as required.

28 The sprinkling of water has been done on access road surface and construction sites daily, however it is not sufficient. Therefore Contractor requested to increase the frequency of sprinkling water as required. The chances of emission of dust will be more during winter, dry and windy day.

There are no data with the Contractor on monitoring of environmental impacts on surrounding (ambient air, water quality and noise levels), which is reported to have not been performed.

Sign boards with barricades were installed at construction sites, however these are not sufficient. Therefore the contractor is requested to install adequate signboards with safety information, barricade and caution tape for demarcation of project site and its enclosure. Safeguard tools like helmets, gloves, boots and masks have not been adequately used by the labours.

30 Constructed road side drains were covered with cover slab, however in few sections along the road drains were left open, where there may be problem for pedestrian and may chance of falling of pedestrian into drain. Therefore, contractor instructed to cover the open drain after cleaning drain bed immediately with slab cover.

31 Hot mix or Asphalt plant is located in the Rani area away from the population centres. The contractor should take precautions to reduce the level of noise, vibration and dust emissions. No bituminous materials should be discharged into drains, nearby vegetation and property during spray over road surface. Place and compact hot asphalt mix immediately after spraying the prime and tack coat. The plant is located at 6.0 km for from DSC office, Biratnagar.

32 The crusher plant is not in operation in construction site. Contractor has made agreement with sand and aggregate supplier to supply the sand and aggregate as required for site. The crusher plant is located at around 42 km north-east of Biratnagar at a place called Chisyang. The agreement between supplier and contractor is attached in annex-2 (4)

33 Water quality of existing wells at DDC yard and labour camp, Madhumara yard, Lab office and Koshi Yard and labour camp were carried out on 9<sup>th</sup> of October 2018 and the results found satisfactory. However, the level of Mnganese in Madhumara yard is little higher and at lab office is more higher than NDWQS. Refer the water quality test reports in Annnex-2 (3)

#### VI.GRIEVANCE REDRESS MECHANISM

34 The subproject will utilize the GRM proposed in CRIPPF of RUDP to hear grievances and concerns raised from affected persons and project beneficiaries during construction of the project.

35 A Local/Metropolitan level grievance redresses committee (GRC) comprising 7 members is formed to receive grievances filed in relation to RUDP implementation in BMC. The Mayor of BMC is the chairperson of the GRC with CAO of BMC and Project Manager as member and chief, social development of PIU as member secretary of the committee. This committee has been effectively addressing grievances and concerns raised by the concerned stakeholders including project beneficiaries. The GRC composition is presented in the table 3 below.

Name	Designation	Portfolio
Mr. BhimPrasad Parajuli	Mayor, Biratnagar Metropolitan City Office	Chairperson
Ms. Indira Karki	Deputy mayor, Metropolitan City Office	Member
Mr. Pradip Kumar Niraula	CAO, Biratnagar Metropolitan City Office	Member
Er. Bharat Kumar Neupane	Project Manager, RUDP,PIU, Biratnagar	Member
Er. Prakash Chaudhary	Project Engineer/ PIU	Member
Er. Ghanendra Katuwal	Project Engineer/ PIU	Member
Mr. Punam Kumar Dahal	Chief; So	Member Secretary
	cial Development/ PIU	

#### Table 3: Composition of GRC for RUDP

During this reporting period the GRC meeting has not been held because of not appearing any serious grievances.

After the effectiveness of the RUDP in BMC, the structure of the committee will be reviewed and revised in line with the GRC structure and mechanism prescribed in combined resettlement and indigenous people planning framework (CRIPPF) of the project. The CRIPPF has provision to form GRC at the municipal level with representation from affected persons/beneficiaries.The Grievance redresses committee (GRC) concerned representatives of affected persons with one male and one female (a representative of indigenous people, in case of indigenous peoples related issues), will be invited in the meeting. The GRC will meet as needed to determine the merit of each grievance, and resolve it within 7 days of receiving the complaint. The Committee thus appointed should be sanctioned by the municipal board. The responsibilities of the GRC at municipality will be: i. to conduct subproject level public awareness campaign regarding grievance redress mechanism of the project. The social safeguards expert of the DSC will support the GRC by preparing and providing information/awareness material etc. to conduct the awareness campaign. The campaign will ensure participation of poor and vulnerable groups in the awareness campaign. The campaigns also cover information on entitlements policy provisions and their application; and ii. to hear complaints and grievances at local level. The local people can approach the committee with their grievances related to the project which

will be registered, categorized and discussed in the committee with the aim of amicable settlement. It is expected that the committee will provide an accessible forum for receiving and facilitating resolution grievances related to the project and grievances will be redressed within one week from the date of received complaints. The member of secretary of GRC committee will be representing as social safeguard focal person, and will be responsible for processing and placing all papers before the GRC, recording decisions, issuing minutes of the meetings and taking follow up action to see that formal orders are issued and the decisions carried out. Any unresolved or major issues at municipality level will be referred to the PCO level GRC for resolution. DSC social expert will be assisted to social safeguard focal person. Local/Municipality Level GRC mechanism chart in below figure 6 is shown detail process of Grievance redresses. 37. The unresolved or major issues forwarded by the BMC level GRC will be reviewed at PCO level GRC for final solution. Decision has to be made within 15 days of receipt of complaint at this level. The PCO level GRC shall refers the complaints registered at the PCO to the BMC level GRC for initial hearing within 7 days of registration. 38. Despite the project GRM, an aggrieved person shall have access to the country's legal system at any stage, and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM. 39. People who are, or may in the future be, adversely affected by the project and not satisfied with the established GRM may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operation department.

#### **VII. COMPLAINTS RECEIVED DURING THE REPORTING PERIOD**

36 Till November 2018 total 9 complaints were received and all were addressed accordingly.

#### **VIII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS**

- 37 The key issues of the project during this reporting period identified are as follows:
  - Dust emission and ambient air pollution
  - Use of PPEs, installation of sign boards, barricades and caution tape etc.
  - Management and dumping of excavated soil, installation of drain cover and construction materials.

38 These are the major environmental issues of the Project identified during this reporting period, the corrective actions recommended to be taken and the analysis of compliance are presented in Table below.

 Table 4. Analysis of the Compliance of Corrective Actions and Recommendations

SN	Key Issues	Corrective Actions Recommended to be taken	Responsibility	Analysis of Compliance
1.	Lack of proper and regular awareness to the labour and other staffs on use of PPEs. At fewer sites, negligence in use of PPEs including barricade, caution signs and signals was observed during construction.	Aware and orient to labours on PPE, health and safety issues and make it compulsory to use PPEs at the sites, supervise and monitor regularly Contractor enforced to place proper and sufficient, barricade, caution tape, sign boards at construction sites.	Contractor, DSC	Partially complied.
2	Dust emission and air pollution	Sprinkling of water has been carried out by contractor on road surfaces but not sufficient, Increase frequency of sprinkling water on construction sites and nearby other unpaved public roads used by transporting vehicles.	Contractor	Partially complied.
3	At few road sections, constructed side drains found open	Place immediately the drain cover slab in every completed drain sections	Contractor	Partly complied

# Annex 1: Photograph

#### Annex 1: Photographs



Photo 1: Safety Information board and Project information board in Precast yard



Photo 2: Site visit by ADB Mission



Photo 3: Road Side Drain Under construction



Photo 3: Asphalt pavement work under progress



Photo 5: Proposed site for Solid Waste Management at Dangraha

# Annex 2:

**Environmental Monitoring Checklist Format** 

#### 1. Environmental Monitoring Format Regional Urban Development Project (RUDP)/Biratnagar

Nameof Sub Project: RUDP/ Biratnagar

Contract Package: RUDP/ICB/BRT/02

Sub-project Component: Road Lanes Improvement/ Sewerage Drainage

Month:December,

2018

	Checklist	1	
S.No	Activity	Description/Present Status (Compliance/Partially Compliance/Non Compliance	Remarks/ Corrective actions for Non- Compliance
1	Training		Contractor organized 2day Awareness
1.1	Health, Safety and EMP trainings and awareness	Awareness training	Training on March 3 and 4, 2018
1.2	Others awareness and skill trainings	organised	Enforce contractor to aware labours on occupational health and safety and use of PPEs regularly .
2	Occupational health and safety	Yes	
2.1	Insurance for workers		
2.2	Personal Protective Equipment (PPE) provided tolabours and are	Yes (distributed to labour but partially used)	Enforce contractor to fully use of PPE
	using(helmet,facemasks,muffles,gloves,boots,jacke		Enforced to fully complied
	t,gogglesetc.)	Partially complied	
2.3	Public notification Safety and warning signs and informative signboards in working sites for work safety		Enforced to fully complied

Checklist

2.4	Use of barricades, caution tape and flag	Partially complied	
3	Camp site management		
3.1 3.2 3.3 3.4	Location First aid facilities available at camp and worksites Drinking water supply and sanitation facilities/ pit latrines Waste Disposal and Management facilities	Yes/Partly complied Yes No ( No waste management provision)	Enforce to place first aid kit with necessary medicines in working site Water quality test of DDC yard labour camp was performed and test found satisfactory within NDWQS 2062. Enforce to test water quality of other
5.4	Type of fuel used for cooking	LPG	camps prior to use for drinking Provide separate Bins to collect biodegradable and non bio-degradable waste.
4	Spoil and Construction material Management		-
4.1	Cut and fill balance maintained or not, Reuse of spoil materials	Reused in Backfilling compliance	Instructed contractor to use spoil in backfilling immediately and manage
4.2 4.3	Use of safe spoil disposal locations Disturbance to Pedestrian and traffic movement,	Installed drain cover	excess surplus safely at specified location
			Place immediately drain cover as drain construction completes
4.4	Use of private land and agreement with land owners	N/A	
5	Air,NoiseandWaterPollution	Water has been sprinkled to	Instructed to increase the frequency of
5.1	Dust emission and Noise pollution sites	minimize dust pollution but	sprinkling water
		not enough	Test the water quality of any new well
5.2	Water quality monitoring result and locations	water quality test performed	prior to use

# Regional Urban Development project (RUDP)

		by contractor	
5.3	Blockage of natural drainages,waterlogging,drain water discharge into farm land/risky areas	No	
<b>6</b> 6.1	Quarryingofconstructionmaterials and Plants Installment Quarry/borrow operation sites	No	
6.2	Crusher plant and Asphalt plant operation restoration	Yes	Asphalt plant is in Operation in Rani far from population centres. Care should be taken while sprinkling
			bitumen over road surface, prevent water drain, plants and property from contaminated by bitumen.
7	Impact/Disruption of Private properties		
7.1	Building structures	No	
7.2	Other utilities	No	
<b>8</b> 8.1 8.2	Impact/disruption of public infrastructures Irrigation canal Water supply pipe	No Disturbed and relocation of pipeline is on going	Contractor instructed to repair other remaining part immediately
8.3 8.4	Access road	No (Traffic diversion with sign board)	
8.5	Electric/Telephonepole Others	Poles within RoW	Relocation of poles also under progress

9	Sites for cultural and religious values		
	Cultural an dreligious sensitive spots (if any)	N/A	
9.1			
10	Forest and vegetation		
10.1	Number of trees removal	N/A	
10.2	No of tree plantation (Roadside)	N/A	
11	Accident cases and records	No cases of accident	
12	Employment to local people Men and women		Record of labour maintained
12.1 12.2	Child labour (if any)	Male-541 Female-7, No	
13	Establishment of Safeguard desk and meeting	Yes	Meetings have been conducted regularly.
14	Grievances from local people and addressed	Yes	GRM recorded and addressed

Meeting of Safeguard Desk

1		
		Meeting Minute: 9
	Regional Urban D	evelopment Project (RUDP), Biratnagar
	Meeting of Safeguard Desk (SD)	
	Venue: Project Implementation Uni	t (PIU), Biratnagar
	Date: December 3, 2018 (2075/08/	17)
	Participants:	Data has
	Er. Bharat Kumar Neupane	Project Manager, PIU/RUDP, Biratnagar
	Mr. Punam Kumar Dahal	Chief, social Development, PIU/RUDP, Biratnagar
	Mr. Prakash Bhakta Shrestha	Social Safeguard Expert, DSC/RUDP, Biratnagar
	Er. Dwarika Phuyal	Environmental Safeguard Expert DSC/RUDP, Biratnagar

Discussion and Decisions:

S. No.	Agenda	Discussion and Decisions
1	SD meeting	The 9 <sup>th</sup> . Meeting of SD, RUDP, Biratnagar held in RUDP/PIU office. There is no major complains has been registered in the desk.
2	Progress envisaged in labor camps as safeguard measures.	<ul> <li>Discussed on labor facilities in labor camp following facilities are found during labor camp site visit: <ul> <li>i) Sufficient available of drinking water service.</li> <li>ii) Toilet facilities and sanitation condition of the toilet at DDC precast yard found improved than that of previous monitoring visit.</li> <li>iii) The contractor instructed to provide toilet facilities with provision of sufficient water and soap for hand washing and provide separate toilet for gents and ladies.</li> <li>iv) There is first-aid box in precast yard, however the medicines are not sufficient, therefore contractor instructed to keep first-aid box with necessary medicines in labor camps and working sites for primary treatment in emergency cases</li> <li>v) No fire wood used.</li> <li>vi) Tube well water quality of DDC yard was tested and found satisfactory result. Contractor instructed to perform wate quality test of other wells of labour camp prior to use.</li> <li>vii) There were not provision of solid waste collection facilities in labour camps. Contractor therefore instructed to provide separate dust bins to collect bio-degradable and non biodegradable wastes in camps.</li> </ul> </li> </ul>

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Regional Urban Development project (RUDP)

Page L

1

4	Satisfactorily progress envisaged of implementation of safeguard measures including barricades and sign boards.	<ul> <li>i) Discussed over the dust emission during construction dust was emitting in few sites and sprinkling of water over dust prone area was not sufficient, contractor therefore instructed to increase the frequency of water sprinkling.</li> <li>ii) Discussed over the Use of personnel Protective Equipment like, helmet, bcots, glove, and jackets by labors was found partly compliance.</li> </ul>
		<ul> <li>The contractor instructed for full compliance.</li> <li>iii) Contractors has found aware on child right, and instruct strictly no use of child labor.</li> <li>iv) Contractor has provided the site and personnel safety tools, barricades and traffic signs but are not sufficient, therefore contractor instructed to provide sufficient barricades, caution tape, caution boards, traffic signs in the construction sites.</li> <li>v) The contractor has installed the project information board, the board was small and not visible to public.</li> </ul>
5	Encourage of Female employment.	<ul> <li>i) Contractor instructed to encourage employing as labor and skilled man power to local female.</li> <li>ii) Contractor instructed to manage separate camp and necessary facilities for female workers to encourage of employment.</li> </ul>
6	Others	<ul> <li>iii) Priority should be given to employ local labors.</li> <li>The overall safeguard compliance found partly satisfactory and contractor instructed to fully comply immediately.</li> </ul>

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Page | 32

Page 2

Regional Urban Development project (RUDP)

Water Quality Test Reports



Prepared by for and by Analysi Analysi Por Lab In-charge

P.O. Box 104, Email: nenscbrt@gmail.com /seamnmmaesc@gmail.com

**Regional Urban Development project (RUDP)** 

Type of Sample

Drinking Water



SN	Parameters	Units	WHO guideline	NDWQS(MCL)	Results	Method
1	рН	-	6.5 - 8.5	6.5 - 8.5	6.30 -	APHA-4500 H
2	Temperature	°C	12	-	29.1	Electrometri
3	Conductivity	μS/cm	-	1500	495	APHA-251
4	Turbidity	NTU	5	5(10)	0.00	APHA-2130
5	Colour	Hazen	15	5(15)	0.50	APHA-2120
6	Total dissolved solids	mg/L	1000	1000	330	APHA-2540
7	Fluoride as (F)	mg/L	1.5	- 0.5-1.5	0.69	APHA-2500
8	Ammonia as (NH <sub>4</sub> -N)	mg/L	1.5	1.5	<0.05	APHA-450
9	Nitrate as (NO <sub>3</sub> -N)	mg/L	50	50	<0.05	APHA-450
10	Chloride as (CI)	mg/L	250	250	58.98	APHA-2500
11	Total Hardness as (CaCO <sub>3</sub> )	mg/L	500	500	202	APHA-234
12	Calcium Hardness as (CaCO <sub>3</sub> )	mg/L		-	118.23	APHA-350
13	Total Alkalinity as (CaCO <sub>3</sub> )	mg/L	. 500	-	217.60	APHA-232
14	Iron (Fe)	mg/L	0.3	0.3(3)	0.10	APHA-3111
15	Manganese (Mn)	mg/L	0.1	0.2	0.36	APHA-3111
16	Arsenic (As)	mg/L	0.01	0.05	<0.005	APHA-3500-As
17	Total Coliform	CFU/100 ml	Nil	Nil	Nil /	APHA-921
18	Fecal Coliform	CFU/100 ml	Nil	Nil	· Nil	APHA-921

Date of Completion

09-10-2018

Comment: Except pH & Manganese, other obtained results are within the range of National Drinking Water Quality Standard (NDWQS). MCL= Maximum Concentration Limit

ferepart. IN fungo Prepared by Authorized signature Analyst Tox Lab In-charge

PO Roy 104 Fmail: nenscbrt@amail.com /seamnmmaesc@gmail.com

**Regional Urban Development project (RUDP)** 

				, Biratnagar-9, N	Fa	
					Date: 9 <sup>th</sup>	October 2018
		1	<u>est Rep</u>	<u>ort</u>		
Nam	e of the Client Aashish	Virman Sewa		Location		Biratnagar, Morang
Sam	pled by Client		0	Date of Coll	ection	28-09-2018
6	60 / D W					
Sour	rce of Sample Bore Wei	1		Date of Analysis		30-09-2018
Type	of Sample Drinking	Water		Date of Completion		09-10-2018
Sam	ple code No SN- 395	C (W) 2018	-	Client Code		Lab Office
SN	Parameters	Units	WHO guideline	NDWQS(MCL)	Results	Method
1	pH		6.5 - 8.5	6.5 - 8.5	6.49 -	APHA-4500
2	Temperature	°C		-	29.2	Electromet
3	Conductivity	μS/cm	-	1500	618	APHA-25
4	Turbidity	NTU	5	5(10)	>10 -	APHA-213
5	Colour	Hazen	15	5(15)	0.50	APHA-2120
6	Total dissolved solids	mg/L	1000	1000	412	APHA-2540
7	Fluoride as (F)	mg/L	1.5	. 0.5-1.5	0.64	APHA-2500
8	Ammonia as (NH <sub>4</sub> -N)	mg/L	1.5	1.5	<0.05	APHA-45
	Nitrate as (NO <sub>3</sub> -N)	mg/L	50	50	<0.05	APHA-45
) 10	Chloride as (Cl)	mg/L	250	250	43.98	APHA-2500
12	Total Hardness as (CaCO <sub>3</sub> )	mg/L	500	500	262	APHA-23
13	Calcium Hardness as (CaCO <sub>3</sub> )	mg/L	-	-	138.27	APHA-35
15	Total Alkalinity as (CaCO <sub>3</sub> )	mg/L	500	-	285.60	APHA-23
14	Manganese (Mn)	mg/L	0.3	0.3(3)	0.87	APHA-3111
14		mg/L	0.1	0.2	(1.14 .	APHA-3111
15			0.01	0.05	<0.005	APHA-3500-As
	Arsenic (As) Total Coliform	mg/L CFU/100 ml	· Nil	Nil	Nil	APHA-92

Regional Urban Development project (RUDP)

Page | 36



Date: 9th October 2018

# Test Report

Name of the Client	Aashish Nirman Sewa	Location	Biratnagar, Morang	
Sampled by	Client	Date of Collection	28-09-2018	
Source of Sample	Bore Well	Date of Analysis	30-09-2018	
Type of Sample	Drinking Water	Date of Completion	09-10-2018	
Sample code No	SN- 395 D (W) 2018	Client Code	Koshi Yard	

SN	- didinotoro	Units	WHO guideline	NDWQS(MCL)	Results	Method
1	рН	-	6.5 - 8.5	6.5 - 8.5	6.44	APHA-4500 H+
2	Temperature	°C			29.2	
3	Conductivity	<sup>ℓ</sup> μS/cm	-	1500	274	Electrometric
4	Turbidity	NTU	5			APHA-2510
5	Colour	Hazen	15	5(10)	0.00	APHA-2130B
6	Total dissolved solids	mg/L		5(15)	0.50	APHA-2120 C
7	Fluoride as (F)	-	1000	1000	190	APHA-2540 C
	and it is not set of the set of t	mg/L	1.5	0.5-1.5	0.25	APHA-2500 D
8	Ammonia as (NH <sub>4</sub> -N)	mg/L	1.5	1.5	< 0.05	APHA-4500
9	Nitrate as (NO <sub>3</sub> -N)	mg/L	50	50	<0.05	APHA-4500
10	Chloride as (CI)	mg/L	250	250	18	
11	Total Hardness as (CaCO <sub>3</sub> )	mg/L	500	500		APHA-2500 B
12	Calcium Hardness as (CaCO <sub>3</sub> )	mg/L				APHA-2340
13	Total Alkalinity as (CaCO <sub>3</sub> )	mg/L	500	-	68.13	APHA-3500
14	Iron (Fe)				132.60	APHA-2320
15	Manganese (Mn)	mg/L	0.3	0.3(3)	0.60	APHA-3111 8
		mg/L	0.1	0.2	0.20	APHA-3111 B
16	Arsenic (As)	mg/L	0.01	0.05	<0.005	APHA-3500-As B
17	Total Coliform	CFU/100 ml	Nil	Nil	Nil	
8	Fecal Coliform ent: Except pH & Iron, other obt	CFU/100 ml	Nil	Nil	Nil	APHA-9215 APHA-9215

Comment: Except pH & Iron, other obtained results are within the range of National Drinking Water Quality Standard (NDWQS).

MCL= Maximum Concentration Limit

[m]

Prepgred by

apart. Analyst

fermant. Authorized signature Lab In-charge For

P.O. Box 104. Email: nanscbrt@amail.com /seamnmmaesc@gmail.com

**Regional Urban Development project (RUDP)** 

Agreement copy of contractor and sand and aggregate supplier

लिखितम् जिल्ला चितवन भरतपुरमहानगरपालिका वार्ड न १० स्थित कार्यालय रहेको भोनहेड़ कन्स्ट्रक्सन ग्रुप ईन्टरनेशननल ईन्जिनियरिङ कलि हाल विराटनगरमहानगरपालिका साइट लाइ प्रथम पक्ष भनिनेछ र जिल्ला मोरङ्गलेटाड़ नगरपालिका वार्ड न १कृतिमान स्थित ओम श्री ऋशर उद्योग एण्ड सप्लायर्स प्रालि जसलाइ यस पछि दोश्रो पक्ष भनिएको छ विच पहिलो पक्षको जिम्मामा रहेको विराटनगरमाहानगरपालिकाको ठेक्का नम्बर RUDP/ICB/BRT/02 मित्र पर्ने Construction of sewerage,Drainage road, footpath and Road furniture works का लागि अवस्यक पर्ने निर्माण सामाग्री तपसिलमा उल्लेखित सर्तहरूको अधिनमा रही खरिद विक्री गर्नको लागि यो सम्भौता गरि एक एक प्रति लियौ दियौ।

तपशिलका शर्तहरू

ং दोश्रो पक्षले पहिलो पक्षलाई आवस्यक पर्ने Base, Sub base, Agggregate( 10 mm,16mm,20mm,Washed Sand,Plaster sand,Stone dust, and Asphalt Aggregate 16mm Down) Contract Specification अनुसार सप्लाई गर्नु पर्ने छ।

 Meaterial Supply गर्दा दोस्त्रो पक्षले पहिलो पक्षको RUDP/ICB/BRT/02 को सम्पुर्ण Contract Doocument अनुसारको को Specification को आधारमा प्रथम पक्षले निर्दिष्ट गरेको स्थानमा अनलोड गर्नु पर्ने छा

३. दोश्रो पक्षले माधि उल्लेखित Meaterial प्रथम पक्षलाई उपलब्ध गराउदा प्रथम पक्षले दिएको Gradation र Flakiness Index अनुसार उपलब्ध गराउनु पर्ने छ।

४. हरेक ४५ दिनको अन्यमा सप्लाइ गरिएको सामाग्रीको बिल दोश्रो पक्षले पहिलां पक्षलाइ जारि गर्नु पर्ने छ। बिल जारि गरेको १५ दिन भित्र प्रथम पक्षले प्रचलित वजार भाउ अनुसार भुक्तानि गर्नु पर्ने छ।

4. क्रसर प्लान्टले नेपाल सरकारको भाषदण्ड अनुसार कार्य गरेको हुनु पर्ने छ।

रनेशननल इंन्जिनियरिङ्क लि

६. Company registration certificate को प्रमाणपत्र ,IEE को प्रमाणपत्र दोश्रो पक्षले वुभाउनु पर्ने छ।

पहिलो पक्षको तर्फ वाट

रविन्द्र कुमार ठाकुर TO NER DELPYIN ch.

क्रिम् जाता 1:03



दोश्रो पक्षको तर्फवाट

भिम व. पौडेल संचलक

ओम श्री करार उस्तेत एड सप्लायर्स प्रालि लटाइ, मोरङ्