M.Eisa Sardarzada (MES) Construction, Water Supply and Well Drilling Co. Ltd

Water Supply & Drilling Department

Company Profile

OVERVIEW

ABOUT MES

WATER SUPPLY & WELL DRILLING DEPARTMENT

Our Water Supply & Well Drilling Department performs services of water well construction and all associated works. Well drilling construction services consist of following works.

- Geophysical study to obtain specific data of ground layers prior to drilling.
- Borehole drilling in several sizes.
- Well development (Placement of filter pack, casing, screening and pump testing)
- Well construction (Placement of pump, piping, surface grouting, well house)
- Preparation of geophysical study report and well construction logs.

DEPARTMENT STRUCTURE

Our Water Supply & Well Drilling Department has qualified engineers, drilling technicians and plumbers. Organization flow-chart of this department is as follows;

MES Construction and Water supply and well drilling Co. Ltd is a private organization of qualified experts in the fields of well drilling, Construction, Sewerage systems, Water supply and distribution systems and Electrical power supply systems.

COMPANY STRUCTURE

MES Construction, water supply and well drilling Co. Ltd maintains its activities by two separately organized departments which are Construction Department and Water Supply & Drilling Department. Our company has qualified technical personnel for each department who are assigned to key positions. These two departments consist of architects, interior decorators, landscape architects, civil, mechanical, electrical, structural engineers, drilling technicians and ground water survey engineers. MES also has employed personnel for public relations, marketing, accounting, quality, safety, and purchasing units.

ORGANIZATION POLICY

MES Construction, Water supply and well drilling Co. Ltd acts as bridge linking donors and the main population, and we are always impartial concerned only with where the projects can have a bigger social welfare and economic impact.

OVERVIEW

GOALS

Reconstruction and rehabilitation of Afghanistan after long war.

- Promoting constructional projects in Afghanistan
- Determining priorities in the fields it covers
- Providing modern facilities, equipment's and materials
- Upgrade the level of rebuilding according to the level of the developed countries

OUR VISION

Our vision is to form new designs by the best aesthetic and functional solutions and to be the initiator of our sector without making any concessions in terms of quality and by meeting the expectations of our customers excessively.

OUR BUSINESS POLICY

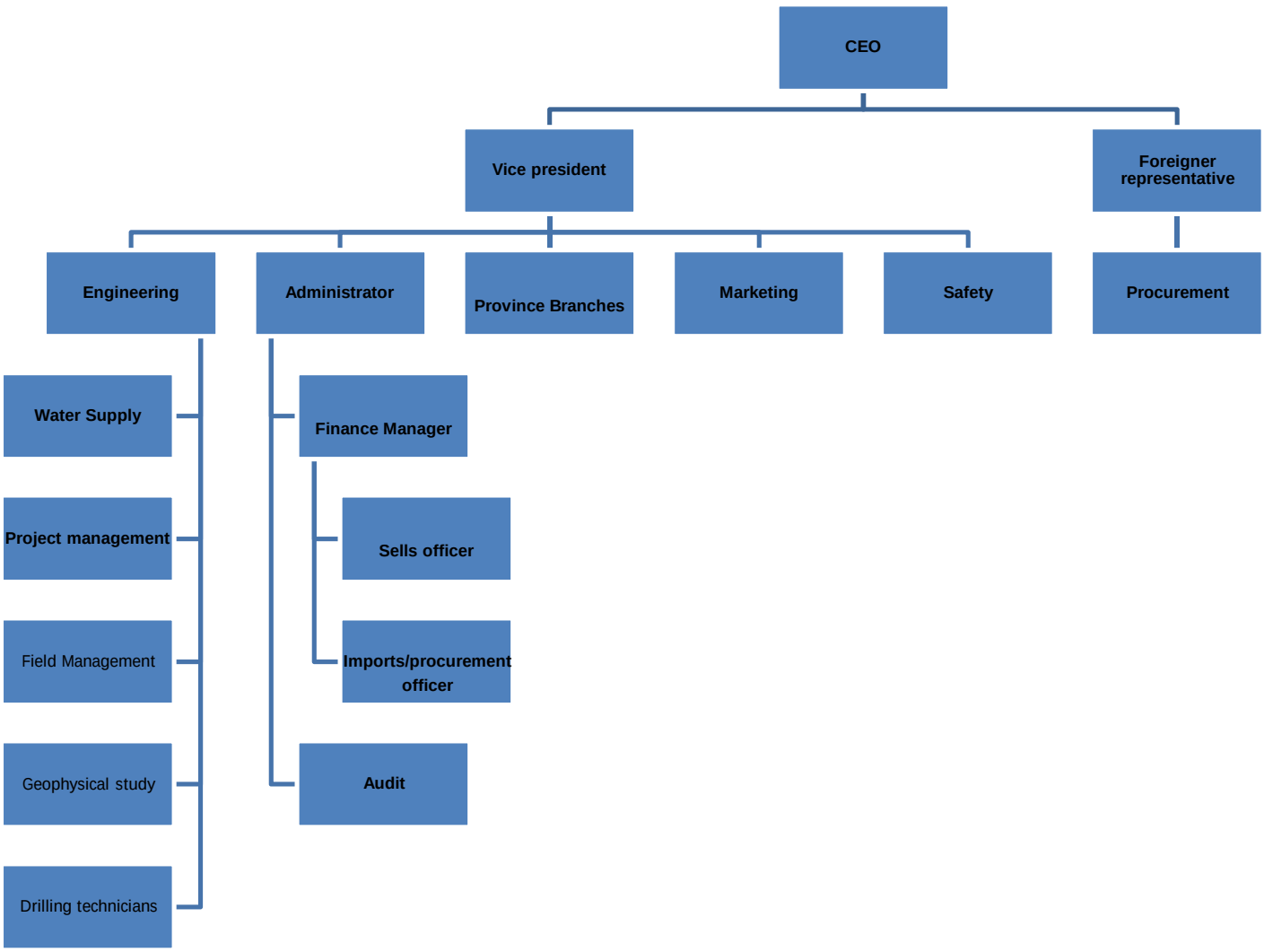
Our business policy is to meet the expectations of our customers perfectly on time on each and every occasion; to supply them with the best service which is respectful to the natural environment, which will ensure the highest customer satisfaction in terms of aesthetics and function.

SERVICES

We are maintaining our services in the following fields.

- Construction of water supply, treatment, storage and distribution systems.
- Construction of sewer lines and waste water treatment systems.
- Electrical power supply and distribution systems.

Organizational Chart



RESOURCES

OUR STAFF SELECTION POLICY

MES Construction, water supply and well drilling Co. Ltd selects the most suitable candidates based on our vision. Selection criterion includes not only technical competence, but also the ability to work within the framework of the project team. Our key personnel also must be able to communicate effectively in English as this is the primary language for many well drilling and construction projects in Afghanistan. All applicants are carefully screened via an interview by the appropriate department manager.

WATER SUPPLY DEPARTMENT PERSONNEL LIST

NO	ASSIGNMENT	EMPLOYED COUNTRY	NUMBER OF STAFF
1	Management	Afghanistan/British	3
2	Geophysical Engineer	Afghanistan/Pakistan	2
3	Topographer	Afghanistan/Pakistan	1
4	Site Engineer	Afghanistan/Pakistan/Turkish	3
5	Drilling Technician	Afghanistan/Turkey	2
6	Plumber	Afghanistan	2
7	Skilled labor	Afghanistan	15

MACHINERY & EQUIPMENT LIST

MACHINE	BRAND	MODEL	NO
Drill Rig (Capable to drill 1500m)			2
Drill Rig (Capable to drill 1000m)			2
Drill Rig (Capable to drill 300m)			1
Drilling Pipes (9.6m)			209
Drilling Pipes (6.0m)			83
Compressor (16 bar)	Innersole Rand	2000	1
Compressor (20 bar)	Atlas Copco	XRVS-466	1
Compressor (8 bar)	Innersole Rand	1988	1
Electrical compressor (20 bar)		2005	1
Generator (120kVa)			1
Generator (66kVa)			1
Water Tank (5 m^3)			5
Water Tank (15m^3)			1
Crane (5Ton)		1998	1
Welding Machine			5
Well TV camera (450m)		2010	1
Office/LSA Trailer (20ft)			2
Storage Trailer (40ft)			1
Toilets			2
Water level indicator		500	10

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AVAILABLE RESOURCES

AVAILABLE RESOURCES

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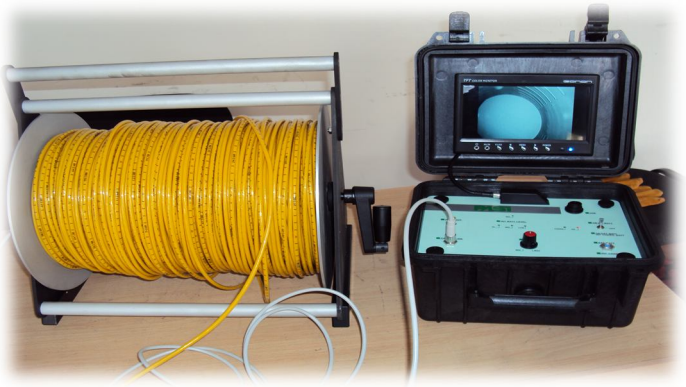
TESTING EQUIPMENTS



Project Owners

- FLUOR International Inc
- UN - United Nations
- ISAF - International Security Assistance Forces
- NATO - North Atlantic Treaty Organization
- AFCEE - Air Force Center for Engineering and the Environment
- GAFTAG - German Armed Forces Technical Advisory Group
- USACE - US Army Corps of Engineers
- CH2MHill
- CONTRACK Construction Company
- DynCorp International
- AMEC Earth & Environmental
- ECC International
- serka

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Some of Our Project Contractors

- National Techno Company
- Technologists Inc (TI)
- ITSI GILBANE Inc
- FEKA Construction Company
- Rahmat Sadat Construction Company
- Contingency Solution Inc
- AREYANA Group of Companies
- OX Construction Company
- UNAMA
- ARKEL International
- NESPAK (Hajvairy Group)
- TIKA (Turkish Embassy)
- DACAAR
- Indian Embassy
- GTZ
- ECC International
- IDEAL
- Serka Company
- eBe Construction company
- FLUOR International Inc
- REDLAND Construction Company
- Green Tech Engineering company
- UNSES construction company

Some of Our Completed Projects

RECENTLY COMPLETED WATER SUPPLY PROJECTS IN AFGHANISTAN

COMPANY	LOCATION	DATE	WELL DEPTH
Serka Company	Bagram air field well No1	2013—2014	254m
Arris Associates	Logar /NAUK Hospital	2013—2014	120m
IDEAL	Kabul /Qargha	2013	110m
IDEAL	Logar	2013	110m
Technologists Inc (TI)	Kabul Province	2013	200m
British Army	Helmand/Leatherneck Camp	2013	325m
Corps / National Techno	Herat/ANA Zafar Camp 02 well	2012—2013	500m
Crops / National Techno	Herat/ANA Zafar Camp 01 well	2012	500m
Corps / AREYANA GROUP	Kandahar/Camp Hero	2012	500m
CH2MHill / Rahmat Sadat	Kabul International Airport	2012	400m
ITSI GILBANE	Kabul/Qasaba CNP-A	2012	300m
Technologists Inc (TI)	Badghis/Cheshmi Dozakh	2012	200m
Technologists Inc (TI)	Balkh/Char Bolak	2012	150m
NESPAK (Hajvairy Group)	Kabul/Jennah Hospital	2012	110m
Supreme Camp / FEKA	Helmand/Supreme Fuel base	2011	300m
Phoenix / The great Mirwais Company	Herat Province/Zafar ANA camp	2011	275m
UNAMA	Mazar/UNAMA Regional office	2011	100m
Corps / OX	Helmand/Leatherneck	2010	500m
Rahmat Sadat	Mazar/Border Police	2010	450m
Corps / Karja Company	Kundoz Province/US Army Base	2010	300m
US Army / Freedom Company (F.C.C)	Kapisa Province/ ANA Camp	2010	200m
Technologists Inc (TI)	Samangan	2010	120m
UNAMA	Kandahar/UNAMA Regional office	2010	100m
Latvians Army	Ghor Province/Ghor Air Base	2009	160m
British Army / ARKEL International	Helmand Province/ Bastion Camp	2009	176m
TIKA	Sar-e-Pul/Kariz	2008	180m
US Marine / ARKEL International	Helmand/ Leatherneck Camp	2008	164m
British Army / ARKEL International	Helmand/Leatherneck	2008	150m
DACAAR	Faryab/Astana	2007	200m
DACAAR	Faryab/Sheren Tagab	2007	200m
Phoenix / Maiwand Company	Kabul Province	2007	160m
Contrack International	Zabul Province/Qalat City	2007	150m
TIKA	Balkh Province/Nur-e-Khuda	2007	140m
Indian Embassy	Kabul/ Indian Embassy	2006	120m
TIKA	Maidan Wardak/Maidan Shaher	2005	100m
WSI Organization	Nangarhar Province	2003	160m
GTZ (water distributions systems)	Kabul/Polytechnic University		Supply and installation
Contrack/ANA Hospital (water distributions systems)	Kabul	2008	Supply and installation

Some of Our Completed Projects

RECENTLY COMPLETED WATER SUPPLY PROJECTS IN AFGHANISTAN

COMPANY	LOCATION	DATE	WELL DEPTH
UNSES company	Kandahar	2018-2019	300 meter
Green tech company	Kandahar Airfield (KMTC)	2018-2019	300 meter
Redland Construction company	Kandahar Airfield	2018	300 meter
FLUOR International Inc	Dahlka camp Logar	2018	150 meter
MILI SHEFA Company	Industries parks	2018	250 meter
SWC Contraction company	Paktia	2017	120 meter
Khoram Eraj contruction company- two wells	Kapisa / Albirony university	2017	160 meter
TOLOSABZ construction company	Bagram Air field	2016	200 meter
eBe construction company / US embassy	Nangerhar / Jalalabad Airport	2014--2015	350 meter
ONYX construction company	Kabul / Qasaba	2014	140 meter
ECC International	Kandahar/Airport	2014	300 meter
eBe construction company / US embassy	Kabul /Deh-sabz	2014	350 meter
ECC international	Helmand /Camp Garmsir	2014	350 meter
ECC International	Kandahar/Camp Hero	2013—2014	350 meter
Serka Company	Bagram air field well No 2	2013—2014	300 meter
Many more…			

RAHMAT SADAT CONSTRUCTION & DESIGN COMPANY (RSCC)

رحمت سادات ساختماني شرکت

To: Mohammad Esa Sardar Zada

From: Rahmat Sadat Construction Company

Sub: Certificate

This is certified that Mohammad Esa Sardar Zada has completed drilling 450 meter well in Mazar Project Border Police Zone. Herby Rahmat Sadat Construction Company appreciate their hard working and is completely satisfied with the final completion status.

Thanks,

Rahmat Sadat
Director

Rahmat Sadat CONSTRUCTION & DESIGN COMPANY

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National Techno Co

Completion and Appreciation Certificate

This is to certify that **M.E.S Water Supply and Well Drilling Company** has successfully Completed

Two deep well drilling (500 meters each) works at Afghan National Army Camp Zafar (W5J9JE-10-D-0017-0013) in Herat Province. MES Water Supply and Well Drilling Company completed the drilling works of two deep wells of above mentioned depth before schedule and according to full satisfaction of client.

Therefore, we strongly recommend MES for similar jobs in future as this is the only well drilling company who is reliable and efficient to complete the job as per their commitment.

With Best Wishes

Abdul Naeem

President

National Techno Co

Kabul, Afghanistan

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
C/O EMBASSY OF INDIA
KABUL, AFGHANISTAN

No. 8(1)/CPWD/Kabul/2007/ 166 dated 6th May 2007

It is certified that M/s M Eisa Sardarzada Co. Ltd, Kabul has satisfactorily completed the work of "Construction of Indian Chancery Complex at Kabul SH : Boring of 2 nos. tube wells " on 29.04.2007. The other details of the work are as given below :

1. Contract No. : 04/EE/CPWD/2006-07
2. Gross amount of work done : US $ 27,699/=

It is also certified that firm is technically & financially sound and adequately experienced to execute works of bore wells as seen from the execution of the above mentioned work. We specially appreciate the work of their hydrologists Er. Naqibullah Ghaznavi, who is well experienced and knowledgeable. We wish them all success in their work.

(Ram Dayal)
EXECUTIVE ENGINEER
CENTRAL PUBLIC WORKS DEPARTMENT
C/o EMBASSY OF INDIA
KABUL, AFGHANISTAN

GreenTech
CONSTRUCTION & ENGINEERING

Date: June, 08, 2019

Certificate

This is to acknowledge that Mohammad Eisa Sardarzada Construction, Water Supply & Well Drilling Company (M.E.S) has worked with Green Tech Construction & Engineering Company in drilling of Water Well section in Kandahar Air Wing (KAW) project, contract No: W5J9JE-18-C-0004 US Army Project, from July, 2018 till April, 2019.

Sincerely

Ali (Rahmani)
HR. Manager

تصدیق نامه

تصدیق می شود که شرکت ساختمانی آب رسانی و حفر چاه های عمیق محمد عیسی سردارزاده در شرکت ساختمانی و انجنیری گرین تک از تاریخ جولای - ۲۰۱۸ الی – اپریل -۲۰۱۹ همکاری نموده است.

در این مدت کاری، شرکت قابل اعتماد، مسئولیت پذیر در کارهای خود پر تلاش و موفق بوده است.

در طول دوره کاری که این شرکت من حیث حفر کننده چاه عمیق در پروژه میدان هوای قندهار(W5J9JE-18-C-0004) که یکی از پروژه های مربوط قوای نظامی امریکاه بوده ایفای وظیفه نموده است، دارای ماشین الات و امکانات خوب و در تمام فعالیت خود مسئولیت پذیر و موفق بوده است.

آرزومندی ما، موفقیت هرچه بیشتر در آینده می باشد.

با احترام

Email Add: greentech@greentech.af

Some of Our Project References

CERTIFICATE of ACHIEVEMENT

AWARDED TO

Mohammad Eisa Sardarzada Co. Ltd.

For participating in an outstanding manner with the Afghan Mining Enterprise Initiative program of training, coaching and mentoring to accelerate your company's management and technical operational capacities.

Awarded this 30th day of September, 2014

Dr. Michael Heydari, MIDAS Chief of Party

Dr. Frank Ehlibe, MIDAS CIII Team Leader

Vincent White, AMEI Project Manager

Drilling of Well

Location : Camp Zafar, ANA Base – Herat / Afghanistan
Date : 2012
Sub-Contractor : MES
Depth : 500 m x 2

Drilling of well

Location : Camp Hero – Kandahar / AFGHANISTAN
Date : 2013
Sub-Contractor : MES
Well Depth : 500 m

Drilling of well

Location : Camp Supreme – Kandahar / Afghanistan
Date : 2011
Sub-Contractor : MES
Well Depth : 300m

Drilling of well

Location : Camp Hero – Kandahar / Afghanistan
Date : 2013--2014
Sub-Contractor : MES
Well Depth : 350m

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Drilling of well

Location : Kandahar Airport– Kandahar / Afghanistan
Date : 2014
Sub-Contractor : MES
Well Depth : 300 meters

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Drilling of well

Location : Deh-sabz – Kabul / Afghanistan
Date : 2014—2015
Sub-Contractor : MES
Well Depth : 350m

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WELL DRILLING METHODOLOGY

Water well construction mainly consists two phases which are primary geophysical study and well construction process.

SITE GEOPHYSICAL STUDY

Prior to start any drilling operation, a geophysical study of project site must be performed in order to obtain ground layer specifications. The purpose of this geophysical study is to;

- Determine surface and sub-surface geophysical structures.
- Determine layer thicknesses.
- Determine horizontal and vertical extension of the layers.
- Determine layer humidity depth of groundwater.
- Prepare geophysical report.

WELL CONSTRUCTION PROCESSES

- Borehole drilling
- Well construction (includes placement of filter pack, casing, screening)
- Well development (pumping Air into the well to increase yield of well by cleaning screens and aquifers and removing debris that introduced during construction of the well)
- Pump testing to identify well yield
- Well completion (includes surface grouting, placement of permanent pump and pipes, well house)
- Preparation of geophysical study reports and well construction logs

GEOPHYSICAL STUDY

Geophysical prospecting helps to determine well location, depth and diameter.

Schlumberger vertical electrical sounding array is the best technical for investigation of underground water.

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Schlumberger Array Technique

Current and Voltage electrodes are lined up in the same direction. Voltage electrodes are placed inside and Current electrodes are placed outside. “b” refers to distance between two voltage electrodes and “a” refers to distance of each Current electrodes to center of the system. “b” distance is shorter than “a” distance ($b \leq a/5$).

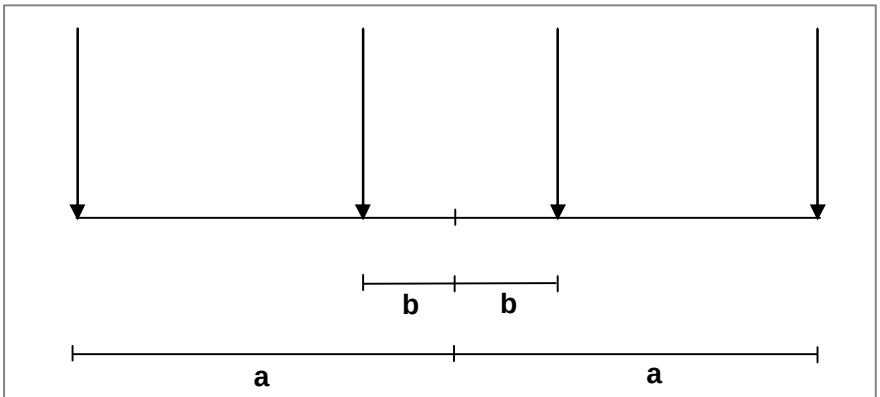

Figure: Schlumberger Array System

$$\rho(a) = K * (\Delta V / I) \qquad K = \pi (a2 - b2) / 2b$$

Impedance is calculated via the equation stated above. The results of vertical electrical sounding (VES) enables us to;

- Determine surface and sub-surface geophysical structure.
- Determine layer thickness.
- Determine horizontal and vertical extension of the layer.
- Determine humidity of the layer.
- Determine depth of groundwater.
- Prepare geophysical report.

WELL DRILLING

MES uses the biggest rotary drilling machine (capable to drill up to 1500 meters) in Afghanistan for deep well drilling. The direct rotary drilling method enables us to increase drilling speeds to reach greater depths in most formations. The borehole is drilled by a rotating bit and the waste material is removed by the special mud circulation system that also penetrates the formation to maintain the well wall non per mobility. The drilling bit is attached to the lower end of the string of the drill pipe, which transmits the rotating action from the rig to the bit. In the rotary system, drilling mud is pumped down through the drill pipe and out through the ports or jets in the bit; carrying the waste material in suspension to the surface. At the surface, the mud is channeled into a setting pit or pits where most of the waste material is sieved.

The sieved clean mud is sucked up by the pump at the far end of pit or from the second pit and re-circulated into the system.

The components of the rotary drilling machines are designed to serve two functions simultaneously; operation of the bit and continuous circulation of the drilling mud. Both are indispensable in cutting in maintaining the borehole.

Well Casing

Well casing serves as a lining to maintain an open hole from ground surface to the aquifer. To restrain extension water penetration to the well, it also provides structural support against caving materials outside of the well. Materials that will be used for well casing are PVC pipes that are specially designed for depth of wells and Black steel ASTM A53 Standard casing which can be installed in the wells. Joints normally consist of threaded couplings and weld which secure water tightness.

Surface casing is installed from ground surface through upper strata of unstable or fractured materials into a stable end, if possible, relatively impermeable material. Such surface casing serves several purposes. Including: supporting unstable materials during drilling, reduce the loss of drilling mud, facilitating installation or removal of other casing, aiding in placing a sanitary seal, serving as a reservoir for gravel pack. The casing may be temporary during drilling or it may be permanent.

Cementing

The term cementing includes the entire operation of mixing and injecting the grout. Grouting well casing involves filling the drilled hole with a suitable slurry of cement and water, is commonly used but paddled clay can also be used, if used at depth where drying and shrinkage of mud will not occur and where water movement will not wash away the clay particles. If the well construction includes both inner and outer casing, grout is placed between and outside the two casing.

Well screens

Well screens serve in two basic functions. First they support the sides of the hole in unconsolidated or fractured grout thereby preventing collapse. Second keeps sediment out of the well while still offering the largest practical open area in the aquifer to minimize resistance to flow, the materials can be PVC or Stainless steel 304.

Gravel Pack Materials

Permits use of large screen slot with a maximum open area provides an annular zone of high permeability, which increases the effective radius and yield of the well.

MES will use the size of gravel pack materials that are compliant with standards.

WELL DEVELOPMENT

Well development defined as treatment of a well by mechanical, chemical or other means for the purpose of removing an underground resistance flow. The term well development is sometime called groundwater or aquifer development it is the general process of drilling a well to make an aquifer available for water supply.

Development usually takes places as soon as the drilling of the well is complete and borehole is put into supply, the general objective is to repair any damage the aquifer caused by the drilling process to obtains maximum production efficiency.

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PUMP TESTING

MES performs pump testing prior to completion of well to identify the well yield and recovery. The common reasons for pump testing are;

- ✓ To determine the hydraulic characteristics of the aquifer and the regional pattern of the groundwater flow.
- ✓ To investigate the effects of the design abstraction rate on the water level in the aquifer and on rivers and environment in general.
- ✓ To determine the aquifer loss, well loss and efficiency of the well.
- ✓ To determine the perennial yield of the well.
- ✓ To determine the future operational set up the well.

PREPARATION OF REPORTS AND LOGS

MES prepares geophysical study reports and well construction logs following completion of well construction works. These reports and logs helps our clients to a better understanding of the ground specifications and aquifer locations. Not only the aquifer locations but also the key parameters such as well depth, screen locations, pump location, well yield and pump testing results included in these well construction logs.

Mohammad Eisa Sardarzada (MES) *Construction, Water Supply and Well Drilling Company*

KABUL HEAD OFFICE

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