

**REMEDIAL WORKS FOR ONSITE WASTE WATER TREATMENT PLANT AT LORESHO RIDGE  
ESTATE DEVELOPED ON L.R.NO.21080/63 (ORIGINAL NO. 21080/38)**

**KENYA POWER PESION FUND**

TENDER NO: KPPF/PROC/2-A/06/2020

**BILL OF QUANTITIES**

**BILL 1: Prime Cost Sums and Preliminaries**

ITEM No.	DESCRIPTION	UNIT	QUANTITY	RATE (Kshs)	AMOUNT (KShs.)
1.1	Prime Cost Sum for diagnostic flow and water wuality tests,				
	i. Flow measurement in the disconnection manhole ii. Flow measurement at the lifting pump iii. Flow measurement tests of the released effluent iv. Effluent quality tests in the disconnection manhole v. Effluent quality tests in the collection tank vi. Effluent quality tests in the first sedimentation tank vii. Effluent quality tests in the last sedimentation tank viii. Effluent quality tests after chlorination before filtration ix. Effluent quality tests as released into the environment as is x. Effluent quality tests in the three ponds of the water feature	sum	1		
1.2	Prime Cost sum for diagnostic Air quality tests				
	i. Air quality test above the collection tank ii. Air quality test above aerobic/facultative treatment tanks iii. Air quality test above aerobic/facultative treatment tanks iv. Air quality tests above the three water feature ponds	sum	1		
1.3	Prime Cost Sum for efluent quity tests at discharge point after remedial action and submitted to NEMA	sum	1		
1.4	Prime Cost sum for Air quality tests after remedial action submitted to NEMA	sum	1		
1.5	Prime cost sum for equipment mechanical and electrical tests	sum	1		
1.6	Insurance of the equipment, the works and the personnel allow 2% of your total on the Summary Page including the above PC Sums	%	2		
<b>PAGE TOTAL CARRIED TO BILL COLLECTION PAGE</b>					

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**BILL 2: Equipment Supply, Fix and related Works**

<b>ITEM No.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>RATE (Kshs)</b>	<b>AMOUNT (KShs.)</b>
2.1	Servicing existing equipment and cleaning diffusers. The price should include the labour of moving 20 of the existing coarse bubble diffusers into the collection chamber, but excluding ancillary pipework.	LS	1		
2.2	Supply and fix 60 new <u>fine bubble tube air diffusers</u> , five in each sedimentation chamber and twelve inside the collection tank. Each must have a rated capacity of at least 6m <sup>3</sup> /hr, service area at least 1.5m <sup>2</sup> and maximum bubble size 4mm. One sample and technical sheet to be submitted to and approved by the engineer.	Nr	52		
2.3	Supply and fix two filter feeder pumps Pedrollo F50/160A or equivalent from Davis & Shirliff or other reputable supplier, to Engineer's approval	Nr	2		
2.4	Supply and fix one sewage crusher /grinder pump of capacity 30m <sup>3</sup> per hour in the collection chamber, suction head 5m and lifting head 10m, from Davis & Shirliff or equivalent reputable distributor	Nr	1		
2.5	Supply and fix two new pressure filter units each of capacity 30,000 liters per hour with new filter medium and connect them in series for two stage pressure filtration. Equipment should be from Davis & Shirliff or equivalent, to Engineer's approval.	Nr	2		
2.6	Supply and fix one <u>oil-free multistage centrifugal blower</u> in parallel to the existing blower with minimum 1,200m <sup>3</sup> /hr capacity from a reputable supplier to Engineer's approval.	Nr	1		
2.7	Supply one new coarse stainless steel trash rack of basket type inside one new fine stainless steel trash rack of similar basket type to drawings and specifications, and service the existing 30 mild steel gratings and covers by cleaning the existing gratings in a mild acid bath and then hot dip galvanising the same. The methodology and profile of the specialized galvanising company must be approved by the Engineer.	LS	1		

2.8	Supply and fix custom made stainless steel filtration box complete with pulley winch (all to detail in drawing) for removing it for cleaning and for changing the coarse sand filter medium.	LS	1		
2.9	Supplying clean washed and graded sand filters for reverse gravity filtration box in 2.8 above before chlorination	Tones	20		
2.10	5.0mm core three gang electrical armoured cable extension for new equipment	m	60		
2.11	Additional 75mm HDPE piping to new pumps and filters including fittings and accessories	m	50		
2.12	Additional 75mm and below GI air piping from new blower including fittings and accessories	m	50		
<b>BILL 2 PAGE 1 TOTAL CARRIED TO BILL COLLECTION PAGE</b>					
2.13	Minimal civil works of 7m <sup>2</sup> , 150mm thick reinforced concrete on 7m <sup>2</sup> , 300mm compacted rock fill for new plinth at the ground level in a noise sheltered area, including 9m <sup>2</sup> of 200mm thick masonry walling on either side of the plinth and 150mm thick reinforced concrete suspended slab 7m <sup>2</sup> over the shelter and a grille door, all to detail.	m2	7		
2.14	Allow for migration of noise generating equipment to the new shelter as directed by the engineer, including dismantling and re-assembling as the need may be.	ls	1		
2.15	Allow for waste water diversion during works including constant exhaustion.	Trips	30		
2.16	Cleaning of the water feature by exhaustion	Trips	25		
2.17	Allow 5% for contingency and miscellaneous	LS	5%		
<b>BILL 2 PAGE 2 TOTAL CARRIED TO BILL COLLECTION PAGE</b>					

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**BILL OF QUANTITIES**

**BILL NO. 2 COLLECTION**

	<b>Amount (Kshs.)</b>
Bill No. 2 Page 1 .....	
Bill No. 2 Page 2 .....	
<b>BILL NO. 2 Equipment Supply, Fix and related Works .....</b>	

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**BILL OF QUANTITIES**

**SUMMARY PAGE**

		<b>Amount (Kshs.)</b>
	Bill No. 1 - PC sums and preliminaries .....  Bill No. 2 - Equipment Supply, Fix and Related Works .....	
	<b>SUB-TOTAL</b> ..... Add 14% VAT .....	
	<b>SUMMARY PAGE GRAND TOTAL TO SIGNATURE PAGE</b> .....	