NY-GEO Top Job Competition April 2019

All-American Self Storage
Chelmsford, MA

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Last year, Lloyd called me an Interloper with my Red Sox Cap.

I want you to know I have roots in New York.

I am Colgate Geology Class of 1985
Project Site and Scope
Why was Geothermal Selected?

• Low Operating Cost = Higher Value for Facility
• High efficiency and Low Carbon Footprint
• Ability to service multiple zones on one AHU/GSHP
• Client thinks Geo is Cool
• Straightforward monitoring, remote control and remote configuration

*Client trusted us based on prior project
Project Parameters

• 130,000 Square Foot Building
• Vertical Closed Loop - 18 Borings to 420’
• Design relies on Bentonite/Graphite Grout with a Thermal Conductivity of 1.6 Btu/hr-ft-°F
• Variable Speed GSHPs
• Variable Speed Circulation in Primary-Secondary Configuration
• Remote Monitoring, Control and Configuration
VCL Construction
Quality Control Matters
QC Checks

- Bedrock Type Confirmed During Drilling
- Boring Depths Confirmed
- Formation Thermal Conductivity Test - 1.73 Btu/hr-ft-°F
- Grout TC Test at Test Boring averaged: 1.56 Btu/hr-ft-°F
- Grout TC Testing during VCL Install averaged: 0.861 Btu/hr-ft-°F
  - Installed 2 additional borings (TC 1.634) for field average of 0.969 Btu/hr-ft-°F.
- Borings located via Total Station Survey and via Drone Images
  - Site contractor hit piping twice making location information important
Completed Project
All-American Self Storage 2019
Why is All-American Self Storage the Top Job?

Scope of Project: 130,000 square feet
High Performance, Variable Speed Equipment
Designed with Low Borehole Thermal Resistance
Redundant Systems
Support of multiple zones on one GSHP
Use of monitoring system to optimize efficiency
Last but not least: Quality Control saved the day
Contact Information:
Larry Lessard
LLessard@AchieveRenewable.com
978-338-5548 x102