

ISLAMIC RELIEF BOREHOLE TECHNICAL CRITERIA



Project Name: Rural Access to New Opportunities for Water and Food -
Installation of Boreholes

Implemented by: Islamic Relief SA KZN Region

July 2023



Islamic Relief
South Africa

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Installation of 8 Boreholes

The technical proposal should include each borehole's siting, installation, testing, equipping, and commissioning.

Desktop Study, Geohydrological Investigation, Data Evaluation and Reporting.

- An undertaking of a desktop study is required for each site with the aim of determining target areas for the geophysical investigation. The study should also include existing boreholes in the areas.
- A Geophysical Investigation over the targeted areas should be conducted identifying a minimum of three (3) potential drilling points, where possible which can easily be accessed by the drilling rig.
- A Geohydrological report of the findings of the investigation, including the results of the desktop study, details of the geophysical investigation, and the locations of the proposed drilling targets will be required.

Borehole Drilling, Pump testing, Data Evaluation, and borehole Equipping

- Drilling of the borehole should be quoted at a depth of 120 m below ground level, using the appropriate method of drilling (Air Percussion Drilling, Symmetrix Drilling, or Mud Rotary Drilling)
Drilling should be conducted at the identified spot during the geophysical investigation, under the full-time on-site supervision of a geohydrologist.
- PVC casing should be installed to ensure the long-term stability and sustainability of the borehole. The PVC casing shall be installed to prevent the borehole from collapsing.
- After the borehole drilling, an 8-hour pump test should be conducted
- Collection of a water sample at the end of the pump test should be conducted and submitted to a laboratory for analysis as per the Abr SANS 241: 2015 Drinking Water Standards.



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- A full Geohydrological report should be submitted reporting on the findings of the investigation, including the analysis of the pump test data to determine the specific management recommendations for long-term sustainable use of the borehole, as well as the interpretation of the water quality results from the borehole to determine and treatment which may be required to ensure the water is suitable.
- Equipping of the borehole according to the specific management recommendations of each borehole. The borehole installation should include the installation of a submersible pump, lockable manhole, all pipework for the 3 taps (2 outside the property for the community and 1 inside the borehole property), electrical fittings, and one 5000L Jojo/Eco tank that is secured to the tank stand with metal rods.

Borehole Commissioning

- After the completion of each borehole, commissioning should be conducted with the relevant stakeholders. Commissioning such as showing the relevant stakeholders how to use the borehole efficiently, how to take care of the borehole, and giving any borehole recommendations. Borehole profiles should be handed over to the relevant stakeholders.

TimeLine

A detailed timeline from the desktop study, geohydrological survey, drilling, pump testing and commissioning of the 8 boreholes should be shown on the timeline.

An Example of the Expected Timeline

<u>Description</u>	<u>Item</u>	<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	<u>Week 4</u>
Desktop Study	1				
Geophysical Investigation	1				
Geophysical Investigation Report	1				

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<u>Description</u>	<u>Item</u>	<u>Week 5</u>	<u>Week 6</u>	<u>Week 7</u>	<u>Week 8</u>	<u>Week 9</u>
Desktop Study	2					
Drilling	2					
Pump Testing	2					
Water Laboratory Analysis	2					
Reporting and Recommendations	2					
Borehole Commissioning	3					

Technical Attachments

The following documents should be attached with the technical proposal:

- Service Provider's Company Profile
- Service Provider's Tax Clearance Certificate
- Service Provider's Experience and References
- Service Provider's detailed CV of staff members that will be part of the project.
- Service Provider's Technical Equipment and drilling vehicles
- Geogydrologist's Degree
- Geogydrologist's Registration Certificate

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Quotation

The following prices are required for our quotation.

Item	Description	Unit	Quantity	Rate	Amount	Comments
1	Desktop Study, Geohydrological Investigation, and Report					
1.1	Desktop Study	hours	8 sites	***	***	Comment if applicable or not.
1.2	Geohydrological Study	Hours	8 sites	***	***	
1.3	Transportation	km	8 sites	***	***	
1.4	Geohydrological Report	Hours	8 sites	***	***	
2	Borehole Drilling, Pump testing, Data Evaluation, and borehole Equipping					
2.1	Establishment of Equipment	***	8 Sites	***	***	
2.2	Drilling (Air Percussion, Symmetrix, or Mud Rotary)	Meters	120 Meters	***	***	Please quote on the drilling method to be used, and how much it is per meter for the other drilling methods.
2.3	Steel/PVC Casing	Meters	8 Sites	***	***	
2.4	Borehole Pump	Pump	8 Sites	***	***	Quote on the type of pump to be used
2.5	Electrical Components / Fittings/water filter	***	8 Sites	***	***	
2.6	Pump Testing	Hours	10Hours	***	***	
2.7	Water Quality Analysis	***	8 Sites	***	***	
2.8	5000L Water Tanks (Islamic Relief Branded)	Jojo/ Eco Tank	8 Sites	***	***	
2.9	Tank Stand	Tank Stand	8 Sites	***	***	



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2.10	3 Taps	Taps	8 Sites	***	***	
2.11	Pipework	Pipes	3 Taps Per Site	***	***	
2.12	Concrete Manhole	Per Manhole	8 Sites	***	***	
2.13	Security Features (Locks, metal rods on Jojo/Eco tank)	Per Borehole	8 Sites	***	***	
2.14	Granite Sign Post	Per Sign Post	8 Sites	***	***	
2.15	Labor and Installation	Hours	8 Sites	***	***	
2.16	Transportation	Km	8 Sites	***	***	
3	Borehole Commissioning					
3.1	Borehole Report	Hours	8 Sites	***	***	
3.2	Borehole Commissioning	Hours	8 Sites	***	***	Borehole commissioning such as showing stakeholders how to use the boreholes, sustainability requirements & recommendations.

Borehole Sites



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No.	Borehole Site	Location	Status	Distance	GPS Co-ordinates	GPS Link
<u>1</u>	Luthuli High School	Mtwalume	N/A	93 km	-30.50363063924629, 30.597149264951334	https://www.google.com/maps/d/edit?mid=1MNL58X8D61VLrDu71PGPMvt-Djy57ag&usp=sharing
<u>2</u>	Umkhukhuze Primary School	Nhlabo	N/A	135 km	-28.940169023776747, 31.62293855573566	https://www.google.com/maps/d/edit?mid=1TWgHZmVLG8oQeT2Sj-ppcqlJklfZ_Lzo&usp=sharing
<u>3</u>	Tugela Ferry Masjid	Tugela Ferry	N/A	191 km	-28.75338303404748, 30.444017659506073	https://www.google.com/maps/d/edit?mid=1LX5GcKFqcrA_BtTOhsfowAPQKLrx59M&usp=sharing



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<u>4</u>	St. Johns Apostolic Church	Harding	N/A	205 km	-30.527988773630266, 30.024692726044147	https://www.google.com/maps/d/edit?mid=1Tr_Pq-26HTMff-72Q2X5QEUhMCamXTk&usp=sharing
<u>5</u>	Phembukuthula Community Care	Ladysmith	N/A	284 km	-28.42726952527535, 30.23870943995222	https://www.google.com/maps/d/edit?mid=1qhFhkgZXz1BgoC9G87sy5grfRagc5Xc&usp=sharing
<u>6</u>	Veyana Primary School /Mzondeni Orphan Care Centre	Mtubatuba	N/A	220 km	-28.36806330767466, 32.17266093253238	https://www.google.com/maps/d/edit?mid=1-wopX33ikNnERNWQuJwazuQhBxphu5g&usp=sharing
<u>7</u>	Dannhauser Community Aid	Dannhauser	N/A	312 km	-28.00947238665745, 30.053944097128824	https://www.google.com/maps/d/edit?mid=1askKTsZdNJ6i0ViSP0Bsg3vzYX1D6Ys&usp=sharing
<u>8</u>	Osizweni Madressa	Newcastle	N/A	349 km	-27.799103101544503, 30.14265752595792	https://www.google.com/maps/d/edit?mid=1JfJmFGuYL0iQfCUZhxxhkwnJA_5hls4&usp=sharing

