THE FUTURE OF GEOTHERMAL FLUSHING & PURGING

Russell V. Buras - President / CEO
• With a proper design and installation, what is the only other thing that can hinder the water side of a geothermal system from working correctly?
SYSTEMS MUST BE FLUSHED & PURGED CORRECTLY!
THE FUTURE

- 2 ft / sec is NOT enough and will fade from being the accepted "standard"
- Tougher Requirements
- Third Party flush and purge
INDUSTRY DYNAMICS

- Designs are changing
- New players
- Variable experience
- Need for third party service approach
- Generational change
- Risk management
- 2 ft / sec is NOT enough
WHERE DO YOU FIT IN

• Engineer / Designer
• Educator / Consultant
• Driller / Installer
• Owner / End user
• Mechanical contractor
• Supplier
EVERYONE

• Per ASHRAE presentation some years ago that one of the biggest problems with geothermal systems is the flushing and purging.

• Often approached as an afterthought

• Lack of experience & understanding

• Finger pointing

• $$$ - poor performance / higher maintenance / reduced life cycles / legal
ENGINEERS / DESIGNERS

- Afterthought or Cut & Paste
- Optimize design - larger pipe sizes can be required for flush flow
- Lack of experience & understanding - Seek and ye shall find!
- Purge Ports - 50% rule & location
- Bypasses
ENGINEERS / DESIGNERS

- Air traps
- Look for "Best of Class" standards
- VE opportunities - strainers
- House pumps should not be big enough to flush & purge
- Commissioning for LEED and more system installation documentation is desirable
- Third party can reduce your risk
EDUCATORS / CONSULTANTS

• 2 ft per sec is not enough
• Pursue continuous improvement
• Promote better practices
• Third Party - Promotes professionalism with an expert approach
DRILLERS / INSTALLERS

- Many do not have the correct equipment
- May not understand the interior design
- Lack Documentation
- Risk Reduction
- Pass thru costs on Third Party
OWNERS / END USERS

- Large investment, why not insure proper flush & purge?
- Reduce your risks
- Optimize performance
- Have a service company in your contact list
MECHANICAL CONTRACTORS

- Need to understand exterior and interior merge
- Team approach
- Chemical or glycol implications
- Single source to eliminate finger pointing
SUPPLIERS

• Question designs such as vaults

• Make inquiries and suggest qualified service providers

• Collaboration efforts

• Involves water treatment companies
THIRD PARTY CAPABILITIES

• Flushing & Purging of any size geothermal system in 4 to 6 ft/sec range

• Consulting on optimizing design for flushing and purging.

• Water analysis, softening, inhibitor and glycol insertion.

• Service oriented staff
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QUESTIONS ???

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