

DIGESTION TANK No.1 REBUILD						
Item	Description	Unit	Qty	Rate	Amount (exclusive of VAT)	NOTES
	These Provisional Bill of quantities have been measured in accordance with Latest Edition of the Standard System of Measuring Builder's Work. Where discrepancies arise the relevant party must be informed immediately.					
	Note: Unless the scope of work changes no extras will be entertained					
	This document is to be filled in completely and all supporting documentation requested is to be submitted. Failure to adhere to these instructions by the Tenderer may result in a disqualification.					
	NB: The items in the Bill are not in sequential order and by no means includes all events on the scope of works, but is rather items based. It is the responsibility of the contractor to prioritize the events in sequential order on his program and to ensure that all scope of work requirements is accounted for on this bill before submitting the tender. All material is subject to remeasure.					
1.00	<b>PRELIMINARY AND GENERAL :</b>					
1.01	Safety induction	Day	1			
1.02	Medical Examination	LS	1			
1.03	Access Card	LS	1			
1.04	Safety equipment and PPE	LS	1			
1.05	Site establishment	LS	1			
1.06	HIRA training (Safety Officer/Supervisor)	Day	2			
1.07	Accommodation	LS	1			
1.08	Living Out Allowances	LS	1			
1.09	Staff Transport	LS	1			
1.10	Site Consumables	LS	1			
1.11	Construction Manager for duration of project	LS	1			
1.12	Supervision for duration of project	LS	1			
1.13	Safety Officer for duration of project	LS	1			
1.14	ECSA Registered Pr. Engineer/Technologist as Competent Person to sign off on all the designs and all Civil Structural Requirements	LS	1			
1.15	Certified and Registered SAIW Welding and Fabrication Level 2 Inspector. This person to do site/shop quality verification and assurance.	LS	1			
1.16	Hire of Cranes	LS	1			
1.17	Provision for Pumping of sludge that might spill in the area from production processes or and construct temporary concrete brick spill prevention wall around the work area of the tank, especially the launder and reactor side. This is to prevent spillages to the work area from production. Barricade around work area and safety/warning signage. NB: this temporary concrete brick wall to be removed after construction of the tank is finished.	LS	1			
1.18	Dehumidifier	LS	1			
1.19	Extraction Fan	LS	1			
1.20	Hire of Compressor	LS	1			

1.21	QC/NDT Services inclusive of all the required Quality Test in compliance with API650 and in agreement with the QCP, these includes the vacuum test, X-ray test on all verticals - 100%, and all horizontal -100% and all Tee Joints -100%, MPI on all nozzles - 100% and all manhole 100%, PT (Dye Pen) on shell to floor joint -100%, DFT reports, rubber pull test reports, shore hardness test reports, spark test reports on new rubber applied, certificate of fitness. Provision for the approved PQR (Procedure Qualification Record), WPS (Welding Procedure Specification) & WPQ (Welder Performance Qualifications) documentation in compliance with API650. <b>NB:</b> Please note that there will be no hydrostatic test done.	LS	1			
	<b>Bill No. 1.00 excluding VAT carried forward to Summary Page</b>					
<b>2.00</b>	<b><u>CONCRETE PLINTHS &amp; CIVIL REFURBISHMENT</u></b>					
2.01	Saw-cut 20mm recess around damaged areas.	m	40			
2.02	Break/scabble contaminated concrete 50mm deep to sound concrete.	m <sup>3</sup>	5			
2.03	Remove all corrosion from reinforcement by mechanical abbrasion or other efficient approved method. Measured as area of wall section.	m <sup>2</sup>	5			
2.04	Supply and install high tensile rebar and reinstate damaged reinforcement (if required. All corroded rebar to be replaced with similar rebar. Fokor representative to confirm and approve replacement of such rebars).	kg	3			
2.05	Supply and apply a corrosion inhibitor, primer and bonding agent on all exposed steel reinforcement and concrete surfaces, measured as area of section.	m <sup>2</sup>	80			
2.06	Supply, fix and strip 20mm shutter-ply formwork, complete with propping.	m <sup>2</sup>	45			
2.07	Supply and cast High-Early-Strength concrete in which the amount of tricalcium aluminate is not more than 5% and the sum of twice the Tricalcium Aluminate and Tetra calcium aluminoferrite is less than 25% such as sulf 8 CEM.	m <sup>3</sup>	10			
2.08	Supply and cast free-flowing, high strength, cementatious micro concrete with non-shrink properties such as SikaGrout 295 ZA or similar prior approved product.	m <sup>3</sup>	2			
2.09	Supply and cast conventional concrete class (40/19).	m <sup>3</sup>	5			
2.10	Supply and apply concrete curing agent/compound.	m <sup>2</sup>	5			
2.11	Ensure level promptness	LS	1			
	<b>Bill No. 2.00 excluding VAT carried forward to Summary Page</b>					
<b>3.00</b>	<b><u>Re-Design, Fabricate, Supply and Install New Tank</u></b>					
3.01	Re-design as per API 650 specification unless otherwise stated.	LS	1			
3.02	Grillage Beam	Tons	1.5			
3.03	Base/floor Plate	Tons	0.4			
3.04	Tank Shell with Baffles	Tons	15			
3.05	Roof Structure	Tons	5			
3.06	Install 904L - 2.5m x 2.5m x 6mm wear plate on pedestal together with Brick Liners	LS	1			
3.07	Manholes, Nozzles, Brackets, etc.	Tons	1			
3.08	Install Handrails, etc.	LS	1			

3.09	Re-installation of the free issued agitator structure. This cost is to cover also the 4 off new beams (150x250x10 – 6m each) and its grating panels. Installation of the free issued flexi-pipes.	LS	1			
3.10	Installing the old/free issued Agitator, Motor and Geabox, Commissioning, etc.	LS	1			
3.11	Gaskets for all tank shell manholes and nozzles	LS	1			
3.12	Manhole covers, nozzle blanks, etc.	LS	1			
3.13	Corrosion Protection -The quantities listed are indicative. The Tenderer shall confirm these quantities in his offer.	M <sup>2</sup>	310			
<b>Bill No. 3.00 excluding VAT carried forward to Summary Page</b>						
4.00	<b><u>Design, Fabricate and Install Launderers</u></b>					
4.01	Design and Fabricate and install launderers (904L SS)connecting Tank1 to the reactor and launder connecting Tank 1 to Tank 2 The launder from reactor to Digestion Tank No.1 is 6mm thick 904L stainless steel material. It is flanged and bolted at the reactor side as well as at the tank side The launder from Digestion Tank No.1 to Digestion Tank No.2 is 6mm thick mild steel material, which is flanged, and it gets bolted both sides. The launder from Digestion Tank No.1 to Digestion Tank No.2 must be rubber lined by the 5mm Butyl rubber and be brick lined by 240mm x 115mm x 40mm carbon brick.	LS	1			
<b>Bill No. 4.00 excluding VAT carried forward to Summary Page</b>						
5.00	<b><u>Rubber lining</u></b>					
5.01	Grit blasting Inclusive of grit, compressor, diesel, labour, etc.	M <sup>2</sup>	350			
5.02	Rubber lining & rubber lining material (Lined Surface - Contractor to calculate and verify quantity inclusive of overlaps and wastage and submit detail of calculation with tender) Inclusive of rubber, primer, solutions, labour, etc.	M <sup>2</sup>	290			
5.03	Nozzles, Blanks flanges & Other attachments	LS	1			
5.04	Over lap & cutting allowance (Tenderer to calculate)	LS	1			
5.06	Security strips (Tenderer to indicate Size & Calculate)	LS	1			
<b>Bill No. 5.00 excluding VAT carried forward to Summary Page</b>						
6.00	<b><u>Brick lining</u></b>					
6.01	Brick lining of the entire Digestion Tank No.1 (Shell Wall, Floor and Manholes) <b>(NB: Brick Lined Surface - Contractor to calculate and verify quantity and wastage and submit detail of calculation with tender)</b> - Supply of Carbon Brick - 240 x 115 x 65	M <sup>2</sup>	220			
<b>Bill No.6.00 excluding VAT carried forward to Summary Page</b>						
7.00	<b><u>Provide as-built drawings</u></b>	LS	1			
7.00	<b>Bill No.7.00 excluding VAT carried forward to Summary Page</b>					
<b>DIGESTION TANK NO1 REBUILD FINAL SUMMARY</b>						
<b>Bill No. 1 Preliminary and General</b>						
<b>Bill No. 2 Concrete Plinths and Civil Refurbishment</b>						
<b>Bill No. 3 Re-Design, Fabricate, Supply and Install</b>						
<b>Bill No. 4 Design, Fabricate and Install Launderers</b>						
<b>Bill No. 5 Rubber Lining</b>						
<b>Bill No. 6 Brick Lining</b>						
<b>Bill No. 7 Provide as-built drawings</b>						
<b>Total excluding VAT carried to form of tender</b>						

<b>TOTAL PROJECT AMOUNT DUE (excluding VAT)</b>	
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