

Date: 28th May 2019

Ref No. DNC-CTI-G-1905

Attention; Mr. Norio UMEDA
The Resident Engineer
CTI Engineering International Co., Ltd

Subject; THE PROJECT FOR CONSTRUCTION OF NILE RIVER BRIDGE

Re; Submission of Environmental Monitoring Report (Update May,2019)

Dear Sir,

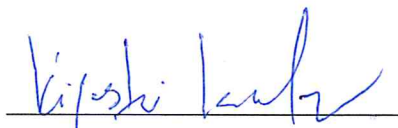
In Accordance with the General Specification 7 (Page : GS-5), we would like to submit
" Environmental Monitoring Report".

Enclosure

- Environmental Monitoring Report (Update May,2019)

Your kind understanding and cooperation will be highly appreciated.

Yours faithfully,


Kiyoshi KUSAKA

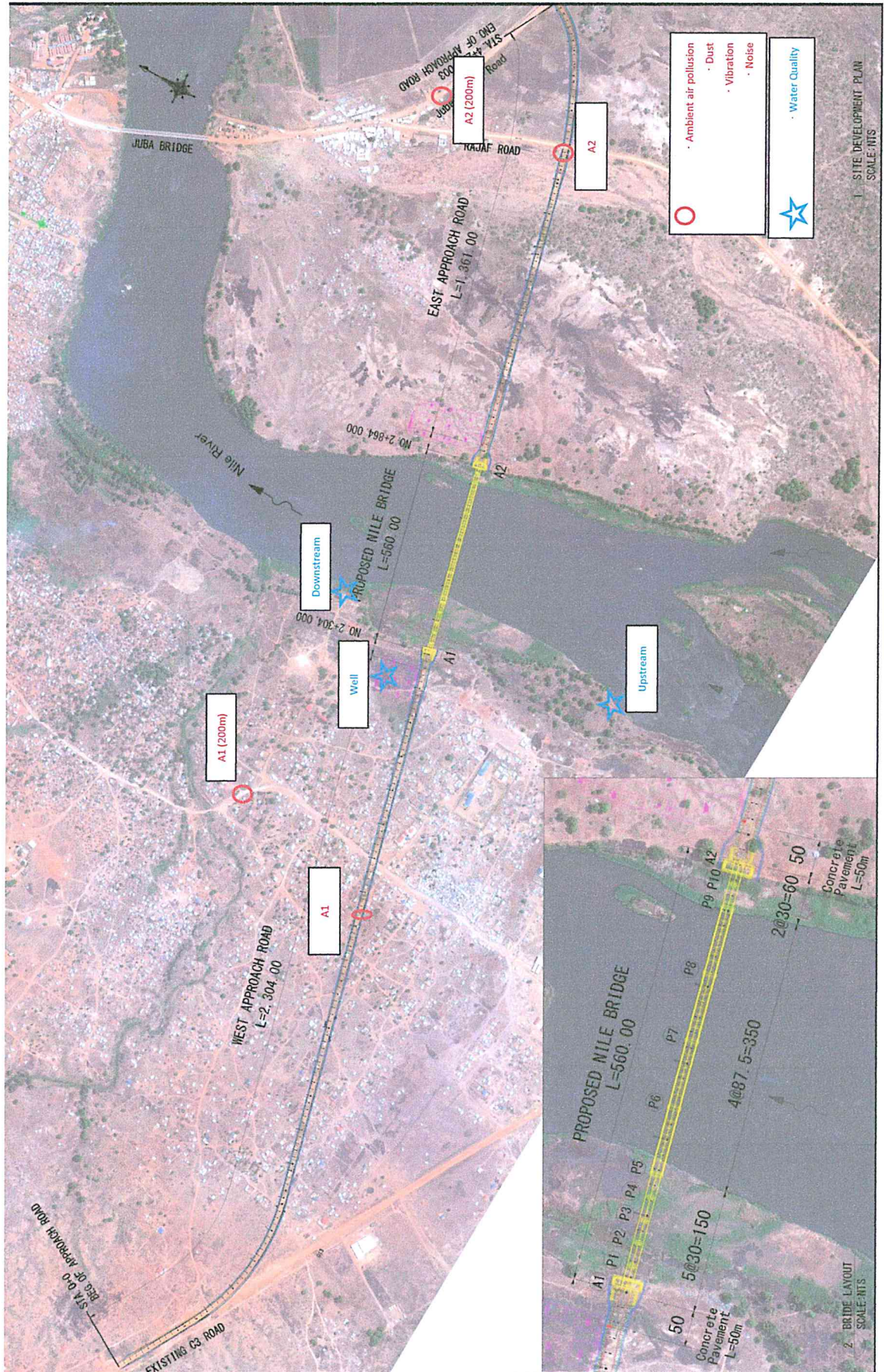
Project Manager

Dai Nippon Construction


28th May 2019

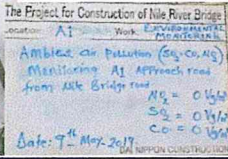
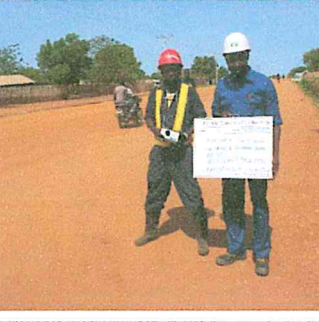
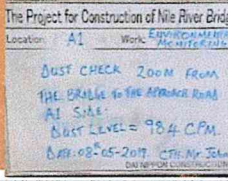
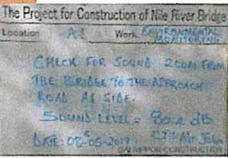
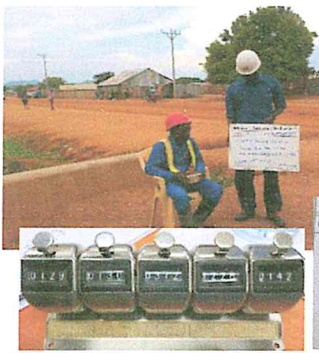
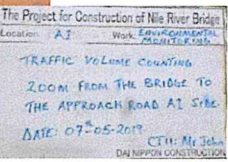
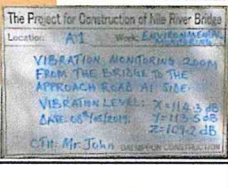
ENVIRONMENTAL MONITORING REPORT
(MAY 2019)

Monitoring Location



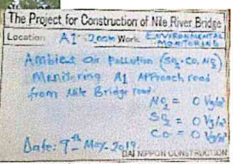
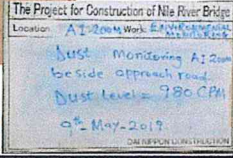
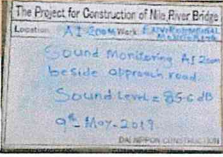
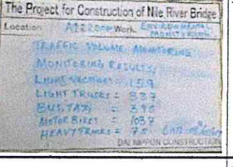
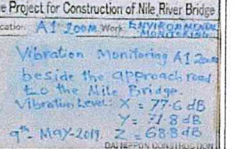
Environmental Monitoring

Result

 	<u>Date</u> 8-9th May 2019 <u>Item</u> Ambient air pollution (CO/SO2/NO2) <u>Location</u> A1 <u>Result</u> <table> <tr> <td>CO :</td> <td>0 v g/m³</td> </tr> <tr> <td>NO2 :</td> <td>0 v g/m³</td> </tr> <tr> <td>SO2 :</td> <td>0 v g/m³</td> </tr> </table>	CO :	0 v g/m ³	NO2 :	0 v g/m ³	SO2 :	0 v g/m ³						
CO :	0 v g/m ³												
NO2 :	0 v g/m ³												
SO2 :	0 v g/m ³												
 	<u>Date</u> 8-9th May 2019 <u>Item</u> Dust monitor <u>Location</u> A1 <u>Result</u> 984 CPM												
 	<u>Date</u> 8-9th May 2019 <u>Item</u> Sound Level <u>Location</u> A1 <u>Result</u> 80.4 dB												
 	<u>Date</u> 8-9th May 2019 <u>Item</u> Traffic Volume <u>Location</u> A1 <u>Result</u> <table> <tr> <td>Heavy Truck</td> <td>130 pcs</td> </tr> <tr> <td>Meduim Truck</td> <td>372 pcs</td> </tr> <tr> <td>Passenger car</td> <td>129 pcs</td> </tr> <tr> <td>Bus & Taxi</td> <td>142 pcs</td> </tr> <tr> <td>Bikes</td> <td>1228 pcs</td> </tr> <tr> <td>Total Vehicles</td> <td>2001 pcs</td> </tr> </table>	Heavy Truck	130 pcs	Meduim Truck	372 pcs	Passenger car	129 pcs	Bus & Taxi	142 pcs	Bikes	1228 pcs	Total Vehicles	2001 pcs
Heavy Truck	130 pcs												
Meduim Truck	372 pcs												
Passenger car	129 pcs												
Bus & Taxi	142 pcs												
Bikes	1228 pcs												
Total Vehicles	2001 pcs												
 	<u>Date</u> 8-9th May 2019 <u>Item</u> Vibration Monitoring <u>Location</u> A1 <u>Result</u> <table> <tr> <td>X :</td> <td>114.3 dB</td> </tr> <tr> <td>Y :</td> <td>113.5 dB</td> </tr> <tr> <td>Z :</td> <td>109.2 dB</td> </tr> </table>	X :	114.3 dB	Y :	113.5 dB	Z :	109.2 dB						
X :	114.3 dB												
Y :	113.5 dB												
Z :	109.2 dB												

Environmental Monitoring

Result

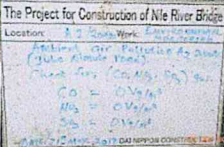
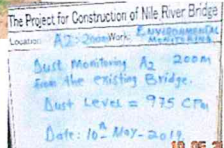
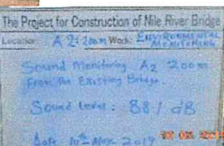
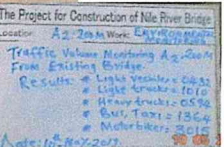
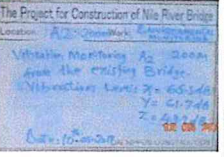
  	<u>Date</u> 8-9th May 2019 <u>Item</u> Ambient air pollution (CO/SO2/NO2) <u>Location</u> A1 200m <u>Result</u> <table> <tr> <td>CO :</td> <td>0 v g/m³</td> </tr> <tr> <td>NO2 :</td> <td>0 v g/m³</td> </tr> <tr> <td>SO2 :</td> <td>0 v g/m³</td> </tr> </table>	CO :	0 v g/m ³	NO2 :	0 v g/m ³	SO2 :	0 v g/m ³						
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NO2 :	0 v g/m ³												
SO2 :	0 v g/m ³												
  	<u>Date</u> 8-9th May 2019 <u>Item</u> Dust monitor <u>Location</u> A1 200m <u>Result</u> 980 CPM												
  	<u>Date</u> 8-9th May 2019 <u>Item</u> Sound Level <u>Location</u> A1 200m <u>Result</u> 85.6 dB												
  	<u>Date</u> 8-9th May 2019 <u>Item</u> Traffic Volume <u>Location</u> A1 200m <u>Result</u> <table> <tr> <td>Heavy Truck</td> <td>75 pcs</td> </tr> <tr> <td>Meduim Truck</td> <td>337 pcs</td> </tr> <tr> <td>Passenger car</td> <td>159 pcs</td> </tr> <tr> <td>Bus & Taxi</td> <td>395 pcs</td> </tr> <tr> <td>Bikes</td> <td>1037 pcs</td> </tr> <tr> <td>Total Vehicles</td> <td>2003</td> </tr> </table>	Heavy Truck	75 pcs	Meduim Truck	337 pcs	Passenger car	159 pcs	Bus & Taxi	395 pcs	Bikes	1037 pcs	Total Vehicles	2003
Heavy Truck	75 pcs												
Meduim Truck	337 pcs												
Passenger car	159 pcs												
Bus & Taxi	395 pcs												
Bikes	1037 pcs												
Total Vehicles	2003												
  	<u>Date</u> 8-9th May 2019 <u>Item</u> Vibration Monitoring <u>Location</u> A1 200m beside road <u>Result</u> <table> <tr> <td>X :</td> <td>77.6 dB</td> </tr> <tr> <td>Y :</td> <td>71.8 dB</td> </tr> <tr> <td>Z :</td> <td>68.8 dB</td> </tr> </table>	X :	77.6 dB	Y :	71.8 dB	Z :	68.8 dB						
X :	77.6 dB												
Y :	71.8 dB												
Z :	68.8 dB												

Environmental Monitoring

Result

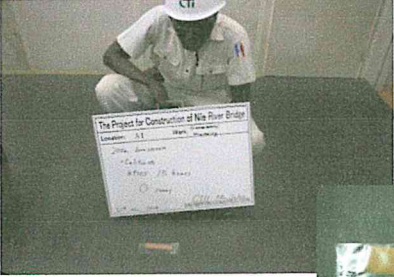
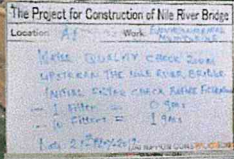
 The Project for Construction of Nile River Bridge Location: A2 Work: Environmental Monitoring Ambient Air Pollution A2 200m from approach road to Nile Bridge. (CaSO₂/NO₂) Initial result: CO = 0.14g/m³ SO₂ = 0.14g/m³ NO₂ = 0.14g/m³ Date: 13th May 2019 C.E. Mr. John	<u>Date</u> 13th May 2019 <u>Item</u> Ambient air pollution (CO/SO₂/NO₂) <u>Location</u> A2 <u>Result</u> <table> <tr> <td>CO :</td><td>0 v g/m³</td></tr> <tr> <td>NO₂ :</td><td>0 v g/m³</td></tr> <tr> <td>SO₂ :</td><td>0 v g/m³</td></tr> </table>	CO :	0 v g/m ³	NO ₂ :	0 v g/m ³	SO ₂ :	0 v g/m ³						
CO :	0 v g/m ³												
NO ₂ :	0 v g/m ³												
SO ₂ :	0 v g/m ³												
 The Project for Construction of Nile River Bridge Location: A2 Work: Environmental Monitoring Dust Monitoring A2 Approach road. Dust Level: 978 CPM Date: 9th May 2019 C.E. Mr. John	<u>Date</u> 9-10th May 2019 <u>Item</u> Dust monitor <u>Location</u> A2 <u>Result</u> 978 CPM												
 The Project for Construction of Nile River Bridge Location: A2 Work: Environmental Monitoring Sound Monitoring A2 Approach road. Sound Level: 78.9 dB Date: 9th May 2019 C.E. Mr. John	<u>Date</u> 9-10th May 2019 <u>Item</u> Sound Level <u>Location</u> A2 <u>Result</u> 78.9 dB												
 The Project for Construction of Nile River Bridge Location: A2 Work: Environmental Monitoring Traffic Volume Counting A2 Approach road. Light vehicle = 0122 Light Truck = 0171 Heavy Truck = 0086 Bus & Taxi = 0122 Bikes = 0896 Date: 9th May 2019 C.E. Mr. John	<u>Date</u> 9-10th May 2019 <u>Item</u> Traffic Volume <u>Location</u> A2 <u>Result</u> <table> <tr> <td>Heavy Truck</td><td>86 pcs</td></tr> <tr> <td>Medium Truck</td><td>171 pcs</td></tr> <tr> <td>Passenger car</td><td>122 pcs</td></tr> <tr> <td>Bus & Taxi</td><td>122 pcs</td></tr> <tr> <td>Bikes</td><td>896 pcs</td></tr> <tr> <td>Total Vehicles</td><td>1397</td></tr> </table>	Heavy Truck	86 pcs	Medium Truck	171 pcs	Passenger car	122 pcs	Bus & Taxi	122 pcs	Bikes	896 pcs	Total Vehicles	1397
Heavy Truck	86 pcs												
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Total Vehicles	1397												
 The Project for Construction of Nile River Bridge Location: A2 Work: Environmental Monitoring Vibration Monitoring A2 Approach road. Vibration level: X = 74.7 dB Y = 75.4 dB Z = 87 dB Date: 9th May 2019 C.E. Mr. John	<u>Date</u> 9-10th May 2019 <u>Item</u> Vibration Monitoring <u>Location</u> A2 <u>Result</u> <table> <tr> <td>X :</td><td>74.7 dB</td></tr> <tr> <td>Y :</td><td>75.4 dB</td></tr> <tr> <td>Z :</td><td>87 dB</td></tr> </table>	X :	74.7 dB	Y :	75.4 dB	Z :	87 dB						
X :	74.7 dB												
Y :	75.4 dB												
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Environmental Monitoring
Result

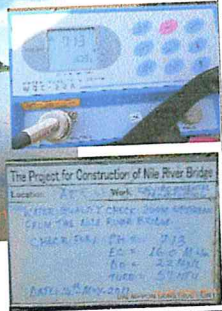
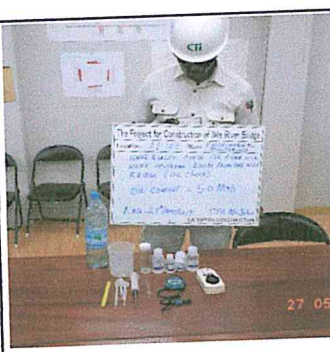
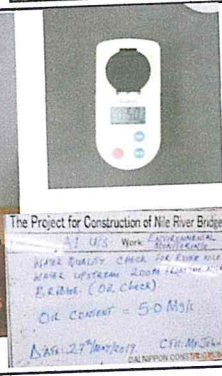
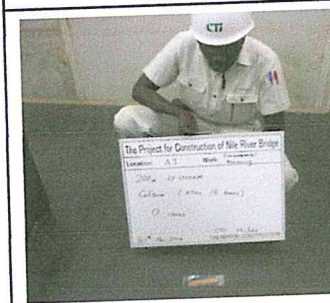
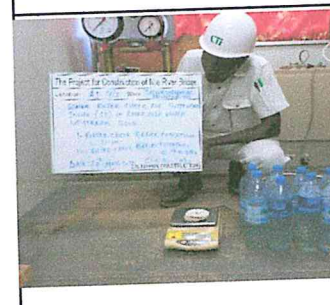
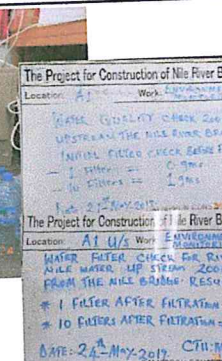
 	<u>Date</u> 21st May 2019 <u>Item</u> Ambient air pollution(CO/SO2/NO2) <u>Location</u> A2 (200m) JUBA-NIMULE ROAD <u>Result</u> <table> <tr> <td>CO :</td> <td>0 v g/m³</td> </tr> <tr> <td>NO2 :</td> <td>0 v g/m³</td> </tr> <tr> <td>SO2 :</td> <td>0 v g/m³</td> </tr> </table>	CO :	0 v g/m³	NO2 :	0 v g/m³	SO2 :	0 v g/m³						
CO :	0 v g/m³												
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  	<u>Date</u> 9-10th May 2019 <u>Item</u> Dust monitor <u>Location</u> A2 (200m) JUBA-NIMULE ROAD <u>Result</u> 975 CPM												
  	<u>Date</u> 9-10th May 2019 <u>Item</u> Sound Level <u>Location</u> A2 (200m) JUBA-NIMULE ROAD <u>Result</u> 88.1 dB												
  	<u>Date</u> 9-10th May 2019 <u>Item</u> Traffic Volume <u>Location</u> A2 (200m) JUBA-NIMULE ROAD <u>Result</u> <table> <tr> <td>Heavy Truck</td> <td>594 pcs</td> </tr> <tr> <td>Medium Truck</td> <td>1010 pcs</td> </tr> <tr> <td>Passenger car</td> <td>432 pcs</td> </tr> <tr> <td>Bus & Taxi</td> <td>1364 pcs</td> </tr> <tr> <td>Bikes</td> <td>3015 pcs</td> </tr> <tr> <td>Total Vehicles</td> <td>6415</td> </tr> </table>	Heavy Truck	594 pcs	Medium Truck	1010 pcs	Passenger car	432 pcs	Bus & Taxi	1364 pcs	Bikes	3015 pcs	Total Vehicles	6415
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  	<u>Date</u> 9-10th May 2019 <u>Item</u> Vibration Monitoring <u>Location</u> A2 (200m) JUBA-NIMULE ROAD <u>Result</u> <table> <tr> <td>X :</td> <td>65.5 dB</td> </tr> <tr> <td>Y :</td> <td>61.7 dB</td> </tr> <tr> <td>Z :</td> <td>49.7 dB</td> </tr> </table>	X :	65.5 dB	Y :	61.7 dB	Z :	49.7 dB						
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Environmental Monitoring

Result

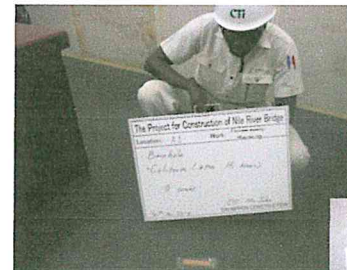
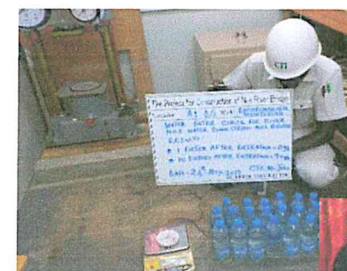
  The Project for Construction of Nile River Bridge Location: A1 - 200m Work - Environmental Monitoring WATER QUALITY CHECK 200m S/E (Downstream) from the River Bridge CHECK FOR: pH = 7.04 EC = 16.2 M/m DO = 2.47 mg/l TURB = 28 NTU DATE: 15th May 2019 CTM: Mr. John	<u>Date</u> 15th May. 2019 <u>Item</u> Water Quality (pH, Turbidity, EC, DO) <u>Location</u> Downstream <u>Result</u> pH: 7.04 v g/m³ Turbidity: 28 NTU EC: 16.2 ms/m DO: 2.47 mg/l
  The Project for Construction of Nile River Bridge Location: A1 - 200m Work - Environmental Monitoring WATER QUALITY CHECK 200m S/E (Downstream) from the River Bridge CHECK FOR: pH = 7.04 EC = 16.2 M/m DO = 2.47 mg/l TURB = 28 NTU DATE: 27th May 2014 CTM: Mr. John	<u>Date</u> 27th May 2014 <u>Item</u> Water Quality (OIL) <u>Location</u> Downstream <u>Result</u> Less than 5 mg/l
  The Project for Construction of Nile River Bridge Location: A1 - 200m Work - Environmental Monitoring WATER QUALITY CHECK 200m S/E (Downstream) from the River Bridge CHECK FOR: pH = 7.04 EC = 16.2 M/m DO = 2.47 mg/l TURB = 28 NTU DATE: 28th May 2019 CTM: Mr. John	<u>Date</u> 28th May 2019 <u>Item</u> Water Quality (Coliform) <u>Location</u> Downstream <u>Result</u> 0 Count
  The Project for Construction of Nile River Bridge Location: A1 - 200m Work - Environmental Monitoring WATER QUALITY CHECK 200m S/E (Downstream) from the River Bridge CHECK FOR: pH = 7.04 EC = 16.2 M/m DO = 2.47 mg/l TURB = 28 NTU DATE: 21st--24th May 2019 CTM: Mr. John	<u>Date</u> 21st--24th May 2019 <u>Item</u> Water Quality (SS) <u>Location</u> Downstream <u>Result</u> A(10l) : 9911 g B : 10000 g SS = (B-A)/10l = 89.0 mg/l

Environmental Monitoring
Result

 	<u>Date</u> 14th May. 2019 <u>Item</u> Water Quality (pH, Turbidity, EC, DO) <u>Location</u> Upstream <u>Result</u> pH: 7.3 v g/m³ Turbidity: 59 NTU EC: 16 ms/m DO: 2.2 mg/l
 	<u>Date</u> 27th May 2019 <u>Item</u> Water Quality (OIL) <u>Location</u> Upstream <u>Result</u> 5 mg/l
 	<u>Date</u> 28th May 2019 <u>Item</u> Water Quality (Coliform) <u>Location</u> Upstream <u>Result</u> 0 Count
 	<u>Date</u> 21st-24th May 2019 <u>Item</u> Water Quality (SS) <u>Location</u> Upstream <u>Result</u> A(10l) : 9911 g B : 10000 g SS=(B-A)/10l= 89.0 mg/l

Environmental Monitoring

Result

  The Project for Construction of Nile River Bridge Location: A1 (Well) Work: Environmental Monitoring WATER QUALITY CHECK FOR BASIC PHYSICAL WATER AT A1 SINE CHECK FOR: PH = 7.33 DO = 2.25 mg/l Date 15/05/2019 EC = 117.8 ms/m Turb: 0 NTU CTI: Mr. John	<u>Date</u> 15th May. 2019 <u>Item</u> Water Quality (pH, Turbidity, EC, DO) <u>Location</u> A1 Well <u>Result</u> pH: 7.33 v g/m³ Turbidity: 0 NTU EC: 117.8 ms/m DO: 2.25 mg/l
  The Project for Construction of Nile River Bridge Location: A1 Work: Environmental Monitoring WATER QUALITY CHECK FOR BASIC PHYSICAL WATER AT A1 SINE (Oil Check) Oil Content = 0 M/L Date: 27/05/2014 CTI: Mr. John	<u>Date</u> 27th May. 2014 <u>Item</u> Water Quality (OIL) <u>Location</u> A1 Well <u>Result</u> Less than 0 mg/l
  The Project for Construction of Nile River Bridge Location: A1 Work: Environmental Monitoring WATER QUALITY CHECK FOR BASIC PHYSICAL WATER AT A1 SINE (Coliform Check) Coliform Count = 0 Count Date: 28/05/2019 CTI: Mr. John	<u>Date</u> 28th May 2019 <u>Item</u> Water Quality (Coliform) <u>Location</u> A1 Well <u>Result</u> 0 Count
  The Project for Construction of Nile River Bridge Location: A1 Work: Environmental Monitoring WATER QUALITY CHECK FOR BASIC PHYSICAL WATER AT A1 SINE (SS Check) SS = 0.0 mg/l Date: 21st-24th May 2019 CTI: Mr. John	<u>Date</u> 21st--24th May 2019 <u>Item</u> Water Quality (SS) <u>Location</u> A1 Well <u>Result</u> A(10ℓ) : 0 g B : 0 g SS=(B-A)/10ℓ= 0.0 mg/l

4. Monitoring Record

No.				2019											
				Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
1	Sulphur Dioxides (SO2)	A1	vg/m3		0										
		A1 (200m)	vg/m3		0										
		A2	vg/m3		0										
		A2 (200m)	vg/m3		0										
2	Nitrogen Dioxides (NO2)	A1	vg/m3		0										
		A1 (200m)	vg/m3		0										
		A2	vg/m3		0										
		A2 (200m)	vg/m3		0										
3	Carbon Monoxide (CO)	A1	vg/m3		0										
		A1 (200m)	vg/m3		0										
		A2	vg/m3		0										
		A2 (200m)	vg/m3		0										
4	Dust	A1	CPM		984										
		A1 (200m)	CPM		980										
		A2	CPM		978										
		A2 (200m)	CPM		975										
5	Sound Level (noice)	A1	dB		80.4										
		A1 (200m)	dB		85.6										
		A2	dB		78.9										
		A2 (200m)	dB		88.1										
6	Vibration	A1	X	dB		114.3									
			Y	dB		113.5									
			Z	dB		109.2									
		A1 (200m)	X	dB		77.6									
			Y	dB		71.8									
			Z	dB		68.8									
		A2	X	dB		74.7									
			Y	dB		75.4									
			Z	dB		87									
		A2 (200m)	X	dB		65.5									
			Y	dB		61.7									
			Z	dB		49.7									
7	Traffic Volume 9:00 - 16:00	Veichle		nos.		129									
		Heavy Truck		nos.		130									
		Light Truck	A1	nos.		372									
		Bike		nos.		1228									
		Bus & Taxi		nos.		142									
		Total		nos.		2001									
		Veichle		nos.		159									
		Heavy Truck		nos.		75									
		Light Truck	A1 (200m)	nos.		337									
		Bike		nos.		1037									
		Bus & Taxi		nos.		395									
		Total		nos.		2003									
		Veichle		nos.		122									
		Heavy Truck		nos.		86									
		Light Truck	A2	nos.		171									
		Bike		nos.		896									
		Bus & Taxi		nos.		122									
		Total		nos.		1397									
		Veichle		nos.		432									
		Heavy Truck		nos.		594									
		Light Truck	A2 (200m) JUBA-NIMULE ROAD	nos.		1010									
		Bike		nos.		3015									
		Bus & Taxi		nos.		1364									
		Total		nos.		6415									

[illegible]