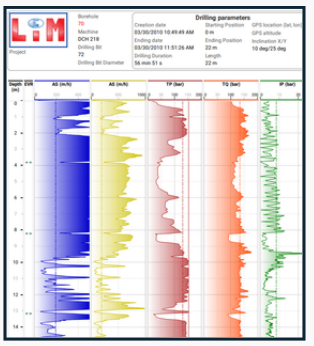
LIM SOLUTION FOR FOUNDATIONS

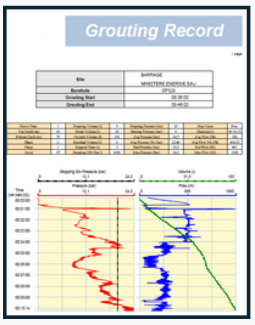
Drilling, Slurry Injection, Jet Grouting - Real-time process monitoring and data recording

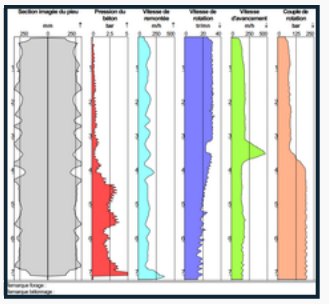
PocketLIM/MiniLIM/NanoLIM - Drilling parameters (M.W.D)

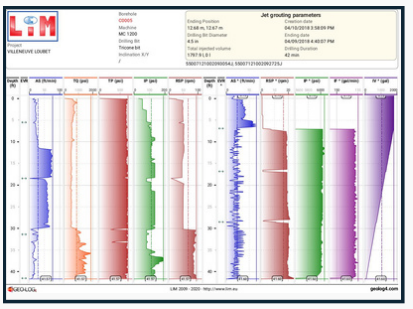


Drilling parameters recording - Applications: Controls, Anchors, Micropiles, ...

PocketLIM - Slurry Injection, Jet-Grouting, DSM, ...

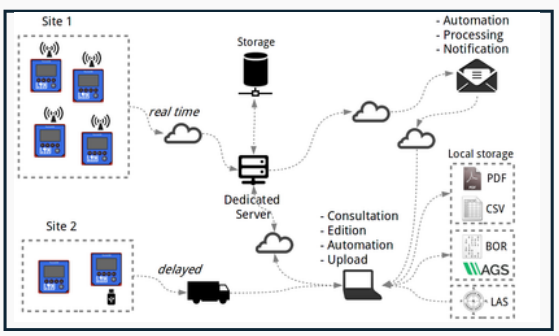






Monitoring and control of grout injection (low pressure), Jet-Grouting method, DSM, ...

LIM@mail / GEO-LOG 4 - data transmission and processing

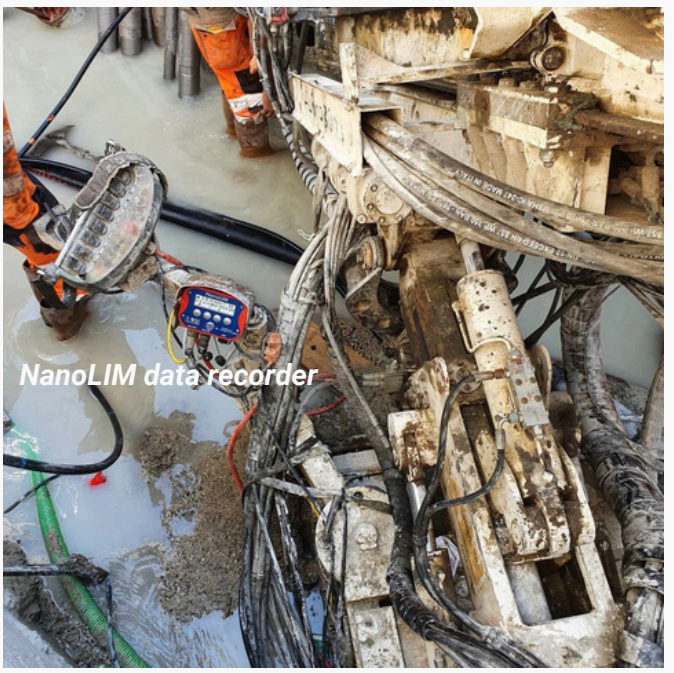


LIM SOLUTION FOR FOUNDATIONS

Drilling parameters

REAL-TIME RECORDING OF DRILLING PARAMETERS

PocketLIM/MiniLIM/NanoLIM-DRILLING



Drilling parameters recorded vs depth:

- ✓ Instantaneous Drilling (Advance) Speed or Penetration Rate;
- ✓ Bit (Tool) Pressure or Feed Pressure;
- ✓ Injection Pressure of the drilling fluid;
- ✓ Rotation Torque Pressure;
- ✓ Rotation Speed (Bit RPM).

Technological advantages:

- ✓ CANBUS technology, CAN open protocole;
- ✓ GPRS 3G/4G modem and Wifi module for data transmission and information in real time;
- ✓ PocketLIM: possibility of real-time display on a remote screen (laptop, tablet, smartphone);
- ✓ PocketLIM & MiniLIM: multi-application data recorder, drilling parameters, slurry injection, jet-grouting, other foundations processes.

Main applications :

- ✓ Geological and geotechnical control;
- ✓ Ground anchors installation;
- ✓ Grouting control;
- ✓ Micropile placement control;
- ✓ Underground work: reconnaissance drilling in progress.

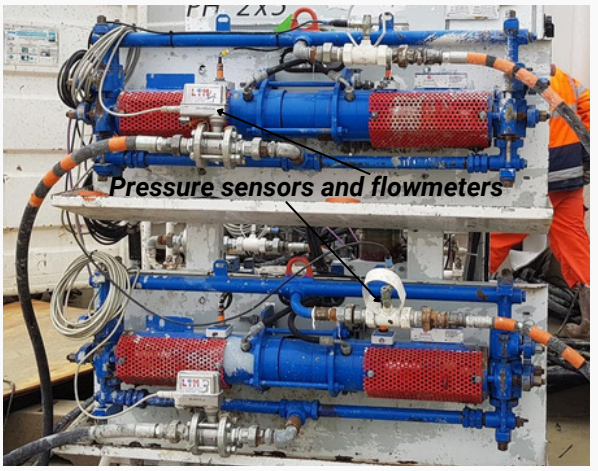
MiniLIM-Drilling installed in the cabin of a drilling machine for underground work (jumbo drill rig)

LIM SOLUTION FOR FOUNDATIONS

Slurry Injection - Jet Grouting

GROUT INJECTION MONITORING AND CONTROL (LOW PRESSURE)
MONITORING AND CONTROL OF JET GROUTING COLUMNS

PocketLIM-GROUTING



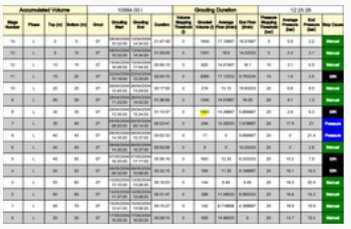
Functions for 1 to 4 grouting pumps simultaneously:

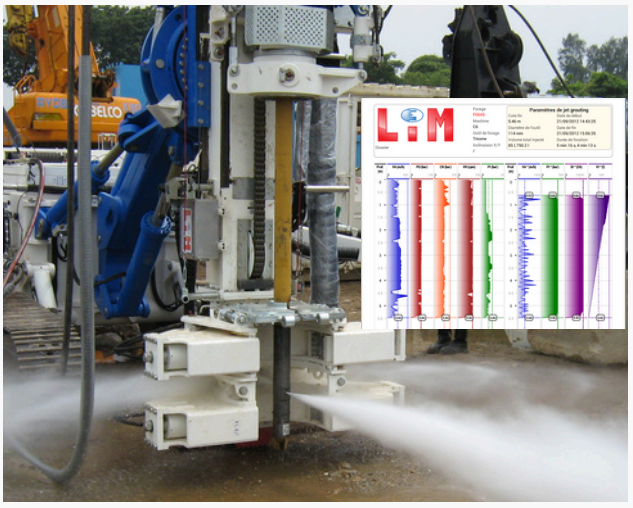
✓ Real-time digital recording of Flow / Pressure / Volume parameters of the grout injected vs time (max. Pressure = 40 bar);

✓ Control of the grouting with servo-control of the presses according to the parameters Volume, Pressure and GIN (Grouting Index Number);

✓ Flow rate proportional regulation of the grouting presses according to Pressure setpoints;

✓ The INJECTSOFT software allows the editing of reports (Grouting pass, daily report, site report) and grouting graphics.





PocketLIM-JET

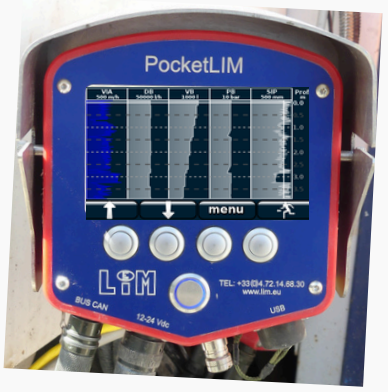
Drilling stage (descent)

Recording of the following parameters:

✓ Advance drilling Speed (IAS);

✓ 3 hydraulic pressures, Tool Pressure (TP), Rotational Torque Pressure (TQ) and Drilling Fluid Injection Pressure (IP);

✓ Rotation Speed (Bit RPM).



Jetting stage (ascent)

1) Automatic ascent control by programming station times and steps as well as the Rotation speed..

2) Recording of the following parameters:

✓ Ascent Speed of the Drilling Tool (IAS up);

✓ Rotation Speed (Bit RPM);

✓ Flow rate (Q), Volume (VOL) and Pressure (IP) of the Grout;

✓ Flow rate (Qa) and Pressure (AP) of the Air (DOUBLE JET);

✓ Flowrate (Qw), Volume (VOLw) and Pressure (WP) of the Water (TRIPLE JET);

LIM SOLUTION FOR FOUNDATIONS

CFA piles

MONITORING AND ACQUISITION OF FOREST PILE PARAMETERS USING THE HOLLOW AUGER

Before drilling:

✓ Drill mast positioning aid (2D X, Y inclinometry)

During drilling:

✓ Drill mast inclinometry (display);

✓ Forward speed, auger penetration.

✓ Rotation Torque Pressure;

✓ Rotational Speed of the drill bit.

During the concreting phase:

✓ Drill mast inclinometry (display);

✓ Ascent speed, auger extraction;

✓ Torque and Rotation Speed;

✓ Concrete pressure;

✓ Instantaneous consumption of Concrete;

✓ Percentage of filling as a function of the theoretical pile diameter.

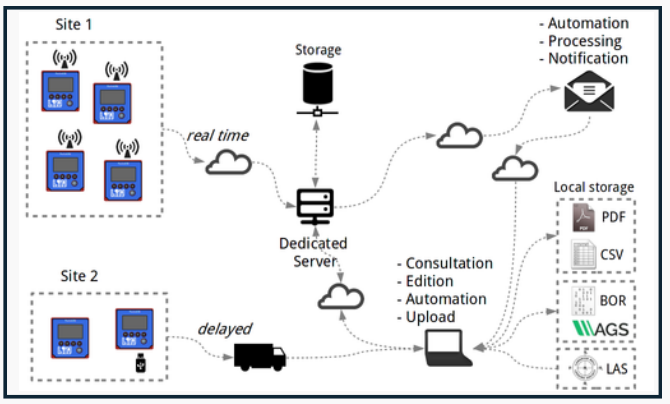
LIM SOLUTION FOR FOUNDATIONS

LIM@mail - GEO-LOG 4

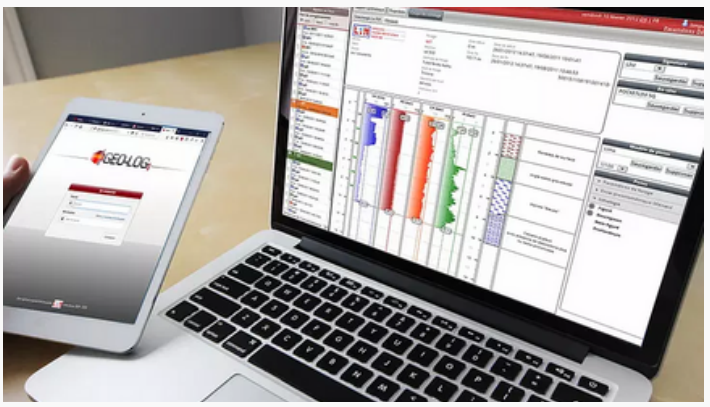
AUTOMATIC DOWNLOAD AND PRE-PROCESSING OF RECORDED LIM DATA

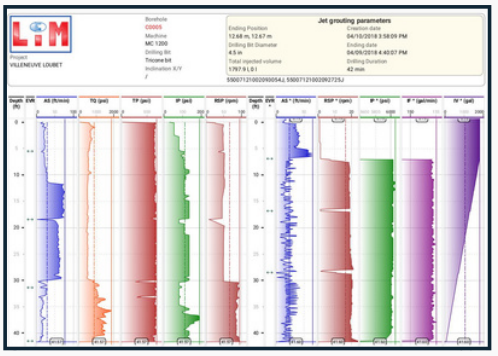
LIM@mail

- ✓ Web application in the cloud;
- ✓ Management of PocketLIM data file transmission over the internet (3G/4G, Wifi), with synchronization;
- ✓ Automatic pre-processing with generation of the PDF graphic report;
- ✓ Resending of data files in BOR, CSV and PDF formats to selected email addresses;
- ✓ LIM data recorders management;
- ✓ Management of user email addresses;
- ✓ Listing of the files received;
- ✓ Summary of receptions;
- ✓ Choice of the type of attachments;
- ✓ Delayed sendings.



DATA PROCESSING AND REPORTING LAYOUT





GEO-LOG 4

- ✓ Solution in the cloud;
- ✓ Drilling parameters;
- ✓ Jet-Grouting, DSM, .. parameters;
- ✓ Geological and geotechnical interpretation;
- ✓ Technical section of the borehole (drilling, methods, tools, fluid, casing, ...);
- ✓ Water levels;
- ✓ Accessible and user friendly application;
- ✓ View, edit and display data on screen such as in the final report;
- ✓ Fully graphical report templates creation and customization (headers & tracks).