



**prasa**

PASSENGER RAIL AGENCY  
OF SOUTH AFRICA

PRASA HOUSE  
1040 Burnett Street  
Hatfield  
Pretoria

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## Specification and Bill of Quantities

### **1. Scope of Work**

1.1. The scope of work entails Siting and Drilling of a Borehole Complete with Equipment at **Kapmuiden Station** for a period of **8 Weeks** including

- Geohydrological Study, Physical Survey and Siting of Borehole
- Drilling of Borehole
- Testing of Pump and Laboratory water sampling
- Supply and Equipping of a borehole
- **NOTE: 10% Contingency can only be claimed if any contingency work has been done**

1.2 **Grade 1CE**

1.3 **COIDA**

### **2. General Specification**

- 2.1. The Contractor to carry out the installations shall be qualified contractor and will ensure that only competent personnel and tools are utilized to carry out the works.
- 2.2. All work carried out by the contractor shall be in accordance with the applicable SABS Code of Practise. The contractor shall further adhere to the construction Regulations of the OHS Act 85.
- 2.3. All material used shall be of high quality and shall be SABS approved. The contractor undertakes to correct defects arising from poor workmanship and from the use of poor-quality material.
- 2.4. PRASA CRES will make available to the contractor a Technical Officer who will assist the contractor with identifying existing services on site.
- 2.5. The contractor shall be responsible for disposal of all rubble and is to allow for this in the pricing.
- 2.6. Tenderers are advised to visit the site and to satisfy themselves as to the nature and extent of the work to be done and provide in their tenders for any items not specifically mentioned which they may deem necessary for the proper completion of the work.
- 2.7. This specification have two Annexures attached for bidders attention
- **Annexure 1: Sample Pictures of Borehole drilling**
  - **Annexure 2: Health Safety Requirements Template for Issuing of Site Access**

### **3. Special Condition**

3.1 A work program shall be submitted to the Project Manager within 5 days from the date of the acceptance of the tender and shall match the duration stated in the specification



- 3.2 A fully complete and compliant safety file as per the attached safety check list shall be submitted to the Project Manager within 5 days from the date of the acceptance without failure.
- 3.3 No work will commence without an approval of fully complete and compliant safety file
- 3.4 The duration of the project shall be 6 Weeks and the contractor is expected to commence work within 7 days upon receipt of the appointment letter.
- 3.5 Failure to adhere to specified timelines will result in termination of contract.

**Bill of Quantities: Siting, Drilling and Equipping of a Borehole at Kapmuiden Station**

Item	Description	Unit	Qty	Rate	Amount	Local Content
3.1	<p><b>Siting of ground water borehole position:</b></p> <p>Borehole Siting(feasibility) to be conducted by a Qualified Hydrogeologists which will provide a technical report and a design drawing by conducting Geohydrological desktop study, physical surveys (by using mechanical instruments) and identify suitable area with a high-water yield. A detailed breakdown cost of this professional service to be provided on a separate sheet but the SUM amount still to be reflected on this BOQ.</p> <p>ITEM 3.1. The Geophysical techniques should include but not limited to:</p> <ul style="list-style-type: none"> <li>i. Magnetic Surveys</li> <li>ii. Electrical Resistivity Surveys</li> <li>iii. Seismic Refraction Surveys</li> <li>iv. Frequency Domain Electromagnetic Surveys</li> <li>v. Gravimetric Survey</li> </ul> <p>The Services of the Hydrogeologist will be required throughout the process and their services will include: Pre-feasibility Study, Hydro census, Borehole Siting, Supervision, Reporting and Commissioning of work.</p>	SUM	1	R	R	N/A



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3.2	<p><b>Drilling of Borehole:</b></p> <p>Drilling of a 165mm diameter of borehole by using a Rotary air Percussion drilling method with all consolidated rock formation and overburden. Development (Air Flush) Drilling contractor to closely work under the direct Supervision of the Hydrogeologist who will verify and document the construction parameters of the borehole and also log the Geological Formations of the Borehole.</p> <p>Complete including all costs</p> <p>i. Drilling Depth Range: 0-120m</p> <p>ii. Mild Steel 3-4mm wall thickness complete with casing</p>	METERS	120	R	R	N/A
		SUM	1	R	R	100% Steel Product



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<p>3.3</p>	<p><b>PUMP TEST AND LABORATORY WATER SAMPLING</b></p> <p>Test pumping results to be interpreted and verified by the Hydrogeologist, Water Level Monitoring to be recorded on all stages. Data Recordings both Soft and Hard Copy must be provided.</p> <p>i. Slug test which should include variable discharge for 4hrs, 24 hr constant discharge, recovery monitoring of 1 hour. Complete</p> <p>ii. Borehole Disinfection: application of a Granular Chlorine (HTH or equivalent). Complete</p>	<p>SUM</p> <p>SUM</p>	<p>1</p> <p>1</p>	<p>R</p> <p>R</p>	<p>R</p> <p>R</p>	<p>N/A</p> <p>R</p>
<p>3.4</p>	<p><b>BOREHOLE CONSTRUCTION:</b></p> <p>i. Excavate, backfill and compact a 600mm by 300mm X 300 Meters trench to make way or as a preparation for lying of a water supply pipe. Excavated material to be put aside for later use as bedding and for backfilling. Complete installation including all accessories.</p> <p>ii. Provision for Excavate, backfill, compact a cable trench of</p>	<p>SUM</p>	<p>1</p>	<p>R</p>	<p>R</p>	<p>N/A</p>



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	Pretoria 300mm (Depth) x 300mm (Width) on soft soil base.	M	500	R	R	N/A
iii.	Supply and Install a 5000L Plastic Water Tank suitable for outdoor use. Tank to be SABS approved. Complete installation including all accessories	UNIT	1 UNIT	R	R	N/A
iv.	Excavate and pouring of site or ready-mix concrete with strength of 25mpa for a length measuring 8m, 300mm depth x 150mm width, make good all trades by preparing concrete screed to floor	Sum	1	R	R	N/A
v.	Construct a Pump House Measuring 2000mm x 2000mm x 2100mm height Concrete Chamber complete with a class 1 Strong room door. Used for housing a Borehole pump, motor and control panel. Complete Installation.	Unit	1	R	R	N/A
vi.	Supply and Install a 2032 x 1020 Class 4 Steel Door complete with a frame, multipoint locking mechanism, locks etc and Make Surface Good	Unit	1	R	R	100% Steel Product
vii.	Roof covering, Supply and apply a 150mm thick on-site or ready- mix concrete with strength of 25mpa Reinforced concrete slab for an area measuring 2000mm	Unit	1	R	R	N/A



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	Pretoria length x 2000mm width on top of pump house					
viii.	Plaster the walls, interior and exterior	M <sup>2</sup>	22.5	R	R	N/A
ix.	Paint the floor and walls (interior and exterior). Apply plaster primer coat and finish paint work as follows Floor(4m <sup>2</sup> )> workshop green Interior walls (22.5m <sup>2</sup> ) > PRASA Grey Exterior walls (22.5m <sup>2</sup> )> PRASA Grey	Sum	1	R	R	N/A
x.	Supply and Install 25mm x 500m length pressure HDPE water pipe through the footbridge to be connected to the pump. Complete installation including all plumbing fittings Pipe to be SABS approved. Complete Installation including all accessories	Sum	1	R	R	HDPE 100%
xi.	Supply and install a 4mm, 3-core Electrical cable. Complete installation including all accessories	Unit	1	R	R	90% Electric. & Telecom s Cables
xii.	Supply and Install a 1,1Kw SVM Submersible Borehole Pump with a performance flow rate from 30L/min to 400L/min. Head up to 290 meters, Stainless steel motor adaptor	UNIT	1	R	R	N/A



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	<p>and discharge head, Polycarbonate impellers and a Stainless-steel bowls. Complete Installation including all accessories.</p>					
xiii.	<p>Supply and Install a 1.1Kw Motor for Borehole Applications. Complete Installation including all accessories</p>	Unit	1	R	R	N/A
xiv.	<p>Supply and Install a 1.1Kw 230 V 4 single phase Automatic Electrical Control Box with but not limited to Voltage Measurement, Current AMP Measurement, Start Capacitor, Potential Voltage Relay, Overload, Red &amp; Green lights indicators. Complete Installation.</p>	SUM	1	R	R	N/A
	<p><b>Commissioning of Borehole and filtration system</b></p>					



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3.5	<p><b>WATER FILTRATION SYSTEM REVERSE OSMOSIS</b></p> <p>Supply and Install 18 000 litres per day/ 750 litres per hour reverse Osmosis Water Purifier consisting of but not limited to 3x4040 membrane ,075kw MVS Booster pump, over&amp; under Voltage protection, low pressure switch, cable float switch for tank, membrane housing, flow meters, permeate concentrate, pressure meter (incoming pressure, booster pump pressure, concentrate pressure, membrane Hydraulics, low energy membrane. The system must be able to achieve more than 99% of all microorganisms, pyrogens, particulates, organise with molecular weight greater than 300 and up to 95% of all dissolved inorganic containments from water are removed.</p>	SUM	1	R	R	N/A
3.6	<p><b>TRAINING AND MAINTENANCE</b></p> <p>Provision of training for use and maintenance of the entire system to 5 PRASA Maintenance Employees including maintenance manuals of the entire system (Borehole and Water Filtration System) Training to be conducted for 1 Day.</p>	SUM	R2500,00	R	R	N/A
3.7	<p><b>JBCC</b></p> <p>Make Provision for JBCC Minor Works Agreement Edition 5.2 / Contract to be submitted by the appointed or successful bidder.</p>	SUM	R 1000,00	R	R	N/A
3.8	<p><b>SAFETY FILE</b></p> <p>Provision for Safety File which will be submitted by a successful bidder</p>	SUM	R 6000,00	R	R	N/A



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	<b>Sub Total:</b>	<b>R</b>
	<b>Vat (15%):</b>	<b>R</b>
	<b>Total:</b>	<b>R</b>
	<b>10% Contingencies:</b>	<b>R</b>
	<b>Total Including 10% Contingencies:</b>	<b>R</b>

**The contractor shall deliver the above listed equipment within 6 Weeks upon receipt of the Purchase order.**

The Work to be performed under this Contract shall be commenced upon receipt of a Notice to Proceed and completed by \_\_\_\_\_ as stipulated in the specification document. Start date is anticipated to be on or about \_\_\_\_\_.

I hereby declare on my honour that our company has access to stable and adequate project funding to maintain activities and deliver services for the period of the project to carry out works as required by Prasa Cres.

Signed at \_\_\_\_\_

Company Director: \_\_\_\_\_

Date : \_\_\_\_\_

**NB: The Bidder shall ensure that this part is fully completed.**



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### Annexure 1: Sample Pictures of Borehole drilling





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## **ANNEXURE 2: Health Safety Requirements Template for Issuing of Site Access**

### **SAFETY CHECK LIST**

#### **CONTRACTOR SAFETY FILE CONTENTS LIST**

The purpose of this checklist is to guide the contractors and their sub-contractors as to what documents are required for them to prepare a safety file that must be issued to PRASA Cres Regional Departments or Head Office for evaluation before a site access is issued.

This checklist was revised to cater for **COVID 19** requirements as per RSA Government Disaster Management Act as amended and its Regulations.

Human Coronaviruses are common throughout the world. There are many different coronaviruses identified in animals but only a small number of these can cause disease in humans.

On 7 January 2020, 'Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2) was confirmed as the causative agent of 'Coronavirus Disease 2019' or COVID-19. The majority of the case-patients initially identified were dealers and vendors at a seafood, poultry and live wildlife market in China. Since then, the virus has spread to more than 100 countries, including South Africa.

The spread of the disease is thought to happen mainly via respiratory droplets produced when an infected person coughs or sneezes, similar to how influenza and other respiratory pathogens spread. Thus far, the majority of cases have occurred in people with close physical contact to cases and healthcare workers caring for patients with COVID-19.

Current symptoms reported for patients with COVID-19 have included mild to severe respiratory illness with cough, sore throat, shortness of breath or fever.

The complete clinical picture with regard to COVID-19 is still not fully clear. Reported illnesses have ranged from infected people with little to no symptoms to people being severely ill and dying.



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**Name of the Contractor:**

**Project:**

**Safety File Assessor and Date:**

#	Requirement(s)	Compliance Status (Yes / No)	Comment(s)
1	Scope of works and Project Duration		
2	Notification to DOL (If applicable and as defined in the 2014 Construction Regulations)		
3	Registration of the project with DOL for the construction permit if the total project value is more than R45 Million (If applicable and as defined in the 2014 Construction Regulations)		
4	Valid Letter of Good Standing		
5	Employee List and Certified Copies of their Identity Documents (RSA Citizens) or Passports or Work Permits for foreign Nationals (Employee register); Home address; Contact Numbers; Residential Address; Name of Next of kin with Contacts  (Very critical issue for contact tracing)		
6	Approved Organizational Structure		



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7	Approved S/HE Policy			
8	Approved COVID 19 Policy / Declaration			
9	Approved S/HE Plan			
10	Risk Assessments for the projects as per project scope approved by the Risk Assessor and they should cover COVID 19 related risk and mitigation measures.			
11	<p>Proof of medical fitness of employees who will be working on the project and they should be from the Occupational Health Practitioner not a General Practitioner.</p> <ul style="list-style-type: none"> <li>• Protocols for dealing with COVID 19 positive cases.</li> <li>• Screening of contractor's employees including sub-contractor</li> <li>• The type of thermometer that will be utilised and its calibration status.</li> </ul>			
12	<p>Statutory Appointments including competency certificates and CVs e.g., COVID 19 Compliance Officer; First Aider and etc</p> <p>(Signed by the appointer and accepted by appointee's include CV's and competency certificates)</p>			
13	Tool inspections Checklists and Register			
14	PPE Matrix and Records include COVID 19 PPE Requirements and list of the PPE to be provided.			
15	Safe Working Procedures or Method Statements Including COVID-19 control			



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	<p>measures. A list of the documents required here is identified as a minimum</p> <ul style="list-style-type: none"> <li>- Waste management protocol on how COVID 19 related waste will be managed.</li> <li>- Incident reporting procedure.</li> <li>- Emergency procedure.</li> <li>- COVID 19 case handling.</li> </ul>			
16	Tool box Talks Templates to include COVID 19 information for awareness purposes. Include induction material covering COVID 19			
17	Equipment Maintenance (Calibrations, Safe Working load certificates and Decontamination or Sanitation Records etc) if applicable			
18	Chemicals substances list; MSDSs for chemicals to be used (14-point format) including Proof of training on MSDS if applicable.			
19	Excavation plan (when applicable)			
20	Scaffolding plan (when applicable)			
21	Declaration of Sub-contractors (when applicable)			
22	Proof of Third-Party Liability Cover			
	<b>Conclusion / Statement of Compliance</b>			



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