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DFI Rock Grouting Scheme Development

Recap questions for Dan and DIGGS

Show GitHub page - Nick provided an overview. Please monitor this and join us to share information and ideas.

Intro of rock grouting schema - Dan went over this in general terms. it is in the version 2.6 branch that should be visible soon on github for reference. (video did not work today unfortunately)

Goals for today:

Basic Structure that makes sense (for all grouting if possible and other geo construction activities)

Mandatory vs Optional objects

Single vs many

clarify names and definitions (initially)

future additions are ok, deletions are not good.

Big picture about Construction Activity top level category

Other tech: cutoff walls, drilled shafts, piles, Many forms of grouting that will have slightly or significant different structures - we believe most will fit into the Construction Activity structure we are creating by adding and reusing objects we already have.

Walk through grouting project

Thoughts on review of grout form and tables... what is missing (big picture)

Artesian Pressures - applied to grouting, net pressure or site data, or drilling records?

If there are items of general meta data important to how a project is set up, we should capture these. The current scheme has the basic project info already covered. but may not have things like grout caps etc.

Do we need special zone or other lithology tools to capture site or structure designations related to grouting that may not be consistent with normal geologic structures.

Specific components

If everyone has examples send along.

Site:

Mix Design: Mud Balance, Flow Cone

- Line loss calculations would limit to 10-20 points if collected manually, but if automated data collection is used then there could be hundreds of points. - include equipment, pump, piping, packers, ... dont need to capture A, B and C of regression... that can be done on the fly??? if we include A, B, C, we need to defined the method of calculating, 2nd order polynomial....
- The line loss data is used in head calculations.

Drilling:

Various activities and types of materials placed and equipment used in various intervals of borehole, standpipe, annuls backfill (single and multiple lift placement), sleeve port injections, redrilling, rewash, retest, regrout...

Water test:

Grouting:

Multiple regrouts in a hole or stage
clarify terms like: stage, zone, interval...

TrendData (or Time Series) - do we separate the data from the results (interpreted data) or for ease of storage, keep them together?

Enumeration. add Measured raw (instrument data at instant) or measured moving average (average over a minute or some time frame) or use calculated and indicate what the calculations is. Lugeon or moving average.

- clarify enumeration for objects.

Verification:

OPTV-optical televiewer (initially, yes or no) then get well cadd or data file direct from vendor - Dan can follow up with Vanessa to understand this data structure more.
Caliper data

Future implementation steps -

Robust and solid extensible data structure that we agree upon -

Use of different grouting methods and equipment will dictate different data sets. continuous flow or incremental (HMG vs LMG)

capture interpretation methods in our data sets. be careful about how we measure and interpolate time histories

Every company has their own data compilation systems need to identify special elements. keep organized and focused on rock grouting which will be hard enough before we extend to other technologies

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Follow up

- Share example logs and files that will describe data sets as well as grouting processes, hole prep, grout equipment configuration, nomenclature
- Dictionary/definition reviews - this will be a key step for the team or grout committee to review and agree upon.
- Workshop 3 schedule? October 7 2 PM