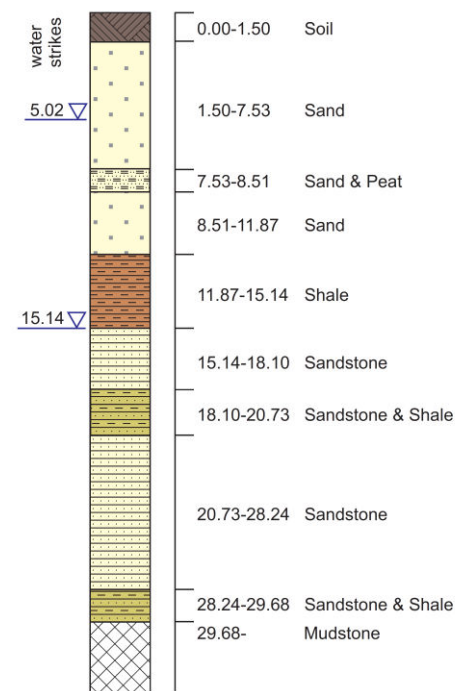


Borehole data collection

Arnaud Sterckx, IGRAC

Borehole siting, drilling and testing

Recording relevant data from activities related to the construction of new boreholes, such as stratigraphic log, water strike, borehole design, aquifer properties (from pumping test), water quality (sampling), etc.

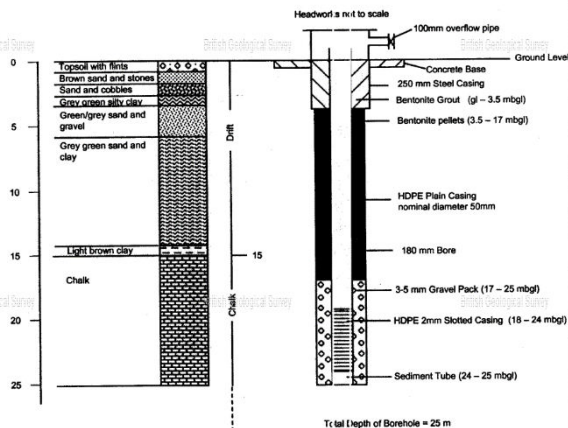


Borehole Lithology & Construction: Southgate Bridge - Chalk

Constructed: October 2002
 Aquifer: Chalk
 Grid Reference: TL 8646 6342

Water Level: 30.759 mAOD (06/11/2002)
 Datum Elevation: 32.619 mAOD
 Datum Location: Top of Flange

*33.619
 (according to Atkins
 21/3/03)*

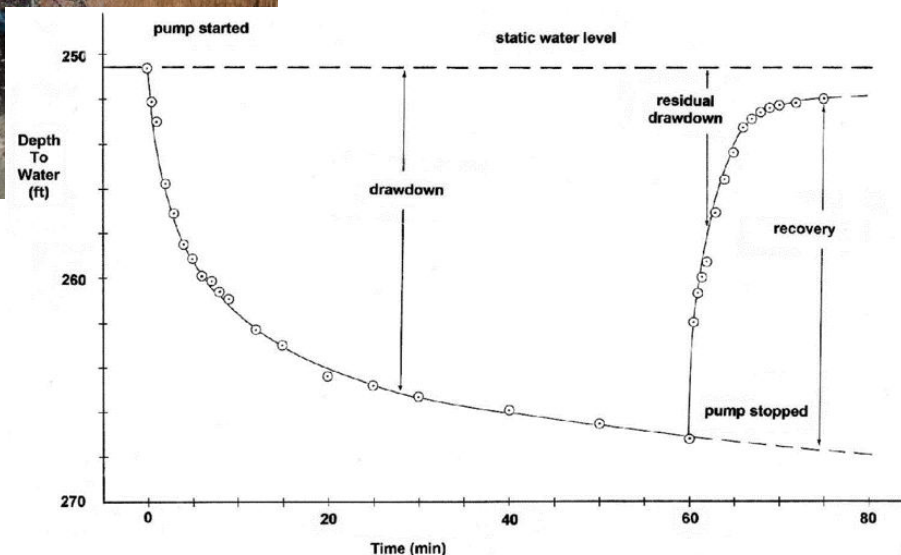


NOTES
 All depths are in metres below ground level unless
 otherwise stated
 HDPE slotted and plain casing nominal diameter 50 mm

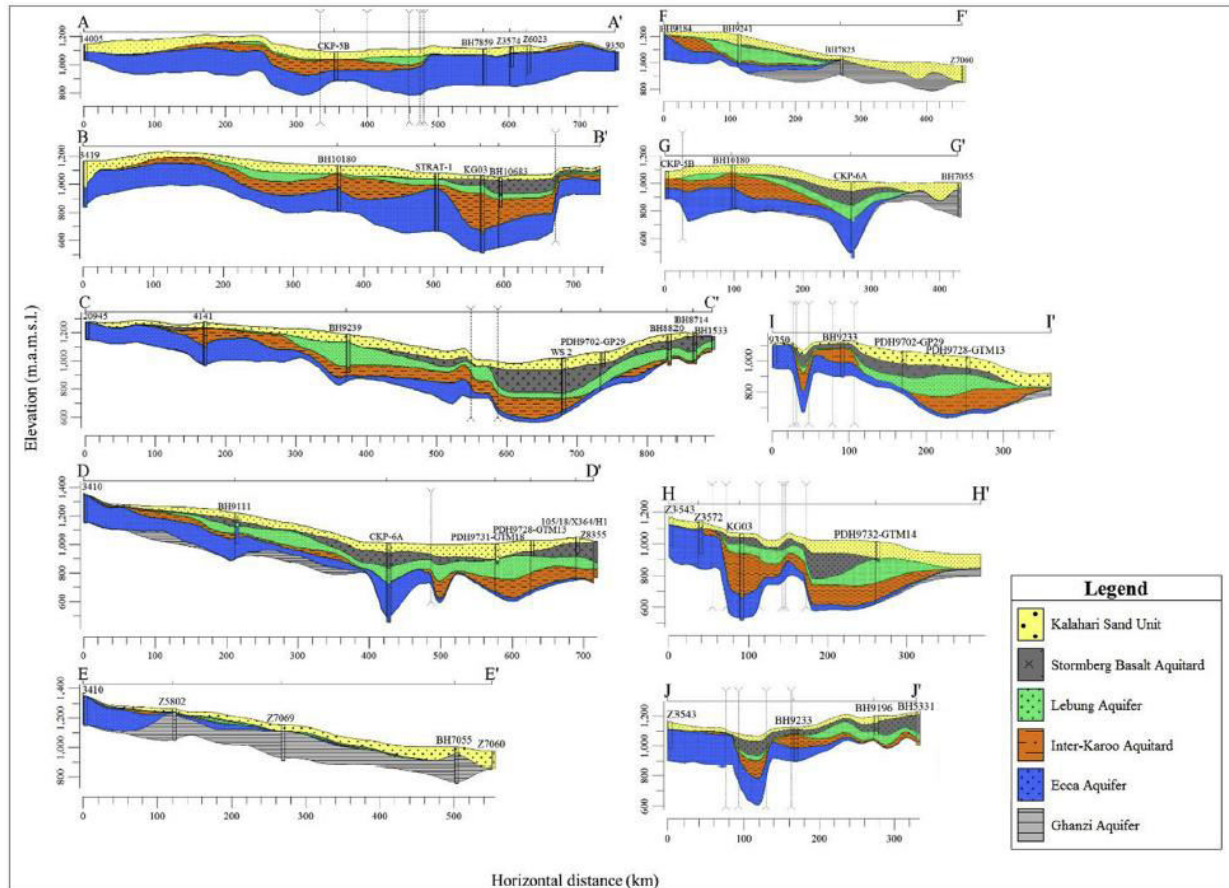
Figure 2.9

AWIS Low Flow Rivers

ATKINS



- Borehole data provide key information on stratigraphy and productivity of aquifers.
- Stratigraphic logs cannot be recorded after the casing is installed... don't miss this opportunity!



<https://doi.org/10.1016/j.pce.2018.05.006>

- Such data is very useful for groundwater development (e.g. drillers).

Système d'information hydrogéologique (SIH) du Québec



Paramètres de l'extraction

Nom de la municipalité : MRC

Abercorn: Brome-Missisquoi
Acton Vale: Acton
Adstock: Les Appalaches
Akwasasne: Le Haut-Saint-Laurent
Albanel: Maria-Chapdelaine
Albertville: La Matapédia
Alleyne-et-Cawood: Pontiac

Projection cartographique

- ☒ Coordonnées géographiques (Lat-Long)
- ☐ Universal Transverse Mercator (UTM)
- ☐ Modified Transverse Mercator (MTM)

Champs d'information disponibles

1. ☐ Propriétaire initial
2. ☐ Adresse (adresse, ville et code postal)
3. ☐ Diamètre du puits
4. ☐ Profondeur du puits
5. ☐ Matériau du tubage
6. ☐ Longueur du tubage
7. ☐ Niveau d'eau à la fin des travaux
8. ☐ Date du pompage
9. ☐ Durée du pompage
10. ☐ Débit
11. ☐ Méthode de forage
12. ☐ Numéro de puisatier
13. ☐ Description des lithologies

Soumettre la requête

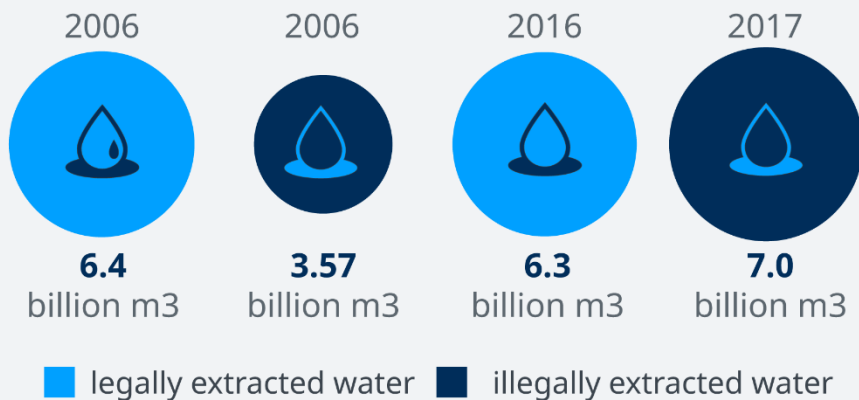
<http://www.sih.environnement.gouv.qc.ca/index.html>

- Data from boreholes drilled or commissioned by public authorities should be collected and stored in the responsible department. It is not always the case...
- Data from private boreholes should be collected too. This usually happens during the registration of new boreholes.
- In many countries, new boreholes MUST be registered.
- Borehole licensing is primarily a measure to control groundwater abstraction.
- Sometimes a license must be purchased, for example above certain pumping rates.
- However, it is challenging to enforce such regulation...

Example: In Flanders, it is estimated that 10 to 20% of boreholes are illegal (unregistered or abstraction rate is higher than declared). More controls are needed.

<https://www.eoswetenschap.eu/natuur-milieu/illegale-grondwaterwinning-bemoeilijkt-strijd-tegen-droogte>

Illegal water extraction in Spain



Source: Greenpeace

© DW

Between 2017 and 2019, local authorities in Andalusia have opened 943 cases for groundwater diversion, half of which were in Huelva, the strawberry capital of Spain. The government are able to fine perpetrators up to €1 million (\$1.15 million).

<https://www.dw.com/en/spains-vast-network-of-illegal-wells-exposed-after-death-of-toddler/a-47311150>



<https://www.waternewseurope.com/spain-taken-to-court-for-over-abstraction-aquifers-coto-donana/>

Doñana Wetlands are an important wetland (GDE), protected by the RAMSAR Convention (<https://rsis.ramsar.org/ris/234>)

According to WWF, an estimated 1,000 illegal wells and 3,000 hectares of illegal farms are contributing to unsustainable water use.

In 2019, EU Commission takes Spain to Court (ECJ) for failure to protect the Doñana Wetlands, according to Water Framework Directive and Habitats Directive.

- Registration of borehole data can be promoted with (online) forms, whereby drillers can easily forward data to the authorities.
- Registration fees (if any) could be lowered, and requests should be answered rapidly.
- An excellent incentive for drillers to share data would be to make all data publicly available online (drillers are data providers AND users of borehole data) → lead by example