Environmental Monitering Form for Construction Stage

Attachment EN3

Item	Location	Parameter/Means of Monitoring	Result (Average/Max /Total, etc)	Standard (Legal/International Standard)	Frequency	Remarks
Air quality	construction site	visual inspection of mechanical condition and exhaust gas	No observations on the gas exhaust. colorless gas, no eyes irritation was left		every day before working	After the first report, measures were taken to improve the negative impacts, in particular the development of a watering schedule which proposed watering twice a day.
	construction site	visual observation of dust	Dust observed during the passage of vihicles, the study was conducted in the dry season		every day before working	
	storage facilities for dust generating					
	boundary of ROW nearest to construction site	SPM10	18,56 – 362,68	50 µg/m3 (WHO, average 24h)	2 times in dry season and 2times in rainy season	In general, the results of physico-chemical analyzes show that the waters of the rivers that were the subject of this study are unpolluted and have the character of natural waters. Otherwise, The turbid character of some rivers is high (river 13 in particular). Pollution by heavy metals (lead) has been identified in waterways as well as faecal contamination.
		SPM2.5	11,606 – 218,193	25 µg/m3 (WHO, average 24h)		
		SO2	0 – 0,76	0.30 mg/m3 (MOE, average 24h)		
		NO2	0	0.10 mg/m3 (MOE, average 24h)		
		O3	0 – 0,09			
water quality	rivers including Sanaga river, streams and other public water bodies where construction works are executed	visual observation	The work in progress is disrupting the current of three rivers without preventing their flow		every day	To minimize river pollution, the following measures have been taken: regular watering of the work area, installation of a biodegradable waste pit, a stone watering system has been installed on the crusher and a toilet has been built on the site of the stone quarry.
		analysis using potable pH and turbidity meter				
		pH	4,4 – 6,6	6.5–8.5	when any pollution is suspected	
		TSS	5 –10	25–100 (mg/l)		
		TURB	7,81 – 41,1	<5 (NTU)		
		MES	5,2 – 102	50 – 100 (mg/l)		
		COND	0 – 40	<400 (µS.cm-1)		
		BOD	0 – 25,8	1–10 (mg/l)		
		COD	0 – 34	1–8 (mg/l)		
		PLOMB	0.00	≤0,01 (mg/l)		
		CADMIUM	0.00	≤0,0005 (mg/l)		
		CHROME	0.00	≤0,05 (mg/l)		
		ZINC	0.00	≤3.00 (mg/l)		
		CUIVRE	0.00	≤ 1 (mg/l)		
		CF	0.00	< 2000 (UFC/100 ml)		
noise	boundary of land plot nearest to the construction site	Noise level	33,5 – 63,8	60dB(06:00–18:00) 60dB(06:00–18:00) 60dB(06:00–18:00) (MOE, residential area)	*when noise/ vibration level exceeding the standards is suspected *when local residents complain	
vibration		vibration level	1.5	65Hz(05:00–17:00) 60dB(17:00–05:00)		

general waste	waste storage at construction site	slurry and other construction waste	discharged amount	0		every domain	For the management of waste on the site, the company was recommended to set up a household waste pit and for medical waste, to sign an agreement with an approved hospital for the treatment of said waste. On the other hand, for special waste, it was recommended that an agreement be signed with a consultant approved by the Ministry of the Environment.
			recycled amount	0			
			the way of recycle	Storage at the staff housing site in Mangaï			
			treated amount				
			location of final disposal	Lack of traceability once the pre-collection of this waste is done on the site.			
		general waste	discharged amount	0			
			recycled amount	0			
			the way of recycle	Storage at the staff housing site in Mangaï			
			treated amount	Lack of traceability once the pre-collection of this waste is done on the site.			
			location of final disposal				
Hydrology	rivers, streams and reservoirs where construction works are executed	visual inspection on volume and speed of water flow		The work in progress is disrupting the normal flow of three rivers		every domain	After the observation according to which the waters of the rivers were disturbed, it was concluded to take measures to reduce the pollution in particular by the construction of a borehole.
Ecosystem	lot 1	visual observation of animals, reptiles and amphibious					
	lot 2						
	lot 3			Palm rats (Xerus erythropus), dwarf mongooses (Helogale parvula), blue duikers (Cephalophus monticoles) and Cob defassa (Kobus ellipsiprymmus), common grasscutter (Thryonomys swinderianus), porcupine (Hystrix cristata), squirrel (Myosciurus pumilio), Gambian rat (Cricetomys gambianus) and African arthritis (artherurus africanus), reptiles (naja, monitor lizards, python, viper). Several species of fish inhabit the rivers of the region, there are species such as Tilapia (Oreochromis niloticus), Catfish (Clarias gariepinus), Common carp (Cyprinus carpio) and Kanga (Heterotis niloticus)		every half year (1 time in dry season and 1 time in rainy season)	To avoid poaching, sensitizations are organized every quarter on the non-consumption of bushmeat by workers
	lot 4						

**Remarks; Past trend and current status including remedial measures if necesary