Bohrlochwerkzeuge

session 4 und 5

Bohrlochwerkzeuge

session 4 und 5

SESSION			
4	Gemischte Formationen, kiesig sandig (**stabiles** Bohrloch)	- Weiches Gestein / harter Boden schräger Flanken	- Combined - Compacting reamers
5	Grob bis sehr grob unkonsolidiert Formation (**instabiles** Bohrloch)	- Casing pipe - Weiches Gestein / harter Boden schräger Flanken - DTH hammer : TCI hammer bits (slanted , eccentric)	Combined

Bohrlochwerkzeuge

session 4 und 5

SESSION			
4	Gemischte Formationen, kiesig sandig (**stabiles** Bohrloch)	- Weiches Gestein / harter Boden schräger Flanken	- Combined - Compacting reamers
5	Coarse to very coarse incoherent formations (**unstable** bore hole)	- Casing pipe - Soft rock/hard ground slanted bit - DTH hammer : TCI hammer bits (slanted , eccentric)	Combined

Bohrlochwerkzeuge

session 4 und 5

SESSION			
4	Gemischte Formationen, kiesig sandig (**stabiles** Bohrloch)	- Weiches Gestein / harter Boden schräger Flanken	- Combined - Compacting reamers
5	Grob bis sehr grob unkonsolidiert Formation (**instabiles** Bohrloch)	- Casing pipe - Weiches Gestein / harter Boden schräger Flanken - DTH hammer : TCI hammer bits (slanted , eccentric)	Combined

PILOT BORE METHOD

- Erforderliches Endprodukt beinhaltet?
  - Zementieren vorher / nachher

- Welche Methoden sind das praktikabelste?
  - Hoher Prozentsatz für den Erfolg
  - Geringer Prozentsatz für den Erfolg

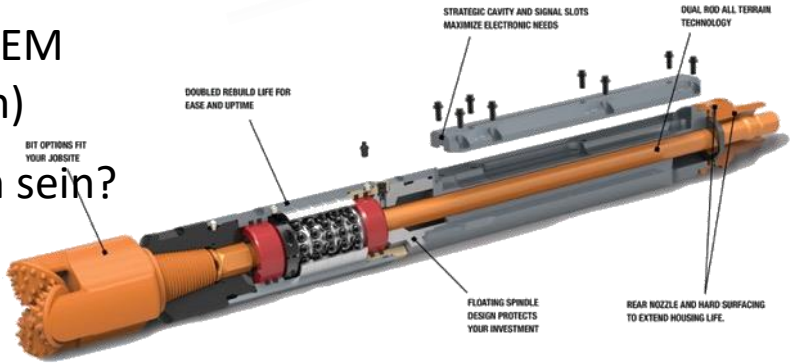
- Was sind die Einschränkungen?

- Energie, die benötigt wird, um diese Werkzeuge auszuführen, kann ein Problem sein?
-
- Bent subs

Standard jetting

AIR HAMMER

ALL TERRAIN SYSTEM
(Twins rod system)

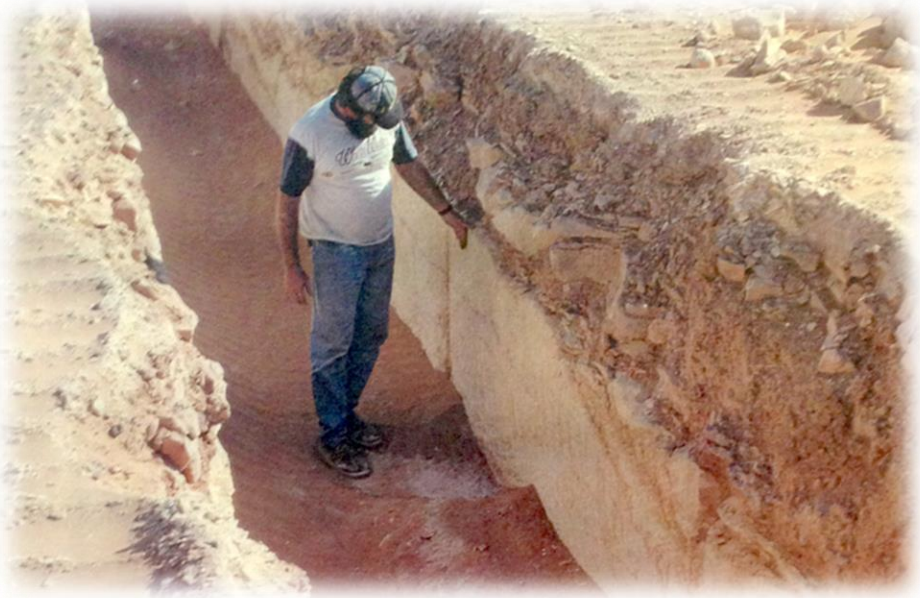


MUD ENGINE

PILOT BITS FOR ROCK

- - Choosing the correct Tricone , PDC or Rock bit

Which one will suit where?



Bit Selection

Soft Rock
Shale, Siltstone
0 to 6,000 PSI (413 bars)
Piranha Bit

Piranha Bit

Soft Rock
Sandstone, Marble, Soft Limestone
0 to 12,000 PSI (827 bars)
PDC Bit or Mill Tooth Bit

PDC Bit

Mill Tooth Bit

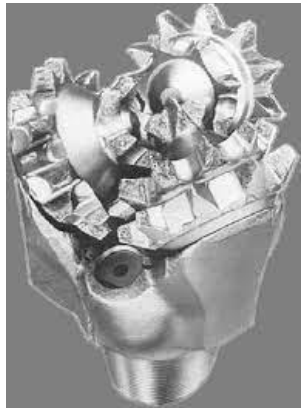
Bit Selection

TCI Bit (Tungsten Carbide Insert)

500 Series (Soft to Medium Rock)
Sandstone, Limestone, Soft Granite
6,000 to 12,000 PSI (413 to 1,103 bars)

600 Series (Medium to Hard Rock)
Dolomite, Granite
16,000 to 25,000 PSI (1,103 to 1,723 bars)

700 Series (Hard Rock)
Quartz, Basalt, Very Hard Granite
25,000 to 38,000 PSI (1,723 to 2,620 bars)



IADC CODE REFERENCE

1 1 1

First Digit:

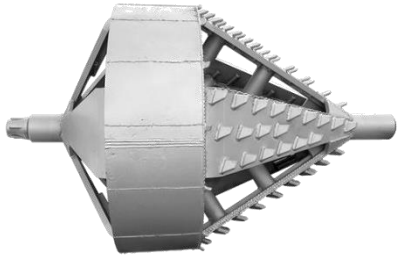
1, 2, and 3 designate Steel Tooth Bits with 1 for soft, 2 for medium and 3 for hard formations.

4, 5, 6, 7, and 8 designate Tungsten Carbide Insert Bits for varying formation hardness with 4 being the softest and 8 the hardest.

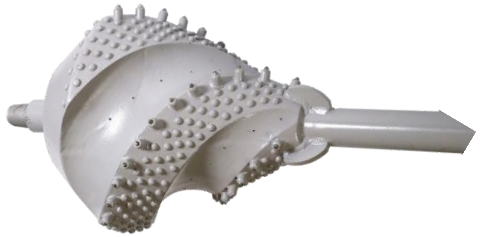
Back reaming in soft soil / stable mixed ground

1

2



3



4

- reaming
  - Tools What to select for the correct rock?
  - Get what to do before and after the main reamer (large diameters)?

  Using barrel reamers, centrelizers?
  - Pro Contra What are the risks or advantages of these tools?
    - High percentage to have a successful hole opening
    - Low percentage to have a successful hole opening

5

6

Back reaming in rock / stable mixed ground

1

- Rock drilling reaming
  - Tools What to select for the correct rock?
    - What type of cutters?
    - How many cutters?
    - Fixed arm or bolt?
  - Centralizers Why and when to use them?
  - Barrel reamers Why and when to use them?
  - Pro Contra What are the risks or advantages of these tools?
    - High percentage to have a successful hole opening
    - Low percentage to have a successful hole opening

2

3

4

5

6

Methods in unstable ground

- - Choosing the correct method: Which one will suit where ?
  - Force pull
  - cementing
  - Casing pipes
  - Other method in general

casing

high pressure cementing