



Environmental Monitoring Report

Project Number: 38255-02
August 2009

IND: Uttarakhand State Road Investment Program (Subproject 1)

Prepared by

Project Management Unit, Public Works Department, Government of Uttarakhand

For

Executing Agency

Public Works Department, Government of Uttarakhand, Uttarakhand

This report has been submitted to ADB by the PMU (ADB (Transport)/Public Works Department), Dehradun, Uttarakhand and is made publicly available in accordance with ADB's public communications policy (2005). It does not necessarily reflect the views of ADB.

Asian Development Bank

Environmental Monitoring Report

Loan No: 2308 - IND

Reporting Period (October 2008 to March 2009)

Uttarakhand State Road Investment Programme (USRIP)

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Date: August, 2009

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1.0 Introduction

The Public Works Department (PWD) of Government of Uttarakhand has initiated Uttarakhand State Road Investment Programme (USRIP) to implement the up-gradation and improvement work of road stretches in the state of Uttarakhand for capacity augmentation for safe and efficient movement of traffic through loans from Asian Development Bank (ADB). The ADB Loan was provided by using Multitranches Financing Facility (MFF). The first project or Phase I of the MFF was approved on 2 January 2007.

1.1 Overall project description

The road improvement will focus on improving the condition of the existing road network by carrying out rehabilitation and reconstruction works, which are mostly confined within the existing right of way (ROW). The project basically comprises of up gradation/improvement of existing road sections under public works department (PWD) involving strengthening /reconstruction of the existing carriageway, bringing the roads to standard width, improvement, of the safety features and making provision of adequate signage's. The existing bridges and culverts are to be rehabilitated /reconstructed wherever required.

The (USRIP) Project - 1 is running in eleven districts of districts of Uttarakhand. There are a total of 23 road sections that have been taken under Project - 1 of USRIP. All of the roads are bituminous road except a non-bituminous stretch of road length 16.70 km of Betalghat – Bhatrojkhan. All the identified project roads stretches are located in the State of Uttarakhand, except 2 km stretch of Dhakia-Gulabo-Mukundpur-Paiga (Udham Singh Nagar) road which passes through the adjoining Moradabad district of Uttar Pradesh. The maintenance work of this particular section is also carried out by the Public Works Department of Uttarakhand.

Table – 1: Background and environmental category of USRIP Project – 1.

S. No.	Contract No	District	Road From	Road To	Category of Road	Length (Km)	Environmental Category
1	Contract-I	Dehradun	Kalsi	Chakrata	MDR	41.565	B
2	Contract-IA	Uttarkashi	Kuwa	Kafnol	ODR	47.546	B
3			Naugaon	Purola	ODR	17.89	B
4	Contract-II	Pauri	Fatehpur	Lansdowne	ODR	21.807	B
5			Pathrakhal	Gethicheda	ODR	17.985	B
6	Contract-III	Rudraprayag	Jakholi	Guptkashi	ODR	14.375	B
7			Rudraprayag	Pokhri-Karanprayag	ODR	14.512	B
8		Chamoli	Nandprayag	Ghat	ODR	18.493	B
Sub-total of Package – I Roads (Garhwal Zone)						194.173	B
9	Contract-V	Udhamsingh Nagar	Jaitpur	Dhanori	ODR	10.80	B
10			Dhakia-Gulabo	Mukundpur-Paiga	ODR	25.00	B
11			Zafarpur	Gularbhoj	ODR	13.80	B
12	Contract-VI	Nainital	Ranikhet	Mohan	MDR	70.20	B
13		Almora	Betalghat	Bhatrojkhan	ODR	16.70	B
14			Nathuakhan	Suyalbadi	VR	29.00	B
15	Contract-VII	Almora	Almora	Bageshwar	SH	72.90	A
16	Contract-VIII	Almora & Bageshwar	Barechhina	Sheraghat	SH	42.30	A
17			Pithoragarh	UdiyariBend	Kanda	MDR	25.70
18		Udiyari Bend		Thal	SH	22.00	B
19	Contract-X	Champawat	Pulla-Chamdeol	Shilling	VR	6.50	B
20			Lohaghat	Chaumel	VR	7.50	B
21			Thuligarh	Bhairav mandir	VR	6.30	B
22			Kakrali	Thuligarh	VR	13.00	B
Sub-total of Package – II Roads (Kumaon Zone)						361.70	
Total		11 Districts	23 Roads (1 Deleted)			555.873	

Note: Pauri -Khirshu – Srinagar road has been deleted because this section has already been improved by state government.

1.2 Project Objectives

Uttarakhand State Road Investment Programme is a multi layer financial support for the road sub sector of Uttarakhand state. The objectives of this project are to implement part of its road development plan and to increase the road asset management capacity of the State's Public Works Department (PWD). The investment program will have an incremental, positive long-term impact on Uttarakhand's economy and living standards of the rural population. The principal outcomes of the physical investment under the investment program will be increased efficiency, safety, comfort and reliability of inter and intra state transport services and lower road maintenance costs.

1.3 Environmental category

As per ADB's Environmental Assessment Guidelines 2003, Project – 1 of USRIP has been classified as Environmental Category A, requiring an Environmental Impact Assessment.

The roads for contract - I, IA, II, III, V, VI, and IX were categorized as a category "B" therefore it will require environmental monitoring report annually and The roads (Almora – Bageshwar) for contract – VII and (Barechhina – Seraghat) for contract - VIII were categorised as category "A" under ADB's environmental categorization, therefore it will require much attention to implementation of EMMP.

1.4 Environmental Performance Indicators

The environmental performance indicators have been framed with the objective of carrying out project progress review. The physical and biological and social components identified to be significant in affecting the environment at critical locations have been suggested as performance indicators (PIs). The performance Indicators shall be evaluated under three heads as:

- (i) Environmental condition indicators to determine efficiency of environmental management measures in control of air, noise, soil and water pollution.
- (ii) Environmental management indicators to determine compliance with the suggested mitigation measures.
- (iii) Performance indicators that have been devised to determine efficiency and utility of the proposed mitigation measures.

The performance indicators and monitoring plan is given in Table – 2.

Table – 2: Environmental performance indicators

S. No.	Details	Indicators	Stage	Responsibility
Construction Stage: Environmental Management Indicators and Monitoring Plan				
1.	The parameters to be monitored as per frequency, duration and locations of monitoring specified in the Environmental Monitoring Programme in IEE and EIA.	Air quality	Construction	Contractor through approved monitoring agency
		Noise level	Construction	Contractor through approved monitoring agency
		Water quality	Construction	Contractor through approved monitoring agency
2.	Contractor Shall report implementation of the measures suggested for top soil conservation to environmental expert, supervision consultant.	Top soil	Construction	Contractor

2 Compliance status with National / State / Local statutory environmental requirements

With regard to the phase I, there is no road project required environmental clearance from MOEF. The NOC were obtained from the 'State Pollution Control Board' (SPCB) for Garhwal (for all road Contract Package 1), and Kumaon (contract package 2). The NOC from SPCB was granted to PMU on 31 / 08 / 2006. There are some conditions as part of the issuance of NOC aside paying the administration fee (Rs. 300000/=) paid to directly to SPCB. There is so far no permit required for permission of using water from the 'Water Board'.

Table - 4: Compliance status with national/ State/ Local statutory environmental requirement

S. No.	Activity	Statute	Requirement	Competent Authority	Responsible Agency for Obtaining Clearance	Compliance Status
1.	Tree cutting from non-forest area and diversion of forest land	Forest Conservation Act 1980 & MoEF Letter Dt. 18.02.98	Permission for roadside tree cutting	Local Authority Forest	PMU, PWD	The construction work is being carried out within formation width available on ground. No proposal for diversion of forest land is to be initiated as no land acquisition is proposed in the sub-project roads. The forest clearance was required for 3 roads under the contract V (Jaitpur – Dhanouri, Dhakiya-Gulabo-Mukundpur-Paiga and Jafarpur – Gularbhoj). Forest clearance has been obtained by Concern Department.
2	Establishing stone crusher, hot mix plant, wet mix plant and Diesel Generator Sets	Water Act of 1974, Air Act of 1981, Noise Rules of 2000 and Environmental Protection Action of 1986 and as amended	Consent-for-establishment	Uttarakhand Environment Protection and Pollution Control Board (UEPPCB)	The Contractor	Contractor has obtained material (Bituminous Course) from 3 rd parties. Consent-for-establishment under Water Act of 1974, Air Act of 1981, Noise Rules of 2000 and Environmental Protection Action of 1986 is requiring.
3	Operating stone crusher, hot mix plant,	Water Act of 1974, Air Act of 1981, Noise	Consent-for-operation	Uttarakhand Environment Protection and	The Contractor	Contractor has obtained material (Bituminous Course) from 3 rd parties.

	wet mix plant and Diesel Generator Sets	Rules of 2000 and Environmental Protection Action of 1986 and as amended		Pollution Control Board (UEPPCB)		
4	Quarry operation	State Mineral Concession Rules, The Mines Act of 1952, Indian Explosive Act of 1984, Air Act of 1981 and Water Act of 1974	Quarry Lease Deed and Quarry License	State Department of Mines and Geology	The Contractor	Aggregates are procured from established quarry sites and licensed quarries owned by 3 rd parties. The material required for overlaying is mostly GSB. In case of requirement of earth/soil, the same can be taken from the selected material from hill cutting.
5	Extraction of ground water	Ground Water Rules of 2002	Permission for extraction of ground water for use in road construction activities	State Water Board, Jal Nigam / Naikoop Nigam	The Contractor	Contractor has made independent arrangements for water requirements through water from natural spring, seasonal streams along the project stretch for construction purpose. Boring for ground water extraction was noticed on the sub-project roads.
6	Engagement of labour	Labour Act, Contract Labour (Regulation &	Labour license, safety measures at the building or	Labour Commissioner	The Contractor	Local labour is being preferred. However, labour force has been hired from outside the state from Sub-Contractors. General working hours are restricted to 8.00 AM to 5.00PM,

3 Compliance status with the environmental covenants as stipulated in the Loan Agreement

As per the Loan Agreement for Uttarakhand State-Road Investment Program – Project 1, Environmental Impact Assessment Review Framework under Schedule 5 to the FFA describes the environment assessment requirements and authorities responsibilities. Some of the responsibilities are described below.

Clause and Para No.	Description	Compliance Status
Schedule 5 2. (a)	The PMU set up by the State under the Facility shall remain adequately staffed and functional for the project and the facility. The PMU shall comprise a Project Director and at least one road design and pavement manager, environment specialist, and social and resettlement specialist and coordinator, to assist implement the RF, IPDF and EARF. The project Director shall report to the Chief Engineer of the PWD. The secretary PWD would be responsible for the interdepartmental coordination and overall supervision of the Investment Programme and the project.	Complied
Schedule 5 2. (b)	The PMU shall be responsible for day to day operation of the project and Investment Programme and periodic functions such as preparation of PFRs for project under the Facility, engagement of consultants and contractors, preparation of reports, approvals from relevant authorities and ADB, and overall supervision of consultants.	Complied
Schedule 5 2. (c)	The EA shall engage Programme Support Consultants, within two months of the Effective Date to assist the PMU to coordinate with supervision and infrastructure management consultants and facilitate timely processing and implementation of the project.	Complied
Schedule 5 3. (b)	Each PIU shall be headed by a superintendent engineer, assisted by an executive engineer and at least two other technical staff including staff with expertise in social development and environment management, and accounts officer and two support/ administrative staff. The head of each PIU shall coordinate and lies with the Project Director of the PMU, and shall be supported as needed, by the Programme Support Consultants.	Complied
Schedule 5 6. (a)	The State shall delegate necessary authority to designated staff of PMU for timely processing of PFRs and implementation of individual projects under the Facility. In this regard State shall ensure active coordination with ADB for strict adherence to implementation schedules including, but not limited to,	Complied

	recruitment of consultants and safeguard compliances, as agreed under the Facility as well as for individual projects under the Facility	
Schedule 5 6. (b)	The EA shall ensure that detailed project reports for all components of subsequent projects under the Facility are prepared in accordance with the social, environmental and indigenous people frame works agreed with ADB during processing of the facility, as amended from time to time.	Complied
Schedule 5 7. (a)	Implement the project accordance with the EARF under ADBs environment policy, 2002, and applicable laws and regulation of the borrower and the state.	On going
Schedule 5 7. (b)	Provide training to engineers to be assigned for environmental management and to ensure that the requirements of the EARF are fully implemented in consultation with the relevant contractor and construction supervision consultants.	On going
Schedule 5 9. (a)	Subject to compliance with the requirement of the RF, IPDF and EARF and related RP, IEE / EIA, and IPDP, respectively, it shall (i) make available land and right in land, free from encumbrances, and (ii) clear the utilities, trees and any obstruction on such land, on a timely bases, i.e., strictly in accordance with the schedule as agreed under the related works contract, as required for activities relating to each road or section of a road in the works contract.	Complied
Schedule 5 9. (b)	Subsequent to the award of the contract package to a contractor, ensure that road or section of roads (sites) in that package are not handed over to the contractor unless all provisions of the RF, EARF and IPDF and related RP, IEE and EIA and IPDP (as applicable) respectively, are satisfied.	Complied
Schedule 5 10.	The EA shall provide adequate funding for independent monitoring of activities relating to land acquisition, resettlement, environment and other social issues under the project.	On going

4 Compliance status with environmental management and monitoring plans as stipulated in the environmental documentation as agreed with ADB

The status chart would provide details of actions proposed to be taken by various agencies, including contractors/vendors for implementation. The status of implementation of environmental management and monitoring plans and environmental assessment and review framework/procedures as agreed and thereof is given in **Table – 5** for (Package – I) Garhwal Zone and **Table - 6** for (Package- II) Kumaon Zone.

Table - 5: Status of Compliances to Environmental Issues Addressed in the Environmental Management Plan (Package – I) Garhwal Zone

EMP Clause No.	Activity	Contract I	Contract IA	Contract II	Contract III	Remarks
P.1 Construction Stage Campsite establishment, mobilization status of vehicles and machinery etc.						
P.1.1	Details of Location of Crushers, Hot Mix Plant, WMM Plant etc.	Camp site has been established at Vikasnagar.	Camp site has been established at Naugaon	Camp site has been established between km 10.0 to 16.0 on road Patharkhal-	Camp site has been established at km 3,km10, and km 16.0 on road	All the Contractors have been instructed to submit the layout before the CSC as well as to furnish the details in the prescribed Appendix IA to IC of condition of Contract of Contract Documents. The Contractors have been asked to submit a copy of Consent-for-Operation (CFO) under Air and Water Acts from the Uttarakhand Environment Protection and Pollution Control Board (UEPPCB) before start of commissioning and trial run.
		The HMP plant (owned by 3 rd parties) is located at Dharamwala 8 km. from Kalsi and approx 48 km away from Chakrata project site.	The HMP plant is located at km. 7.80 on Private land on Kuwa-Kafnol road.	Gethichheda and at km 17.0 on road Fatehpur Lansdowne	on rd RP-Pokhari- KP At km 11,14 and km 16 on rd Jakholi-Guptakashi	

							12 km away from Nandparyag.	
P.1.2	Mobilization of Other Construction Vehicles, Equipments and Machinery	Has been completed	Has been completed	Has been completed	Has been completed	Has been completed	Immediately no further mobilization of vehicles or any other equipment is foreseen. In case of further mobilization, it will be reported.	
Quarry sites Establishment, Labour force mobilization, arrangement of Construction water, disposal site selection, construction campsite establishment, Arrangement of temporary land, orientation programmes.								
P.2	Status of Quarry Establishment	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties.	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties.	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties.	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties.	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties.	No new quarry has been established as part of the project activities.	
P.3	Arrangement for Construction Water: Source, location	Natural spring, Seasonal streams along the project stretch	Natural spring, Seasonal streams along the project stretch.	Natural spring, Seasonal streams along the project stretch.	Natural spring, Seasonal streams along the project stretch	Natural spring, Seasonal streams along the project stretch	Contractor has made independent arrangements for water requirements through water from Natural spring, Seasonal streams along the project stretch for construction purpose. No boring for ground water extraction was noticed on the sub-project roads.	

P.4	Status of Site Identification for Disposal of Unsuitable Materials	At present, excavated material as well as debris is being utilized for pothole filling in the project road.	At present, excavated material as well as debris is being utilized for pothole filling in the project road.	At present, excavated material as well as debris is being utilized for pothole filling in the project road.	All the Contractors have been instructed to look for debris disposal sites for dumping of landside material as well as extra un-utilised material as per the guideline given in appendix IA of condition of Contract of Contract Documents.
P.5	Labour Requirements and arrangements	Local Labour is being preferred. However, labour force has been hired from outside the state by Sub-Contractors in some patches.	Local Labour is being preferred. However, labour force has been hired from outside the state by Sub-Contractors in some patches.	Local Labour is being preferred. However, labour force has been hired from outside the state by Sub-Contractors in some patches.	All the Resident Engineers/ Environmental Coordinator have been directed to check the status of labour License obtained by each of the Contractors.
P.6	Status of Construction Camp- Location, Design and Lay out	Camp site has been established at Vikasnagar.	Camp site has been established at Nagaon.	Camp site has been established between km 10.0 to 16.0 on road patharkhal-	All the Contractors have been instructed to follow the guidelines given in Appendix 1A to 1C of condition of Contract of Contract Documents in consultation with the Engineer-in-charge and Environmental Coordinator of CSC

					Gethichheda and at km 17.0 on road Fateh pur lans downe.	road RP- Pokhari- KP At.km 11,14 and 16 on road Jakholi- Guptakashi.	
		Borrow areas are being hired from 3 rd parties.	Private Land has been hired from 3 rd parties for establishing the camp and buildings are hired for accommodation.	Private Land has been hired from 3 rd parties for establishing the camp and buildings has been hired for accommodation.	Private Land has been hired from 3 rd parties for establishing the camp and buildings has been hired for accommodation.	Contractors have been instructed to look for waste land/ barren land for disposal of debris and other unsuitable materials As per the guideline given in Appendix 1A of <i>condition of Contract of Contract Documents</i>	
P.7	Status of Arrangements for Temporary Land	Campsite is owned by the Contractor. Rented house has been arranged for setting up of Laboratory etc.					
P.8	Orientation of Implementing Agency and the Contractors	Training programmes on basic understanding of IEE and EMP and processes of EMP implementation etc. as well, onsite guidance on sound construction technologies to be followed are imparted to Project Manager and Environmental officer of Contractor and Resident Engineer and Environmental Coordinator of CSC at Vikas Nagar (for contract package 1 & 1A) and at Srinagar (for Contract package 2 &3).					
C.1 Site Clearance							
C.1.1	Generation of Debris from	At present, excavated material as well as debris is being utilized for filling in the project road. Contractors have been instructed to					

	Dismantling Structures and Road Surfaces and their disposal status	utilize scrap bitumen surfaces to strengthen access roads. Landslide material and unused debris will be disposed off in the proper disposal site as per the guideline given in Appendix 1A of condition of Contract of Contract Documents.
C.1.2	Disposal of Other Construction Waste-Site location , Plan	Each of the Contractors has been instructed to look for disposal sites, plan and seek approval of the Engineer-in-charge and Environmental Coordinator of CSC prior to operate the disposal site.
C.1.3	Accessibility for road users during construction work in progress	Each of the Contractors has been instructed to arrange adequate safety provisions for the safety of the road users with special emphasis to night travelers. During construction work in progress, signboards have been placed and signaling and guidance has been provided to road users to avoid any such accidents.
C.1.4	Planning for Traffic Movement during construction work in progress	Each of the Contractors have been instructed to develop detailed traffic control plans for each active work sites, seek approval of the plan from the Engineer-in-charge and Environmental Coordinator of CSC and implement the plan with special emphasis to CD locations, night users and pedestrian users. Traffic cones, barricading, informative sign boards have been in place in each of the contract packages. Contractor has been instructed to use retro reflective appliances for night visibility.
C.2 Procurement of Construction material		
C.2.1	Status of Quarry Operation	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties. No new quarries have been established as part of this project implementation.

C.2.2	Source of Construction Water	Contractor has made independent arrangements for water requirements through water from Natural spring, Seasonal streams along the project stretch for construction purpose. No boring for ground water extraction has been noticed on the sub-project roads.
C.3 Water Pollution		
C.3.1	Water Pollution from Construction Wastes-The arrangements made to control	No Construction work is being carried out close to any streams or water bodies. Contractors have been instructed to locate, design and operate waste disposal sites to contain construction wastes. Also care is being taken so that runoff of waste concrete does not enter the water bodies. Contractor has been instructed to divert water flow through the campsites to avoid flowing of fines, aggregates, spilled oil/ lubricants to the downstream. Contractors have been instructed to carry out Environmental monitoring as per the prescribed monitoring format and guideline given in EMP to have an idea about the persisting Environmental Quality of the operational area.
C.3.2	Water Pollution from Fuel and Lubricants-Collection system to avoid pollution	Vehicles are maintained at workshops away from streams, channels and stagnant water bodies. Fuel and lubricants are stored on solid platforms. However, incidences were observed revealing runoff water flowing through campsites and carrying spilled oil/bitumen/ lubricants downstream.
C.4 Air Pollution		
C.4.1	Arrangements made to check Dust Pollution	Water sprinkling is being carried out at active working stretches to check dust emission from road surfaces. Contractors have been instructed to carry out Environmental monitoring as per the prescribed monitoring format and guideline given in EMP to have an idea about the persisting Environmental Quality of the operational area.
C.4.2	Emission from Construction Vehicles, Equipments and Machineries-	Contractors have been instructed to keep the vehicles covered while transporting the construction materials and regular maintenance of machinery and vehicles to check extra emissions. Contractors have been instructed to carry out Environmental monitoring as per the prescribed monitoring format and guideline given in EMP to have an idea about the persisting Environmental Quality of the operational area.

	Arrangements made to check Air pollution	
C.5 Noise Pollution		
C.5.1	Arrangements made to check Noise from Vehicles, Equipments and Machineries	Vehicles and machinery are being maintained periodically to check extra noise generation. Contractors have been instructed to carry out Environmental monitoring as per the prescribed monitoring format and guideline given in EMP to have an idea about the persisting Environmental Quality of the operational area.
C.6 Safety		
C.6.1	Personal Safety Measures adopted for Laborers	Though PPEs in each of the contracts have been procured, distributed; only few of the workers seem to be using those. Hence, each of the Contractors has been instructed to procure, distribute and motivate workers towards their use. Importance of PPEs at Hot mix work sites and Concrete work sites have been emphasized.
C.6.2	Risk from Electrical Equipments- Safety arrangements made there to	Only trained personnel with appropriate PPEs are allowed to handle electrical equipments and all the electrical joints and live wires are kept concealed.
C.6.3	First Aid Facility	All the Contractors have been instructed to distribute First aid provisions at all active work sites to have an easy access by all workers. Also nearby Health Centers to be liaisoned for first hand treatment provisions as per the guideline given in Appendix 1A of condition of Contract of Contract Documents.
C.7 Labour Camp Management		

C.7.1	Accommodation Details with amenities provided	Employees are being accommodated in rented premises in the sub project roads.						
C.7.2	Potable Water arrangement	Contractor has made Independent arrangements for drinking purpose for construction labour and each of the Contractors has been instructed to carry out detailed water quality testing As per IS: 10500 to judge their suitability for drinking purpose As mentioned in Appendix 1-B (water supply) of condition of Contract of Contract Documents.						
C.7.3	Sanitation and Sewage Systems planning and operation	Each of the Contractors has been instructed to develop sanitation facilities, sewage systems to each of their plant sites as per the provision of EMP.						
C.7.4	Waste Disposal facilities developed and their operation with details of location and mode of operation	Each of the Contractors has been instructed to look for disposal sites, plan and seek approval of CSC prior to operate the disposal site. Organic wastes (Kitchen waste or so) are being disposed in pits and those are composted.						
C.8 Contractor's Demobilization								
C.8.1	Clean-up Operations, Restoration and Rehabilitation	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Not necessitated, as the work is in progress.</td> <td style="width: 15%;">yet necessitated, as the work is in progress.</td> <td style="width: 15%;">Not necessitated, as the work is in progress.</td> <td style="width: 15%;">yet necessitated, as the work is in progress.</td> <td style="width: 15%;">Not necessitated, as the work is in progress.</td> <td style="width: 15%;">yet instructed to take up periodical clean up operation to their campsites.</td> </tr> </table>	Not necessitated, as the work is in progress.	yet necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	yet necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	yet instructed to take up periodical clean up operation to their campsites.
Not necessitated, as the work is in progress.	yet necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	yet necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	yet instructed to take up periodical clean up operation to their campsites.			

Table - 6: Status of Compliances to Environmental Issues Addressed in the Environmental Management Plan (Package – II) Kumaon Zone

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
P.1 Construction Stage Campsite establishment, mobilization status of vehicles and machinery etc.							
P.1.1	Details of Location of Crushers, Hot Mix Plant, WMM Plant etc.	The Contractor has established drum mix plant, WMM plant at km 209 on NH-74 LHS (Rudrapur-Kasipur road)	One drum mix plant and WMM plant has been erected at Totam village at km 52 adjacent to the corridor.	The drum mix plant, and WMM plant is located about in Takula village. The location of campsite is about 800m away from the main village.	The Contractor has established two plant sites at following places 1. At km 10+200 in Dhaulachina on Barechina-Sheraghat road 2. At km 3+000 in Chakori village on Udiyari-bend-Kanda road.	The drum mix plant and WMM plant has been erected at Charubeta village, Khatima in Tanakpur – Bareilly road	The plant site has been in operation for about one year. All the contractors have applied for NOC from State Pollution Control Board, but as of now consent has not been obtained. No new crusher has been opened as part of this project.
P.1.2	Mobilization of Other Construction Vehicles, Equipments and Machinery	Has been completed	Has been completed	Has been completed	Has been completed	Has been completed	No further mobilization of vehicles or any other equipment is not foreseen.
P.2	Status of Quarry	Aggregates are	Aggregates are	Aggregates are	Aggregates are	Aggregates are	No new quarry has

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
	Establishment	procured from established quarry sites and licensed quarried owned by 3 rd parties.	procured from established quarry sites and licensed quarried owned by 3 rd parties.	procured from established quarry sites and licensed quarried owned by 3 rd parties.	procured from established quarry sites and licensed quarried owned by 3 rd parties.	procured from established quarry sites and licensed quarried owned by 3 rd parties.	been opened as part of this project.
P.3	Arrangement for Construction Water	Bore wells/ Canals	Bore wells and Kosi River flowing at about 1 km from the project road.	Water purchased from Jai Nigam, and natural springs	Bore wells and natural springs along the project stretch.	Bore well in the campsite and river	Bore well water and municipal water supply is being used as drinking water source. The contractors have been asked to submit NOC from Jai Nigam
P.4	Status of Site Identification for Disposal of Unsuitable Materials	Some materials are used for pothole repairing/ backfilling, some have been stored at selected places along the corridor.	Some materials are used for pothole repairing/ backfilling, some have been stored at selected places along the road.	Some materials are used for pothole repairing/ backfilling, some have been stored at selected places along the corridor.	Some materials are used for pothole repairing/ backfilling, some have been stored at selected places along the corridor.	Some materials are used for pothole repairing/ backfilling, some have been stored at selected places along the corridor.	All the Contractors have been instructed to look for debris disposal sites for dumping of wastes and unsuitable material

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
P.5	Labour Requirements and arrangements	Most of the workforce is local labour. However, some labour force have been hired from outside by the sub-contractor	corridor. Most of the workforce is local labour. However, some labour force have been hired from outside by the sub-contractor	Most of the workforce is local labour. However, some labour force have been hired from outside by the sub-contractor	Most of the workforce is local labour. However, some labour force have been hired from outside by the sub-contractor	Most of the workforce is local labour. However, some labour force have been hired from outside by the sub-contractor	All the contractors have been asked to submit labour license and workmen compensation insurance
		<p>The Contractor has established campsites with drum mix plant, aggregate storage, bitumen storage, workers camp for this project. The construction camp is already in operation.</p> <p>The site is located</p>	<p>Campsites established at Km.72+500 at Mohan in a rented premise with existing buildings. A small construction camp is also operational at drum mix plant</p>	<p>The campsites are located in Takula village. The campsites have a drum mix plant, labour camp and material storage yard.</p>	<p>The Contractor has established two campsites at following places</p> <ol style="list-style-type: none"> At km 10+200 in Dhaulachina on Barechina-Sheraghat road At km 3+000 in Chakori village on Udiyribend-Kanda road. 	<p>One campsites cum office has been erected at km 17.624 for construction of bridge as well as road. The drum mix plant has been erected at Charubeta village, Khatima in Tanakpur – Bareilly road</p>	<p>All the Contractors have been instructed to submit the layout before the CSC as well as to furnish the details in the prescribed format of EMP P7.2. The layout plan was not submitted by contractors.</p>
P.6	Status of Construction Camp- Location, Design and Layout						

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
		at km 209 on NH-74 LHS (Rudrapur-Kasipur road)	in Totam village.				
P.7	Status of Arrangements for Temporary Land	Borrow areas are being hired from third parties. Campsite is owned by the Contractor.	Camp site is established in rented premises.	Camp site is established in rented premises. Private buildings are hired for accommodation.	Camp site is established in rented premises. HMP is established on land temporarily acquired from villagers. Houses have been rented for accommodation.	HMP plant site is owned by the Contractor. Campsite has been established on rented plot.	Contractors have been instructed to look for waste land for disposal of debris and other unsuitable materials.
P.8	Orientation of Implementing Agency and the Contractors	Training programmes were conducted on contractual obligation with respect to EMP implementation; a meeting was organized for contractors on implementation of EMP. Onsite guidance is imparted on sound construction technologies to be followed by team leader and REs.					
C.1 Site Clearance							
C.1.1	Generation of Debris from Dismantling Structures and	At present, excavated material as well as debris is being utilized for pothole repairing and back filling. Also, All the Contractors have been instructed to look for debris disposal sites for dumping of landslide material as well as extra unsuitable material. Contractors have been instructed to utilize scrap bitumen surfaces to strengthen access roads.					

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
	Road Surfaces and their disposal status						
C.1.2	Disposal of Other Construction Waste-Site location , Plan	Each of the Contractors has been instructed to look for disposal sites, plan and seek approval of CSC prior to operate the disposal site.					
C.1.3	Accessibility for road users during construction work in progress	Each of the Contractors has been instructed to arrange adequate safety provisions for the safety of the road users with special emphasis to night travelers. During construction work, signboards are placed and signaling and guidance is provided to road users to avoid accidents.					
C.1.4	Planning for Traffic Movement during construction work in progress	Each of the Contractors have been instructed to develop detailed traffic control plans for each active work sites, seek approval of the plan from CSC and implement the plan with special emphasis to CD locations, night users and pedestrian users. Traffic cones, barricading, informative sign boards are in place in each of the contract packages. Contractor has been instructed to use retro reflective appliances for night visibility.					
C.2 Procurement of Construction material							
C.2.1	Status of Quarry Operation	Aggregates are procured from established quarry sites and licensed quarried owned by 3 rd parties. No new quarries have been opened as part of this project.					
C.2.2	Source of Construction Water	Water for construction purposes is mainly drawn from bore wells, canals, streams, rivers flowing in the project stretch.					

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
C.3 Water Pollution							
C.3.1	Water Pollution from Construction Wastes	No Construction work is being carried out close to any streams or water bodies. Care is being taken so that runoff of waste concrete does not enter water bodies. Contractors have been instructed to divert water flow through the campsites to avoid flowing of fines, aggregates, spilled oil/lubricants to the downstream.					
C.3.2	Water Pollution from Fuel and Lubricants	Vehicles are maintained at workshops away from streams, channels and stagnant water bodies. Fuel and lubricants are stored on solid platforms. Waste oil is collected in drums and sold out to vendors. There is no overflowing of water through campsites from fuel and lubricants.					
C.4 Air Pollution							
C.4.1	Arrangements made to check Dust Pollution	HMP are having approved stacks and water filters to contain fines. Water sprinkling is being carried out at active working stretches to check dust emission from road surfaces. Contractors have been instructed to keep the vehicles covered and to avoid overloading to avoid dust pollution.					
C.4.2	Emission from Construction Vehicles, Equipments and Machineries	HMP are having approved stacks and water filters to contain fines. Vehicles are maintained regularly to check extra emissions. Pollution under control (PUC) certificates was obtained for various construction vehicles. Contractors have been instructed to carry out Environmental monitoring as per the prescribed monitoring format of EMP to have an idea about the persisting Environmental Quality of the operational area.					
C.5 Noise Pollution							
C.5.1	Arrangements made to check Noise from Vehicles,	Vehicles and machinery are being maintained periodically to check extra noise generation. Contractors have been instructed to carry out noise level monitoring as per the prescribed monitoring format of EMP to have an idea about the persisting noise level during construction stage.					

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
	Equipments and Machineries						
C.6 Safety							
C.6.1	Personal Safety Measures adopted for Laborers	Though PPEs in each of the contracts have been procured, distributed; only few of the workers seem to be using those. During visit in June 2009, stringent action has been taken to made mandatory use of PPEs. All the Contractors have been instructed to procure, distribute and motivate workers towards their use. Importance of PPEs at drum mix work sites and concrete work sites have been emphasized. Some improvement has been marked as compared to the initial stage.					
C.6.2	Risk from Electrical Equipments	Only trained personnel with appropriate PPEs are allowed to handle electrical equipments and all the electrical joints and live wires are kept concealed.					
C.6.3	First Aid Facility	Has been provided in the campsites. All the Contractors have been instructed to distribute first aid provisions at all active work sites to have an easy access by all workers. Also nearby health centers have been liaison for first hand treatment provisions.					
C.7 Labour Camp Management							
C.7.1	Accommodation	Employees are being accommodated in rented premises having drinking water facility, kitchen facility, drainage system, sewage system, Electricity provisions etc. in the nearby habitations. Only labours hired from outside have been provided accommodation at campsites and some at rented houses in nearby villages with basic amenities like drinking water, sanitation facilities and cooking facilities.					
C.7.2	Potable Water	Bore well water and public water supply is being used for drinking purpose and each of the Contractors has been instructed to carry out detailed water quality testing As per IS: 10500 to judge their suitability for drinking purpose.					

EMP Clause No.	Issues	Contract-5	Contract-6	Contract-7	Contract-8	Contract-9	Remarks
C.7.3	Sanitation and Sewage Systems	Septic tanks and soak pits are operational in accommodation sites. Each of the Contractors has been instructed to maintain sanitation facilities, sewage systems in their respective campsites.					
C.7.4	Waste Disposal	Each of the Contractors has been instructed to look for disposal sites, plan and seek approval of CSC prior to operate the disposal site. Organic wastes (Kitchen waste) are being disposed in pits or by municipal wastes. Soak pits and septic tanks are in operation.					
C.8 Contractor's Demobilization							
C.8.1	Clean-up Operations, Restoration and Rehabilitation	Not necessitated, the work is in progress.	Not necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	Not necessitated, as the work is in progress.	All the Contractors have been instructed to take up periodical clean up operation to their campsites.

5 Approach and methodology engaged for environmental monitoring of the project

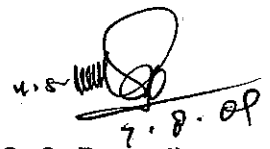
The 'Environment Monitoring Report' was prepared based on the collection of relevant information/data from the PMU office on the basis of the desk review of the bid documents and the Environment Management Plan on one hand and simultaneously time to time monitoring and observation of civil works and environmental safeguards issues in the field on other. It describes monitoring program for various parameters, methods of monitoring, duration and frequency of monitoring, sampling location and site of monitoring, description of responsibilities and authorities for implementation of mitigation measures and monitoring requirements. Under section F-"Special Conditions of Contract" of contract documents, Appendix 1-C.1 to 1-C.3 provides the standard limits for monitoring of Air, Water Quality and Noise quality as per CPCB guideline. The Contractor has been advised to conduct the Ambient Air and Noise monitoring and also to submit the result.

6 Details of Grievance Redress Committee

Grievance Redress Committee is not constituted. Public consultation and Complaints received from public resolved by Executive engineer of PIU with the help of Assistant Engineers, Supervision consultants and Local Administrative officers.

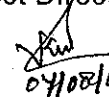
7 Follow-up actions and conclusions

1. The contractor has been advised to follow the requirement / condition given in "Special Conditions of Contract" Issues to be specifically deal with are: labour and construction camp management, road safety issues.
2. The Contractor has been advised to obtain consent and permission from various government agencies at different stages of the project as soon as possible.
3. The Contractor has been advised to conduct the Ambient Air and Noise monitoring and also to submit the result.


7.8.09

(Er. G. S. Bansal)

Project Director/Chief Engineer


PMU/ADB/PWD,
04/08/09