

The Application of Low Flow Pumping

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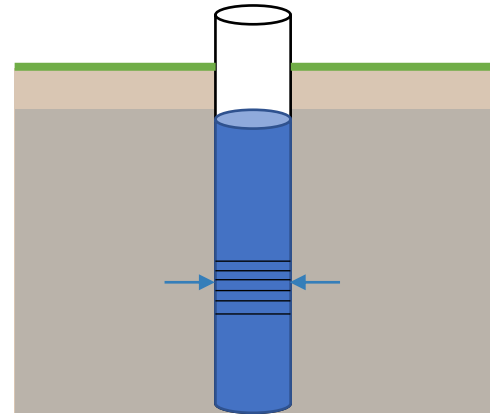
- What is low flow pumping?
- How does it differ from other sampling methods?
- Approach to low flow sampling
- Value of low flow sampling

What is Low Flow Sampling?



Refers to the velocity that water enters the pump intake within the well

- Aim to minimise drawdown of surrounding aquifer
- Pump is placed in the middle of the screened interval
- Water enters the pump intake at the same rate it flows out of the formation



Differences



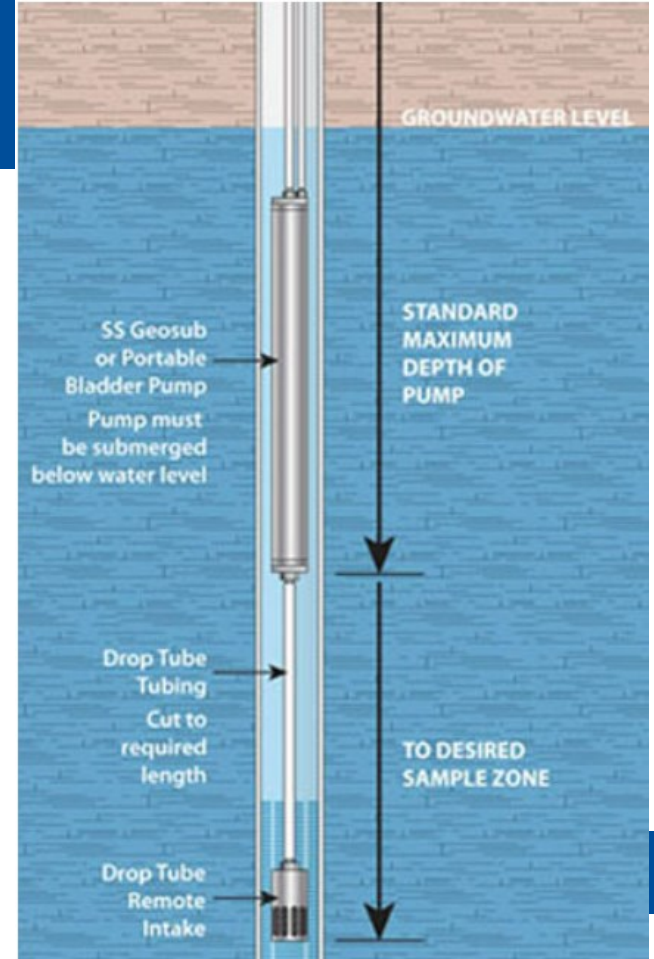
Low Flow

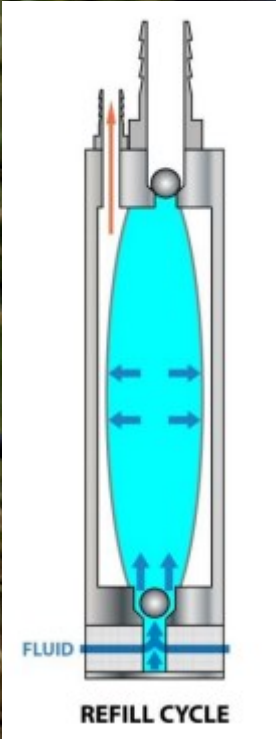
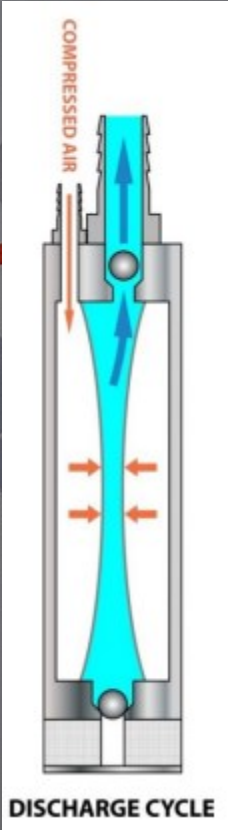
- Robin and Gilham (1987) first proposed this method
- 1 well volume
- Uniform method
- Can be used for both low and high yield bores

Purging

- Unintended negative consequences for collected samples
- 3 – 5 well volumes
- Variety of methods
- Not practical for low yielding bores

Approach to Sampling







A photograph of a landscape with a rainbow in a cloudy sky. The rainbow is the central focus, arching across the sky from the left side towards the center. The sky is filled with grey, overcast clouds. In the foreground, there is a field of green and brown vegetation. A utility pole is visible on the far left. The overall scene is a natural landscape during a storm or shortly after.

Advantages



- Reduced need for filtration
- Smaller purging volume
- Improved sample consistency
- Less operator variability
- Ability to plan
- Time efficient



Constraints



- Set up time
- Initial cost
- Trained personnel
- Bores with water level greater than 50 m require additional equipment
- If screen is blocked, sampling becomes a challenge.



Value in High Volume Projects



- Large regional scale
- Multiple teams
- High quality sampling data
- Consistent method used across different types of bores
- Ability to plan



THANKS!

Any questions?



Platinum
member

