

**THEMBISILE HANI LOCAL MUNICIPALITY**

**CONTRACT No.: THLM/SCM23/2023-2024/WS07**

**APPOINTMENT OF A SERVICE PROVIDER FOR THE PROVISION OF LABORATORY SERVICES FOR MONITORING OF WATER AND WASTEWATER QUALITY FOR A PERIOD OF 36 MONTHS**

<b>SECTION</b>	<b>DESCRIPTION</b>	
Section 1	COMPLIANCE MONITORING	
Section 2	CLEANING OF WATER STORAGE	
Section 3	DISINFECTION OF WATER STORAGE	
Section 4	INSTALLATION OF SAMPLING POINT	
Section 5	MATERIAL AND CHEMICAL SUPPLY	
Section 6	PROFESSIONAL SERVICES	
<b>SUB-TOTAL 1</b>		
<b>10% Contingency</b>		
<b>SUB-TOTAL 2</b>		
<b>10% Escalation</b>		
<b>SUB-TOTAL 3</b>		
<b>15% VAT</b>		

Item No	Description	Unit	Quantity	Rate	Amount
1	<b>SECTION 1: COMPLIANCE MONITORING</b>				
1,1	<b>ANNUAL FULL SANS 241</b>				
<b>1.1.1</b>	<b>Physical and aesthetic determinands</b>				
1.1.1.1	Colour	mg/L Pt-Co	1		
1.1.1.2	Conductivity or Total Dissolved Solids	mS/m	1		
1.1.1.3	Turbidity	NTU	1		
1.1.1.4	pH	pH Units	1		
<b>1.1.2</b>	<b>chemical determinands- and macro determinands</b>				
1.1.2.1	Free chlorine as CL2	mg/L	1		
1.1.2.2	Monochloramine	mg/L	1		
1.1.2.3	Nitrate as N	mg/L	1		
1.1.2.4	Nitrite as N	mg/L	1		
1.1.2.5	Combined nitrates plus nitrite	ratio	1		
1.1.2.6	Sulphates as SO4 2-	mg/L	1		
1.1.2.7	Flouride as F	mg/L	1		
1.1.2.8	Total Ammonia as N	mg/L	1		
1.1.2.9	Chloride as Cl-	mg/L	1		
1.1.2.10	Sodium as Na	mg/L	1		
1.1.2.11	Zinc as Zn	mg/L	1		
<b>1.1.3</b>	<b>Chemical determinands-micro determinands</b>				
1.1.3.1	Antimony as sb	µg/L	1		
1.1.3.2	Arsenic as As	µg/L	1		
1.1.3.3	Barium as Ba	µg/L	1		
1.1.3.4	Boron as B	µg/L	1		
1.1.3.5	Cadmium as Cd	µg/L	1		
1.1.3.6	Total Chromium as Cr	µg/L	1		
1.1.3.7	Copper as Cu	µg/L	1		
1.1.3.8	Cyanide (recoverable) as CN-	µg/L	1		
1.1.3.9	Iron as Fe	µg/L	1		
1.1.3.10	Lead as Pb	µg/L	1		
1.1.3.11	Manganese as Mn	µg/L	1		
1.1.3.12	Mercury as Hg	µg/L	1		
1.1.3.13	Nickel as Ni	µg/L	1		
1.1.3.14	Selenium as Se	µg/L	1		
1.1.3.15	Uranium	µg/L	1		
1.1.3.16	Aluminium	µg/L	1		
<b>1.1.4</b>	<b>Chemical determinands - organic determinand</b>				
1.1.4.1	Total Organic Carbon as C	mg/L	1		
1.1.4.2	Trihalomethanes	µg/L	1		
1.1.4.3	Chloroform	µg/L	1		

1.1.4.4	Bromoform	µg/L	1		
1.1.4.5	Dibromochloromethane	µg/L	1		
1.1.4.6	Bromodichloromethane	µg/L	1		
1.1.4.7	Combined trihalomethanes	ratio	1		
<b>1.1.5</b>	<b>Other Chemicals</b>				
1.1.5.1	Cyanobacteria	cells/ml	1		
1.1.5.2	Total microcystin	ug/L	1		
1.1.5.3	Phenols	ug/L	1		
<b>1.1.6</b>	<b>Microbiological determinands</b>				
1.1.6.1	E.coli	counts /100 ml	1		
1.1.6.2	Total Coliform	counts /100 ml	1		
1.1.6.3	Heterotrophic Plate Count	counts /1 ml	1		
1.1.6.4	Somatic coliphages	counts/ 10ml	1		
1.1.6.5	Cholerae	V. Cholerae	1		
1.1.7	Travelling rate per km	km	1		
1.1.8	Sampling	Per site	1		
<b>1,2</b>	<b>COMPLIANCE MONITORING ONCE PER MONTH AT SELECTED SITES</b>				
<b>1.2.1</b>	<b>Drinking water quality monitoring</b>				
1.2.1.1	pH	pH Units	1		
1.2.1.2	Conductivity	mS/m	1		
1.2.1.3	Free Chlorine	mg/L	1		
1.2.1.4	Monochloramines	mg/L	1		
1.2.1.5	Aluminium	ug/L	1		
1.2.1.6	E.coli	counts /100 ml	1		
1.2.1.7	Heterotrophic Plate Count	counts /100 ml	1		
1.2.1.8	Total Choliform	counts /1 ml	1		
1.2.1.9	Colour	mg/L Pt-Co	1		
1.2.1.10	Nitrate as N	mg/L	1		
1.2.1.11	Nitrite as N	mg/L	1		
1.2.1.12	Sulphates as SO4 2-	mg/L	1		
1.2.1.13	Flouride as F	mg/L	1		
1.2.1.14	Chloride as Cl-	mg/L	1		
1.2.1.15	Sodium as Na	mg/L	1		
1.2.1.16	Iron as Fe	ug/L	1		
1.2.1.17	Manganese as Mn	ug/L	1		
1.2.1.18	m-Alkalinity	mg/L	1		

1.2.1.19	Calcium	mg/L	1		
1.2.1.20	Magnesium	mg/L	1		
1.2.1.21	Langelier Index	Index	1		
1.2.1.22	Total Hardness	mg/L	1		
1.2.1.23	Calcium Hardness	mg/L	1		
1.2.1.24	Magnesium Hardness	mg/L	1		
1.2.1.25	Travelling Rate per km	km	1		
1.2.1.26	Sampling	Per site	1		
1.2.2	<b>Wastewater quality monitoring</b>				
1.2.2.1	pH	pH units	1		
1.2.2.2	Electrical Conductivity	mS/m	1		
1.2.2.3	Suspended Solids	mg/L	1		
1.2.2.4	Free Chlorine	mg/L	1		
1.2.2.5	Soap, Oil and Grease	mg/L	1		
1.2.2.6	Chemical Oxygen Demand	mg/L	1		
1.2.2.7	Ammonia as Nitrogen	mg/L	1		
1.2.2.8	Nitrate/Nitrite as Nitrogen	mg/L	1		
1.2.2.9	Ortho-Phosphate as phosphorous	mg/L	1		
1.2.2.10	Biochemical Oxygen Demand (BOD <sub>5</sub> )	mg/L	1		
1.2.2.11	Oxygen absorbed	mg/L	1		
1.2.2.12	Total Suspended Solids	mg/L	1		
1.2.2.13	Total Kjeldahl Nitrogen (TKN)	mg/L	1		
1.2.2.14	Chloride	mg/L	1		
1.2.2.15	Sulphate	mg/L	1		
1.2.2.16	Sulphide	mg/L	1		
1.2.2.17	Aluminum	mg/L	1		
1.2.2.18	Detergents (as LAS*)	mg/L	1		
1.2.2.19	Phenols	mg/L	1		
1.2.2.20	Total Pesticides	mg/L	1		
1.2.2.21	Total organic halides	mg/L	1		
1.2.2.22	Mixed liquor suspended solid (MLSS)				
1.2.2.23	Faecal coliforms	Count/100mL	1		
1.2.2.24	Total Coliform				
1.2.2.25	E - Coli	Count/100mL	1		
1.2.2.26	Sludge testing/classification		1		
<b>TOTAL BROUGHT FORWARD</b>					

Item No	Description	Unit	Quantity	Rate	Amount
<b>2</b>	<b>SECTION 2 : CLEANING WATER STORAGE</b>				
<b>2,1</b>	<b>CLEANING OF RESERVOIRS</b>				
<b>2.1.1</b>	Ekandustria 1	11.5 ML	1		
<b>2.1.2</b>	Ekandustria 2	13.5 ML	1		
<b>2.1.3</b>	Ekandustria 3	20 ML	1		
<b>2.1.4</b>	Moloto old Reservoir	5 ML	1		
<b>2.1.5</b>	Moloto new reservoir	5 ML	1		
<b>2.1.6</b>	Enkeldoornoog C1 Reservoir	2.2 ML	1		
<b>2.1.7</b>	Enkeldoornoog C2 Reservoir	2 ML	1		
<b>2.1.8</b>	Kwamhlanga R1	6 ML	1		
<b>2.1.9</b>	Kwamhlanga R4	5 ML	1		
<b>2.1.10</b>	Sun City reservoir 1	9.1 ML	1		
<b>2.1.11</b>	Sun City reservoir 2	6 ML	1		
<b>2.1.12</b>	Twefontein D	11 ML	1		
<b>2.1.13</b>	Thembaletu	11 ML	1		
<b>2.1.14</b>	Thembaletu Tower	0.5 ML	1		
<b>2.1.15</b>	Mathyzensloop	0.5 ML	1		
<b>2.1.16</b>	Verena A	1.8 ML	1		
<b>2.1.17</b>	Verena D	0.77 ML	1		
<b>2.1.18</b>	Wolwenkop	3.1 ML	1		
<b>2.1.19</b>	Machipe	0.7 ML	1		
<b>2.1.20</b>	Langkloof	10 ML	1		
<b>2.1.21</b>	Kwaggafontein A1	12 ML	1		
<b>2.1.22</b>	Kwaggafontein A2	12 ML	1		
<b>2.1.23</b>	Twefotein K	2.7 ML	1		
<b>2.1.24</b>	Mathyzensloop	0.5 ML	1		
<b>2.1.25</b>	Mzimuhle	11 ML	1		
<b>2.1.26</b>	Vleisgewag	0.5 ML	1		
<b>2.1.27</b>	Boekenhouhoek A1	5 ML	1		
<b>2.1.28</b>	Boekenhouhoek A2	0.5 ML	1		
<b>2.1.29</b>	Boekenhouhoek B	1.8 ML	1		
<b>2.1.30</b>	Bundu	0.75 ML	1		
<b>2.1.31</b>	Enkeldooring	10 ML	1		
<b>2.1.32</b>	New Vleisgewag	0.5 ML	1		
<b>2.1.33</b>	Mathyzensloop	10 ML	1		
<b>2,2</b>	<b>CLEANING OF WATER TRUCKS</b>				
<b>2.2.1</b>	Water truck	5000	1		

<b>2.2.2</b>	Water truck	7000	1		
<b>2.2.3</b>	Water truck	10000	1		
<b>2.2.4</b>	Water truck	15000	1		
<b>2.2.5</b>	Water truck	18000	1		
<b>2.2.6</b>	Water truck	16000	1		
<b>2.2.7</b>	Water truck	20000	1		
<b>2,3</b>	CLEANING OF STORAGE TANK				
<b>2.3.1</b>	Storage tank	2000	1		
<b>2.3.2</b>	Storage tank	2500	1		
<b>2.3.3</b>	Storage tank	5000			
<b>2.3.4</b>	Storage rank	10000	1		
	<b>TOTAL BROUGHT FORWARD</b>				

Item No	Description	Unit	Quantity	Rate	Amount
<b>3</b>	<b>SECTION 3 : STORAGE DISINFECTION</b>				
<b>3,1</b>	<b>TANKS AND RESERVOIR BOOSTING</b>				
<b>3.1.1</b>	Ekandustria 1	11.5 ML	1		
<b>3.1.2</b>	Ekandustria 2	13.5 ML	1		
<b>3.1.3</b>	Ekandustria 3	20 ML	1		
<b>3.1.4</b>	Moloto old Reservoir	5 ML	1		
<b>3.1.5</b>	Moloto new reservoir	5 ML	1		
<b>3.1.6</b>	Enkeldoornoog C1 Reservoir	2.2 ML	1		
<b>3.1.7</b>	Enkeldoornoog C2 Reservoir	2 ML	1		
<b>3.1.8</b>	Kwamhlanga R1	6 ML	1		
<b>3.1.9</b>	Kwamhlanga R4	5 ML	1		
<b>3.1.10</b>	Sun City reservoir 1	9.1 ML	1		
<b>3.1.11</b>	Sun City reservoir 2	6 ML	1		
<b>3.1.12</b>	Tweefontein D	11 ML	1		
<b>3.1.13</b>	Thembalethu	11 ML	1		
<b>3.1.14</b>	Thembalethu Tower	0.5 ML	1		
<b>3.1.15</b>	Mathyzensloop	0.5 ML	1		
<b>3.1.16</b>	Verena A	1.8 ML	1		
<b>3.1.17</b>	Verena D	0.77 ML	1		
<b>3.1.18</b>	Wolwenkop	3.1 ML	1		
<b>3.1.19</b>	Machipe	0.7 ML	1		
<b>3.1.20</b>	Langkloof	10 ML	1		
<b>3.1.21</b>	Kwaggafontein A1	12 ML	1		
<b>3.1.22</b>	Kwaggafontein A2	12 ML	1		
<b>3.1.23</b>	Tweefotein K	5 ML	1		
<b>3.1.24</b>	Mathyzensloop	0.5 ML	1		
<b>3.1.25</b>	Gembok	11 ML	1		
<b>3.1.26</b>	Vleisgewag	0.5 ML	1		
<b>3.1.27</b>	Boekenhouhoek A1	5 ML	1		
<b>3.1.28</b>	Boekenhouhoek A2	0.5 ML	1		
<b>3.1.29</b>	Boekenhouhoek B	1.8 ML	1		
<b>3.1.30</b>	Bundu	0.75 ML	1		
<b>3.1.31</b>	Enkeldooring	10 ML	1		
<b>3.1.32</b>	New Vleisgewag	0.5 ML	1		
<b>3.1.33</b>	Mathyzensloop	10 ML	1		
<b>3.1.34</b>	Water truck	5000	1		
<b>3.1.35</b>	Water truck	7000	1		
<b>3.1.36</b>	Water truck	10000	1		
<b>3.1.37</b>	Water truck	15000	1		
<b>3.1.38</b>	Water truck	18000	1		

<b>3.1.39</b>	Water truck	16000	1		
<b>3.1.40</b>	Water truck	20000	1		
<b>3.1.41</b>	Jojo Tanks	2000 ML	1		
<b>3.1.42</b>	Jojo Tanks	2500 L	1		
<b>3.1.43</b>	Jojo Tanks	5000 L	1		
<b>3.1.44</b>	Jojo Tanks	10000 L	1		
<b>3.1.45</b>	Travelling rate per Km	km	1		
	<b>TOTAL BROUGHT FORWARD</b>				

Item No	Description	Unit	Quantity	Rate	Amount
<b>4</b>	<b>SECTION 4: INSTALLATION OF SAMPLING POINT</b>				
<b>4,1</b>	<b>CONNECTION/ESTABLISHMENT OF SAMPLING POINT</b>				
<b>4.1.1</b>	60 pipe	mm	1		
<b>4.1.2</b>	75 pipe	mm	1		
<b>4.1.3</b>	100 pipe	mm	1		
<b>4.1.4</b>	110 pipe	mm	1		
<b>4.1.5</b>	150 pipe	mm	1		
<b>4.1.6</b>	160 pipe	mm	1		
<b>4.1.7</b>	200 pipe	mm	1		
<b>4.1.8</b>	250 pipe	mm	1		
<b>4.1.9</b>	315 pipe	mm	1		
<b>4.1.10</b>	350 pipe	mm	1		
<b>4.1.11</b>	400 pipe	mm	1		
<b>4.1.12</b>	500 pipe	mm	1		
<b>4.1.13</b>	600 pipe	mm	1		
<b>4.1.14</b>	1000 pipe	mm	1		
<b>4.1.15</b>	Travelling rate per Km	km	1		
	<b>TOTAL BROUGHT FORWARD</b>				

Item No	Description	Unit	Quantity	Rate	Amount
5	<b>SECTION 5: LAB EQUIPMENTS AND CHEMICALS SUPPLY</b>				
5,1	<b>CHEMICAL SUPPLY</b>				
5.1.1	Scientific mini reservoir floater(600g)	Box	1		
5.1.2	Scientific Reservoir refill(2 kg)	Box	1		
5.1.3	Scientific Reservoir Floater round disk (1 EA)	1 EA	1		
5.1.4	HTH tablets 25 kg	Drum	1		
5.1.5	Latrine Tablets 25 kg	Drum	1		
5.1.6	HTH 200KG Industrial Chip Doser	200 kg	1		
5.1.7	HTH Chip doser	35 kg	1		
5.1.8	Chlorine Inline feeder	12 tablets	1		
5.1.9	Chlorine Inline feeder	10 tablets	1		
5.1.10	Scientific Industrial Granular 25kg	Drum	1		
5.1.11	Scientific Industrial Chip 25 kg	Drum	1		
5.1.12	DPD 1( 250)	Box	1		
5.1.13	DPD 3 (PK250)	Box	1		
5.1.14	Chlorine Tonner Connection Coile Copper Tube (2m)	m	1		
5.1.15	Calcium carbonate (lime)	25 kg	1		
5.1.16	Chlorine gas (Cylinder)	70 kg	1		
5.1.17	Polymer(chemfloc A7D)	7000 L	1		
5.1.18	Antiscalant	25 L	1		
5.1.19	Sodium metabisulphite	25 L	1		
5.1.20	Sodium hypochlorite	1000 L	1		
5,2	<b>LAB EQUIPMENT CALIBRATION</b>				
5.2.1	Hanna HI 9146 dissolved oxygen		1		
5.2.2	Palintest photometer 7500		1		
5.2.3	Hach TSS portable		1		
5.2.4	Portable turbidimeter		1		
5.2.5	DR300 Pocket colorimeter		1		
5,3	<b>CHEMICAL REAGENT</b>				
5.3.1	pH	Box	1		
5.3.2	Iron	Box	1		
5.3.3	Manganese	Box	1		
5.3.4	Nitrate	Box	1		

5.3.5	Ammonia-	Box	1		
5.3.6	Flouride	Box	1		
5.3.7	Nitrite	Box	1		
5.3.8	Chloride	Box	1		
5.3.9	Sulphate	Box	1		
	<b>TOTAL BROUGHT FORWARD</b>				

Item No	Description	Unit	Quantity	Rate	Amount
<b>6</b>	<b>PROFESSIONAL SERVICES</b>				
6,1	Compile risk-based hazard assessment for all areas using water quality data (provide data on spreadsheet)	Spreadsheet Report	1		
6,1	Compile Process Optimization Audit	Audit Report	1		
6,1	Compile Water Safety Plan for borehole water supply system. This should cover source, treatment & distribution.	WSP Report	1		
6,1	Compile Water Safety Plan for the Greater Thembisile Hani Distribution Network	WSP Report	1		
6,1	Compile water Safety plan for Bundu WTW .This should cover source, treatment & distribution.		1		
6,1	Compile wastewater risk abatement plan for wastewater treatment works. this should also cover the sewer network		1		
6,1	Manage BDS and alert Municipality on short-comings	BDS Report	1		
6,1	Manage GDS and alert Municipality on short-comings	GDS Report	1		
<b>7</b>	<b>EMERGENCY RESPONSES (12 - 24 hours)</b>				
7,1	Water Sampler	Hour			
7,2	Professional Hazard -& Hazardous Risk Assessor for water system and boreholes (Process Technologist/ Hydrogeologist)	Hour			
	<b>TOTAL BROUGHT FORWARD</b>				