

CITY OF TSHWANE
WATER AND SANITATION DEPARTMENT

CONTRACT NO: WS 15 2024/25

**TENDER FOR THE APPOINTMENT OF A CONSULTING ENGINEERING FIRM TO
RENDER PROFESSIONAL ENGINEERING SERVICES FOR THE REPLACEMENT
AND COMPLETION OF THE TEMBA WASTEWATER TREATMENT WORKS AND
UPGRADE OF BABELEGI WASTE WATER TREATMENT WORKS FOR A PERIOD
OF 36 MONTHS FROM COMMENCEMENT DATE**

T2.3 MECHANICAL TECHNICAL SCHEDULES

PART T2.3: TECHNICAL SCHEDULES

The proper completion of the technical schedules under this section is critical.

Once the Contract has been awarded to the successful bidder, equipment shall be supplied as recorded in the technical schedules and the Contractor's Proposal, unless written acceptance of any variances thereto is issued by the Engineer.

Tenderers shall note that equipment in accordance with the relevant Specifications and with a proven track record with local operational installations shall be proposed as required. Failure to adhere to this requirement implies that the equipment offered does not meet tender prescriptions and may lead to disqualification of the bid.

SCHEDULES:

T2.3.2 TECHNICAL SCHEDULES (MECHANICAL WORKS)

MECHANICAL TECHINCAL DATA SCHEDULES

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PREAMBLE TO THE TECHNICAL DATA SCHEDULES

In completing the Technical Schedules, Tenderers shall take, inter alia, the following into consideration:

1. GENERAL

- (a) Attention is drawn to the following sections of the tender documents that are to be read and referred to in conjunction with the Technical Schedules:
 - (i) Particular Specifications (Standard Specifications) for Mechanical Works
 - (ii) PSM: Project Specifications (Detail Specifications) for Mechanical Works
- (b) General directions and descriptions of work and material given in the Project Specifications are not necessarily repeated in the Technical Schedules. Reference must be made to the documents in question for this information.
- (c) The Technical Schedules are to be fully completed in black ink. The use of correcting fluids is not acceptable and all errors and amendments must be crossed out with a single line and replaced with an initialled entry.

2. INFORMATION TO BE SUPPLEMENTED

All Technical Schedules concerning equipment incorporating proprietary brand products or units, shall be fully supplemented by the inclusion of applicable brochures, pamphlets, additional explanatory specifications, descriptions or notes in that order of availability and shall be submitted with a covering letter and bound separately, to the Engineer for comments and approval.

3. TECHNICAL SCHEDULE PRO-FORMAS

The Technical Schedules that follow are pro-formas only. Data of specific equipment shall be entered on copies of these pro-formas. One pro forma shall be used for each separate item of equipment.

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Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS DEGRITTING PUMP SYSTEM DEGRITTING PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE		PAGE	
			ENGINEER: MIMSHACK PARTNERS		REV. 0	
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
Rev.	Revision Description	By	REV.	APP.	Aut.	Date
B	FOR APPROVAL	EN				08/03/2023
Instructions on Filling Out This Form I - Potential Suppliers should fill out the left column of the "Proposed" field with one of the following options: "MR" (Meets Requirements) or "D" (Deviation). II - Suppliers must list any items marked "D" and any other clarifications in the "Deviations List", of the Technical Requisition. To include information in addition to the contents of this DATA SCHEDULE, suppliers should proceed in the same manner. III - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.						
Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Submersible-sludge pump			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	1435			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	75			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			

Item	Description	Unit	Specified	Proposed	Item
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	N/A		
1.21	Suction & Discharge pressure gauges	Yes/No	No		
1.22	Pump Painting	Yes/No	No		
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	3		
2.3	Rotational speed	rpm	1435		
2.4	Full load current	A			
2.5	Voltage	V	400		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.4		
3.2	Delivery at duty point	L/s	15.7		
3.3	Head at duty point	m	10		
3.4	Guaranteed efficiency at duty point	%	57		
3.5	Power absorbed at duty point	KW	2.32		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion/abrasion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-			
6	HEALTH & SAFETY				
6.1	Noise	dB			

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

6.2	Vibration	Hz			
Explanatory Notes 01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification. 02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column. 03 -Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves. Deviations from specification: List all the deviations from the specification REFERENCE DOCUMENTS					

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TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION RAW SEWAGE PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE		PAGE 	
			ENGINEER: MIMSHACK PARTNERS		REV. 0	
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
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Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Immersible-sludge pump			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	1490			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	127 x 110 mm Dia			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			

Item	Description	Unit	Specified	Proposal	
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	N/A		
1.21	Suction & Discharge pressure gauges	Yes/No	No		
1.22	Pump Painting	Yes/No	No		
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	132		
2.3	Rotational speed	rpm			
2.4	Full load current	A			
2.5	Voltage	V	400		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	l/s	1.1		
3.2	Delivery at duty point	L/s	360		
3.3	Head at duty point	m	25		
3.4	Guaranteed efficiency at duty point	%	76		
3.5	Power absorbed at duty point	KW	121		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion/abrasion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-	ISO 9906 Grade 2 (if needed)		
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

03 - Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves.

Deviations from specification:

List all the deviations from the specification

REFERENCE DOCUMENTS

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		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION INLET ISOLATION VALVE - TECHNICAL SCHEDULE		CLIENT CITY OF TSHWANE		PAGE 		
		ENGINEER: MIMSHACK PARTNERS		REV. 0		
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Supplier:			Proposal:			
Identification (TAG):			Quantity:			
Item	Description	Unit	Specified	Proposed		
1	VALVE DETAILS					
1.1	Manufacturer.....	-				
1.2	Model	-				
1.3	Size	mm	500			
1.4	Gate Type (wedge, resilient seal, knife, etc).....	-	RSV			
1.5	Operating Pressure.....	bar	1			
1.6	Rated Pressure.....	bar	10			
1.7	Body Test pressure.....	bar				
1.8	Seat Test pressure.....	bar				
1.9	Flanges (BS, SABS, ANSI, etc.)	-	SANS 1123 T1000/3			
1.10	Raised Faced Flanges.....	(Yes/No)	Yes			
1.11	Face to Face distance.....	mm				
1.12	Hand wheel operated.....	(Yes/No)	Yes			
1.13	Gearbox.....	(Yes/No)	No			
1.14	Rising-, non-rising spindle.....	-	Rising spindle			
1.15	Welded-, bolted bonnet.....	-	Bolted			
1.16	Actual inner bore.....	mm				
1.17	Loss coefficient $K = (h_m)/(V^2/(2g))$	K				

2.1	Manufacturer.....	-	N/A		
2.2	Motor shaft output at site conditions.....	kW	N/A		
2.3	Motor torque.....	N.m	N/A		
2.4	Rotational speed.....	rpm	N/A		
2.5	Full load current.....	A	N/A		
2.6	Voltage.....	V	N/A		
2.7	Enclosure rating (IP rating).....	IP	N/A		
2.8	Communication Module (Digital).....	-	N/A		
3	CONSTRUCTION MATERIALS				
3.1	Body material (CI, DI, CS, etc).....	-	Cast Iron		
3.2	Body Seat Trim (Stainless Steel, Copper Alloy, etc)	-			
3.3	Door material (CS, etc).....	-			
3.4	Door Seat Trim (Stainless Steel, Copper Alloy, etc)	-			
3.5	Type of interior lining (EPDM, FBE, etc).....	-			
4	GENERAL DETAILS				
4.1	Total weight of valve (valve and actuator).....	kg			
4.2	Main dimensions of valve.....	mm			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

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		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION DISCHARGE ISOLATION VALVE - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE		PAGE	
			ENGINEER: MIMSHACK PARTNERS		REV. 0	
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
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Supplier:			Proposal:			
Identification (TAG):			Quantity:			
Item	Description	Unit	Specified	Proposed		
1	VALVE DETAILS					
1.1	Manufacturer.....	-				
1.2	Model	-				
1.3	Size	mm	400			
1.4	Gate Type (wedge, resilient seal, knife, etc).....	-	RSV			
1.5	Operating Pressure.....	bar	1			
1.6	Rated Pressure.....	bar	10			
1.7	Body Test pressure.....	bar				
1.8	Seat Test pressure.....	bar				
1.9	Flanges (BS, SABS, ANSI, etc.)	-	SANS 1123 T1000/3			
1.10	Raised Faced Flanges.....	(Yes/No)	Yes			
1.11	Face to Face distance.....	mm				
1.12	Hand wheel operated.....	(Yes/No)	Yes			
1.13	Gearbox.....	(Yes/No)	No			
1.14	Rising-, non-rising spindle.....	-	Rising spindle			
1.15	Welded-, bolted bonnet.....	-	Bolted			
1.16	Actual inner bore.....	mm				
1.17	Loss coefficient K = (hm)/(V ² /(2g))	K				
2	ACTUATOR DETAILS					
2.1	Manufacturer.....	-	N/A			
2.2	Motor shaft output at site conditions.....	kW	N/A			

2.3	Motor torque.....	N.m	N/A		
2.4	Rotational speed.....	rpm	N/A		
2.5	Full load current.....	A	N/A		
2.6	Voltage.....	V	N/A		
2.7	Enclosure rating (IP rating).....	IP	N/A		
2.8	Communication Module (Digital).....	-	N/A		
3	CONSTRUCTION MATERIALS				
3.1	Body material (CI, DI, CS, etc).....	-	Cast Iron		
3.2	Body Seat Trim (Stainless Steel, Copper Alloy, etc)	-			
3.3	Door material (CS, etc).....	-			
3.4	Door Seat Trim (Stainless Steel, Copper Alloy, etc)	-			
3.5	Type of interior lining (EPDM, FBE, etc).....	-			
4	GENERAL DETAILS				
4.1	Total weight of valve (valve and actuator).....	kg			
4.2	Main dimensions of valve.....	mm			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

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		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION NON-RETURN VALVE - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE		PAGE 	
			ENGINEER: MIMSHACK PARTNERS		REV. 0	
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Supplier:			Proposal:			
Identification (TAG):			Quantity:			
Item	Description	Unit	Specified	Proposed		
1	VALVE DETAILS					
1.1	Manufacturer	-				
1.2	Model #	-				
1.3	Size	mm	400			
1.4	Door Type (single, double, nozzle, etc)	-	Double door			
1.5	Method of closing (nozzle, counter weight, spring, etc)	-	Counterweight			
1.6	Operating Pressure	bar				
1.7	Rated Pressure	bar	10			
1.8	Body Test pressure	bar				
1.9	Seat Test pressure	bar				
1.10	End Connections (Flanged, Wafer, Screwed)	-	Flanged			
1.11	Face to Face distance	mm				
1.12	Actual inner bore	mm				
1.13	Loss coefficient $K = (h_m)/(V^2/(2g))$	K				
2	CONSTRUCTION MATERIALS					
2.1	Body material (CI, DI, CS, etc)	m				
2.2	Body Seat Trim (Stainless Steel, Copper Alloy, etc)	-				
2.3	Door material (CS, etc)	-				
2.4	Door Seat Trim (Stainless Steel, Copper Alloy, etc)	-				
2.5	Type of interior lining (EPDM, FBE, etc)	-				
3	GENERAL DETAILS					
3.1	Total weight of valve (valve and actuator)	kg				

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3.2	Main dimensions of valve	mm			
3.3	Life expectancy (# open/close cycles)	No			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

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		Temba-Babelegi WWTW						
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION STEEL PIPE - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE			PAGE 		
			ENGINEER: MIMSHACK PARTNERS			REV. 0		
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT								
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Supplier:				Proposal:				
Identification (TAG):				Quantity:				
Item	Description			Unit	Specified		Proposed	
1	PIPE DETAILS							
1.1	Type of pipe (SANS 719, SANS 62-1, etc.)			-	SANS 719			
1.2	Pipe nominal bore			mm	400-500			
1.3	Pipe wall thickness			mm	6			
1.4	Actual outer diameter			mm				
1.5	Actual inner diameter			mm				
1.6	Material grade (X42, X52, etc.)			-	Grade C			
1.7	Operating pressure rating			bar	10			
2	COATING & LINER DETAILS							
2.1	Type of exterior coating (bitumen, PU, etc.)			-	FBE or Paint			
2.2	Type of interior coating (sintakote, FBE, etc)			-				
3	PIPE TESTING							
3.1	Hydraulic pipe testing			Yes/No				
3.2	Test pressure			bar				
3.3	X-ray testing			Yes/No				
4	GENERAL DETAILS							
4.1	Total length of pipe required			m				
4.2	Pipe ends (flanged, bevelled, etc.)			-	Flanged			
4.3	Connection Type (SANS 1123, BS4504, BSP, NPT)			-	SANS 1123 T1000/3			
5	COATING & LINER DETAILS							
5.1	Exterior coating thickness			mm				

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

5.2	Interior coating thickness	mm			
6	GENERAL DETAILS				
6.1	Pipe lengths	m			
6.2	Allowable tolerance on pipe length	mm			
7	GENERAL DETAILS				
7.1	Total weight of pipe per length (pipe and coating)...	kg			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filing the proposed column.

REFERENCE DOCUMENTS

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW						
TITLE TEMBA-BABELEGI WWTW BABELEGI WWTW PUMP SUMP OLD REACTOR SUPPLY PUMP SYSTEM RAW SEWAGE PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE			PAGE		
			ENGINEER: MIMSHACK PARTNERS			REV. 0		
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED								
Rev.	Revision Description			By	REV.	APP.	Aut.	Date
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Supplier:				Proposal:				
Item	Description			Unit	Specified	Proposed		
1	PUMP DETAILS							
1.1	Manufacturer							
1.2	Model							
1.3	Type (axial, centrifugal, etc.)				Submersible sludge pump			
1.4	Number of stages			No	1			
1.5	Rotational speed			rpm	1490			
1.6	DE bearing							
1.7	NDE bearing							
1.7	Method of lubrication				Grease			
1.9	Solids size handling capability (minimum)			mm	63-70			
1.10	Outlet diameter			mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)				SANS 1123			
1.12	Inlet diameter			mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)				N/A			
1.14	Seal type (mechanical, gland, etc.)				Mechanical			
1.15	Type of coupling				Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)							
1.17	DE bearings temperature probe fitted			Yes/No	No			
1.18	NDE bearings temperature probe fitted			Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)			Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable).....			... Yes/No	N/A			
1.21	Suction & Discharge pressure gauges			Yes/No	No			

1.22	Pump Painting	Yes/No	No		
Item	Description	Unit	Specified	Proposed	Item
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	7.5		
2.3	Rotational speed	rpm			
2.4	Full load current	A			
2.5	Voltage	V	400		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	l/s	1.1		
3.2	Delivery at duty point	L/s	30-40		
3.3	Head at duty point	m	6-10		
3.4	Guaranteed efficiency at duty point	%	65		
3.5	Power absorbed at duty point	KW			
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion/abrasion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-	ISO 9906 Grade 2 (if needed)		
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

03 -Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves.

Deviations from specification:

List all the deviations from the specification

REFERENCE DOCUMENTS

WS 15 2024/25

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND SUBSOIL DRAIN SUMP SUBSOIL DRAINAGE PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE			PAGE
			ENGINEER: MIMSHACK PARTNERS			REV. 0
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
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Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Submersible water pump			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	1350-1450			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	10			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	N/A			
1.21	Suction & Discharge pressure gauges	Yes/No				

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

1.22	Pump Painting	Yes/No	No		
Item	Description	Unit	Specified	Proposed	Item
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	1.5		
2.3	Rotational speed	rpm	1350-1450		
2.4	Full load current	A			
2.5	Voltage	V	380		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No			
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.0		
3.2	Delivery at duty point	L/s	5		
3.3	Head at duty point	m	10		
3.4	Guaranteed efficiency at duty point (minimum)	%	50		
3.5	Power absorbed at duty point	KW	To be confirmed		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion resistant (St. steel)		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-			
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

03 - Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves.

Deviations from specification:

List all the deviations from the specification

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Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS BALANCING POND PUMP STATION SUMP DRAINAGE PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE			PAGE
			ENGINEER: MIMSHACK PARTNERS			REV. 0
TI: TYPE OF A – PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
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Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Submersible pump			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	2780			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	40			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	N/A			
1.21	Suction & Discharge pressure gauges	Yes/No	No			

1.22	Pump Painting	Yes/No	No		
Item	Description	Unit	Specified	Proposed	
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	1.8		
2.3	Rotational speed	rpm	2780		
2.4	Full load current	A			
2.5	Voltage	V	400		
2.6	Enclosure rating (IP rating)		IP 55/IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.0		
3.2	Delivery at duty point	L/s	5.66		
3.3	Head at duty point	m	10.6		
3.4	Guaranteed efficiency at duty point	%	55		
3.5	Power absorbed at duty point	KW	1.18		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion resistant (St. steel)		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-			
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS DEGRITTING SYSTEM SCREENINGS WASH WATER PUMP - TECHNICAL SCHEDULE		CLIENT CITY OF TSHWANE		PAGE 		
		ENGINEERS: MIMSHACK PARTNERS		REV. 0		
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT						
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Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Submersible-Vortex Impeller			
1.4	Number of stages	No				
1.5	Rotational speed	rpm	1450			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	40			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm	To be confirmed			
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No			
1.21	Suction & Discharge pressure gauges	Yes/No	No			

1.22	Pump Painting	Yes/No	Yes		
Item	Description	Unit	Specified	Proposed	
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	2.2		
2.3	Rotational speed	rpm	1450		
2.4	Full load current	A			
2.5	Voltage	V	400		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting				
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.1		
3.2	Delivery at duty point	L/s	5 -7		
3.3	Head at duty point	m	11		
3.4	Guaranteed efficiency at duty point	%	50		
3.5	Power absorbed at duty point	KW	1.51		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion & abrasion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-			
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

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List all the deviations from the specification

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW			
TITLE TEMBA-BABELEGI WWTW TEMBA SLUDGE DEWATERING SLUDGE FEED PUMP SYSTEM SLUDGE FEED PUMP - TECHNICAL SCHEDULE		CLIENT CITY OF TSHWANE		PAGE	
		ENGINEERS: MIMSHACK PARTNERS		REV. 0	
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED					
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Supplier:			Proposal:		
Item	Description	Unit	Specified	Proposed	
1	PUMP DETAILS				
1.1	Manufacturer				
1.2	Model				
1.3	Type (axial, centrifugal, etc.)		Positive Displacement Screw		
1.4	Number of stages	No	1		
1.5	Rotational speed	rpm	1350-1450		
1.6	DE bearing				
1.7	NDE bearing				
1.7	Method of lubrication		Oil/Grease		
1.9	Solids size handling capability (minimum)	mm	25		
1.10	Outlet diameter	mm			
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123		
1.12	Inlet diameter	mm	To be confirmed		
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		To be confirmed		
1.14	Seal type (mechanical, gland, etc.)		Mechanical		
1.15	Type of coupling		Direct		
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)				
1.17	DE bearings temperature probe fitted	Yes/No	No		
1.18	NDE bearings temperature probe fitted	Yes/No	No		
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No		
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No		
1.21	Suction & Discharge pressure gauges	Yes/No	Yes		

1.22	Pump Painting	Yes/No	Yes		
Item	Description	Unit	Specified	Proposed	
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	3.0 (To be confirmed)		
2.3	Rotational speed	rpm			
2.4	Full load current	A			
2.5	Voltage	V	380		
2.6	Enclosure rating (IP rating)		IP 55/IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.0		
3.2	Delivery at duty point	m ³ /hr	To match Dewatering Press		
3.3	Head at duty point	m	TBA		
3.4	Guaranteed efficiency at duty point	%	50		
3.5	Power absorbed at duty point	KW	To be confirmed		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-	ISO 9906 Grade 2 (if needed)		
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

03 -Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves.

Deviations from specification:

List all the deviations from the specification

REFERENCE DOCUMENTS

WS 15 2024/25

Tender for the appointment of a contractor for the replacement and completion of the electrical and mechanical components of Temba Wastewater Treatment Works and upgrading of Babelegi Wastewater Treatment Plant for construction duration of 24 months from the commencement date

Volume 1: General Clauses, Tender Procedures, Contract Data, Pricing Data, Schedule of Quantities and Scope of Works

Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA INLET WORKS FLOODED FLOW METER CHAMBERS POTABLE DRAINAGE PUMP - TECHNICAL SCHEDULE			CLIENT CITY OF TSHWANE			PAGE
			ENGINEER: MIMSHACK PARTNERS			REV. 0
TI: TYPE OF A - PRELIMINARY C – FOR KNOWLEDGE E – FOR CONSTRUCTION G – AS BUILT						
ISSUE B – FOR APPROVAL D – FOR QUOTATION F – AS PURCHASED H - CANCELLED						
Rev.	Revision Description			By	REV.	APP.
B	FOR APPROVAL			EN		Date
						08/03/2023
Instructions on Filling Out This Form - Potential Suppliers should fill out the left column of the "Proposed" field with one of the following options: "MR" (Meets Requirements) or "D" (Deviation). - Suppliers must list any items marked "D" and any other clarifications in the "Deviations List", of the Technical Requisition. To include information in addition to the contents of this DATA SCHEDULE, suppliers should proceed in the same manner. - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.						
Supplier:				Proposal:		
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Immersible Water pump			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	1350-1450			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Grease			
1.9	Solids size handling capability (minimum)	mm	5			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm				
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		N/A			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct-integral			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable).....	...Yes/No	N/A			
1.21	Suction & Discharge pressure gauges	Yes/No	No			

WS 15 2024/25

Tender for the appointment of a contractor for the replacement and completion of the electrical and mechanical components of Temba Wastewater Treatment Works and upgrading of Babelegi Wastewater Treatment Plant for construction duration of 24 months from the commencement date

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

1.22	Pump Painting	Yes/No	No		
Item	Description	Unit	Specified	Proposed	
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	3.7 (Max)		
2.3	Rotational speed	rpm			
2.4	Full load current	A			
2.5	Voltage	V	380		
2.6	Enclosure rating (IP rating)		IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.0		
3.2	Delivery at duty point	m³/hr	10-20		
3.3	Head at duty point	m	10 (to be confirmed)		
3.4	Guaranteed efficiency at duty point	%	50		
3.5	Power absorbed at duty point	KW	To be confirmed		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m³/hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion resistant (St. steel)		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-	ISO 9906 Grade 2 (if needed)		
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

02 - Supplier shall confirm and/or provide all equipment data while filling the proposed column.

03 -Supplier to provide detailed pump orientation drawings with quotation, together with efficiency, power absorbed and NPSH curves.

Deviations from specification:

List all the deviations from the specification

REFERENCE DOCUMENTS

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Portion 1: Tender

Section T2.3.2.: Technical Schedules – Mechanical Works

		Temba-Babelegi WWTW				
TITLE TEMBA-BABELEGI WWTW TEMBA SLUDGE DEWATERING BELT WASH WATER BOOSTER PUMP SYSTEM BELT WASH WATER PUMP - TECHNICAL SCHEDULE		CLIENT CITY OF TSHWANE		PAGE 		
		ENGINEERS: MIMSHACK PARTNERS		REV. 0		
TI: TYPE OF A - PRELIMINARY C - FOR KNOWLEDGE E - FOR CONSTRUCTION G - AS BUILT ISSUE B - FOR APPROVAL D - FOR QUOTATION F - AS PURCHASED H - CANCELLED						
Rev.	Revision Description	By	REV.	APP.	Aut.	Date
B	FOR APPROVAL	EN				08/03/2023
Instructions on Filling Out This Form IV - Potential Suppliers should fill out the left column of the "Proposed" field with one of the following options: "MR" (Meets Requirements) or "D" (Deviation). V - Suppliers must list any items marked "D" and any other clarifications in the "Deviations List", of the Technical Requisition. To include information in addition to the contents of this DATA SCHEDULE, suppliers should proceed in the same manner. VI - The explanatory notes at the end of the Data Sheet are to be filled out by the Issuer and not by Suppliers.						
Supplier:			Proposal:			
Item	Description	Unit	Specified	Proposed		
1	PUMP DETAILS					
1.1	Manufacturer					
1.2	Model					
1.3	Type (axial, centrifugal, etc.)		Centrifugal			
1.4	Number of stages	No	1			
1.5	Rotational speed	rpm	1350-1450			
1.6	DE bearing					
1.7	NDE bearing					
1.7	Method of lubrication		Oil/Grease			
1.9	Solids size handling capability (minimum)	mm	10			
1.10	Outlet diameter	mm				
1.11	Outlet flange drilling (SANS1123, BS4504, BS10, etc)		SANS 1123			
1.12	Inlet diameter	mm	To be confirmed			
1.13	Inlet flange drilling (SANS1123, BS4504, BS10, etc)		To be confirmed			
1.14	Seal type (mechanical, gland, etc.)		Mechanical			
1.15	Type of coupling		Direct			
1.16	Load speed-torque characteristics (i.e. square torque law, constant torque, etc.)					
1.17	DE bearings temperature probe fitted	Yes/No	No			
1.18	NDE bearings temperature probe fitted	Yes/No	No			
1.19	Shaft float electrical measuring fitted (if applicable)	Yes/No	No			
1.20	Shaft balance disc temperature probe fitted (if applicable)	Yes/No	No			

1.21	Suction & Discharge pressure gauges	Yes/No	Yes		
1.22	Pump Painting	Yes/No	Yes		
Item	Description	Unit	Specified	Proposed	
2	MOTOR DETAILS				
2.1	Manufacturer				
2.2	Motor shaft output at site conditions	kW	11 (To be confirmed)		
2.3	Rotational speed	rpm			
2.4	Full load current	A			
2.5	Voltage	V	380		
2.6	Enclosure rating (IP rating)		IP 55/IP 68		
2.7	Recommended type of starter (DOL/ STAR-DELTA)		DOL		
2.8	Power factor at duty point				
2.9	Thermal protection fitted (thermistor/ PT100)	Yes/No	No		
2.10	Heater fitted	Yes/No	N/A		
2.11	DE bearings temperature probe fitted (PT100)	Yes/No	No		
2.12	NDE bearings temperature probe fitted (PT100)	Yes/No	No		
2.13	Zorc's Fitted	Yes/No	No		
2.14	Motor Painting (B26 to SANS 1091)	Yes/No	Yes		
2.15	Guard Painting		Yes		
2.16	Insulation class of cable				
2.17	VSD driven motor	Yes/No	No		
2.18	Instrumentation voltage	V	220		
3	PUMP CHARACTERISTICS				
3.1	SG of medium being pumped	Unit	1.0		
3.2	Delivery at duty point	m ³ /hr	To match Dewatering Press		
3.3	Head at duty point	m	TBA		
3.4	Guaranteed efficiency at duty point	%	50		
3.5	Power absorbed at duty point	KW	To be confirmed		
3.6	Guaranteed Minimum Pump best efficiency	%			
3.7	Delivery at best efficiency point	m ³ /hr			
3.8	Head at best efficiency point	m			
3.9	NPSHreq (Max)	m			
3.10	Maximum Casing Pressure	m			
4	PUMP CONSTRUCTION MATERIALS				
4.1	Pump casing		Cast Iron		
4.2	Impeller		Corrosion resistant		
4.3	Shaft				
4.4	Mechanical seal faces				
5	GENERAL DETAILS				
5.1	Total weight of pump, motor and base-frame	kg			
5.2	Plinth size required	m x m			
5.3	Performance test to be conducted to	-	ISO 9906 Grade 2 (if needed)		
6	HEALTH & SAFETY				
6.1	Noise	dB			
6.2	Vibration	Hz			

Explanatory Notes

01 - Supplier shall refer to reference documents listed on the requisition to complete equipment specification.

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Deviations from specification:

List all the deviations from the specification

REFERENCE DOCUMENTS

TENDERER

Signature :

Name :

Duly authorised to sign on behalf of :

.....

Telephone :

Fax :

Date :