

INTRODUCTION – 40 Hour VILLAGE DRILL Course

Dr. Mark King – Hydrogeologist (President, Groundwater Insight Inc., Canada)

Robert Egunza, Nicolas Ndambuki - Experienced Village Drill Drillers



*This Presentation is strictly intended for non-prescriptive use with a Village Drill.

The Village Drill user is ultimately responsible for compliance with any/all Regulations and Guidelines applicable at the drill site.



Village Drill Training Week - Participants

- Village Drill Trainers
- Interested Organizations
- Nandi County

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40 Hour Village Drill Course - Outline

Classroom - Mon, Tues, Wed AM

- Introduction
- Trainer responsibilities
- Groundwater principles
- Siting a Village Drill Well
- Assembling the drill / setting up the work site
- Drilling
- Building a well
- Drilling logs
- Well pad and pump installation
- Well development, testing
- Borehole permitting in Kenya

Field - Wed PM, Thurs, Fri


- Health and Safety
- Drilling
- Well Construction
- Pad Construction
- Pump Installation

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Course Instructors

- Classroom – Mark King
- Hands On Drilling
Robert Egunza, Nicolas Ndambuki and John Renouard

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Course Instructors – Mark King

- Consulting Hydrogeologist - Groundwater Insight Inc. (24 years)
- Environmental Projects in USA; Mining Projects in South America
- Education
 - B.Sc. – Geology
 - M.A.Sc. – Civil Engineering
 - Ph.D. – Hydrogeology
- 30 years experience in Hydrogeology (environmental and mining)
- Experience with all different types of drilling (large rigs)
- Became involved with manual drilling (Village Drill) 2 years ago



Course Environment

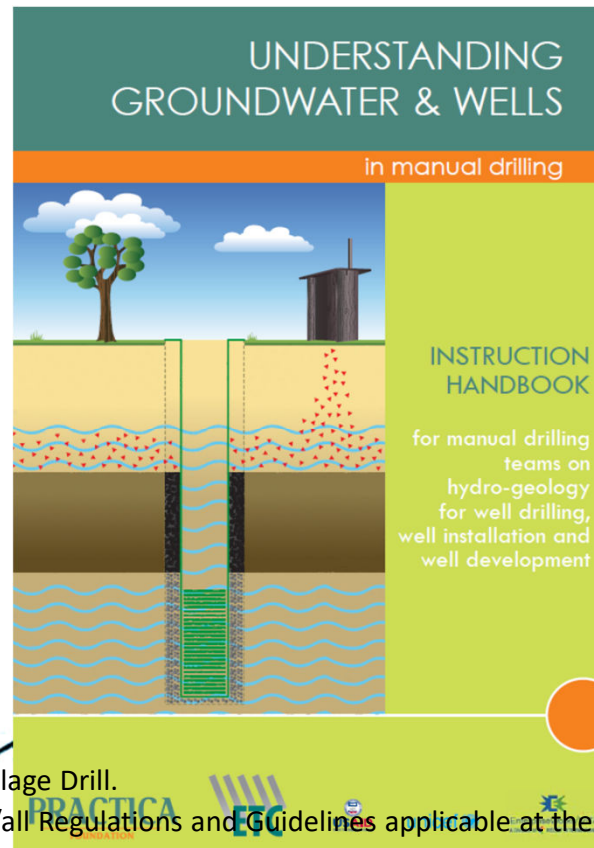
- All questions are good questions
- Discussions, and even debates, are encouraged
- However, I reserve the right to curtail a discussion, if it starts to impinge on the overall schedule
- Speaking of schedule - please arrive promptly at the beginning of the day, and after breaks

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Primary Course Information Sources

- Many documents that have been prepared by the Village Drill Project
- Instruction Handbook by the Practica team (2010)



UNDERSTANDING GROUNDWATER & WELLS in manual drilling

Instruction handbook for manual drilling teams on hydro-geology for well drilling, well installation and well development

Published by the PRACTICA Foundation

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PRACTICA Foundation develops and disseminates low-cost appropriate technology, in water and renewable energy, in developing countries. We focus on technology that responds to local cultural contexts, can be locally produced and maintained, and supports existing markets.

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Why Use the Village Drill ?

- Less expensive than conventional, large-machine wells (factor of 5-20)
- Can be used in places that are not accessible by large drills
- Simple mechanism / readily repaired
- Local employment

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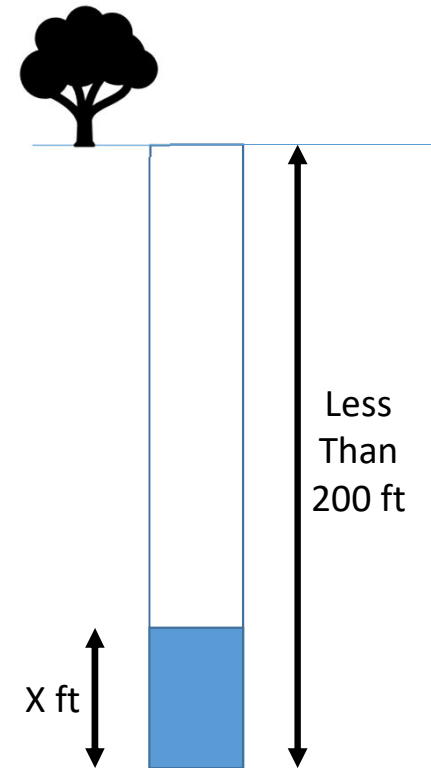
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Limitations of the Village Drill ?

- Depth (maximum depth of 150 feet)
- Best suited to penetrate unconsolidated soils (sand, silt, clay) or soft/medium rock
- May have difficulty in very hard rock

Therefore, the ideal setting for the Village Drill is:

- Good thickness of uncontaminated aquifer (water-bearing unit) is present not more than 150 feet from ground surface, even during dry season
- Material to the bottom of the water-bearing zone is unconsolidated soils or soft/medium bedrock



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The Objective of this Course

- To assist YOU in becoming an excellent Training Resource for organizations that purchase a Village Drill

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Your Roles and Responsibilities, as a Village Drill Trainer

1. Health and Safety during drilling
2. Well construction for clean water
3. Well construction for long well life
4. Practices that will support the life of the Village Drill delivered to the Project
5. Practices that will support to life of the Project

Formal H+S Manual in preparation

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Expectations for Groups that Purchase a Village Drill

1. Health and Safety is a priority
2. At least one individual in the buyer group has some background in drilling or hydrogeology (preferably both)
3. Familiar with local water well guidelines and regulations
4. Responsible for siting the first well (and future wells)

HOWEVER, we need to help them start their Project in a manner that provides a high probability of future success and sustainability