Geothermal Well Drilling Guideline

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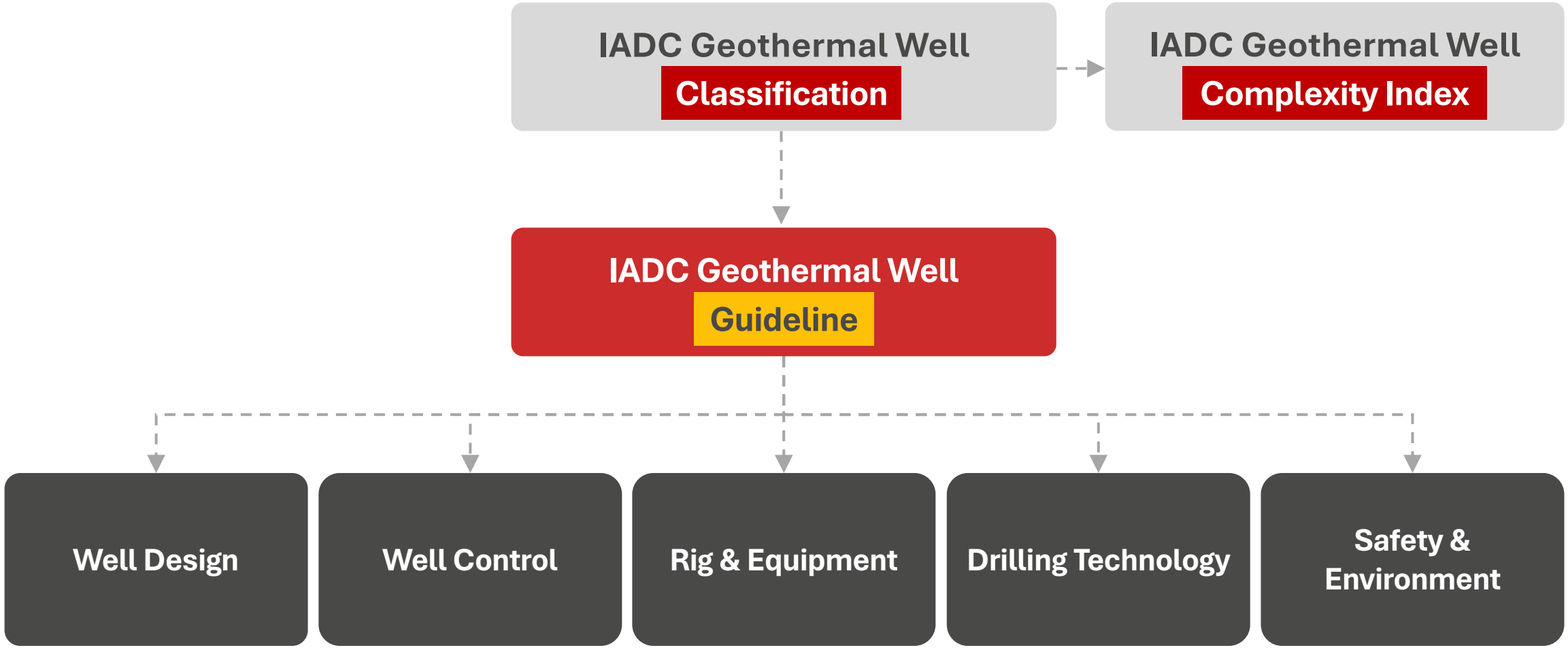
Geothermal 2026 - Accelerating Geothermal Energy | Aberdeen

The Geothermal Committee aims to enhance the pivotal role of the drilling industry in expediting geothermal energy development.

IADC Geothermal Well Guideline

WHAT IS A GEOTHERMAL WELL?


IADC Geothermal Well
Classification
IADC Geothermal Well
Complexity Index
IADC Geothermal Well
Guideline
Well Design
Well Control
Rig & Equipment
Drilling Technology
Safety & Environment

IADC Geothermal Well Classification

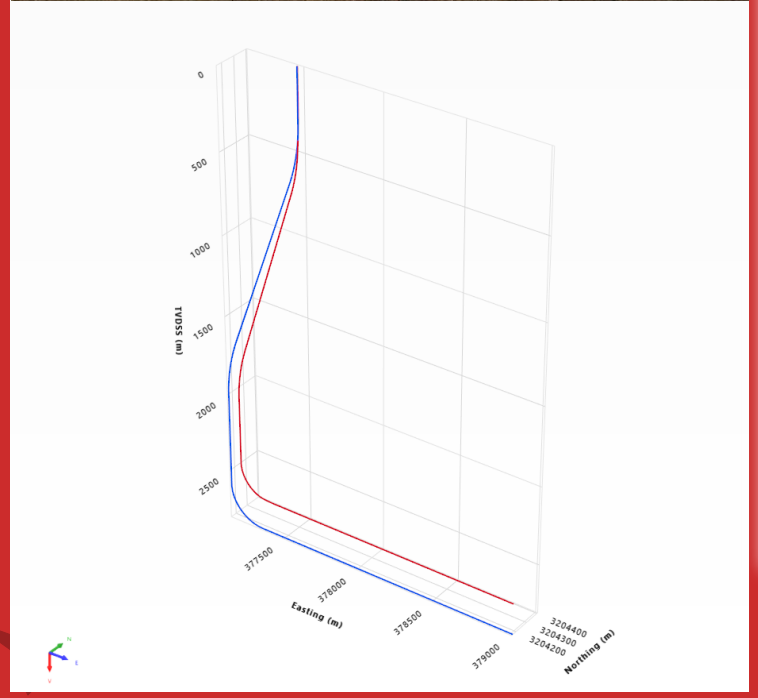
Project Level | **Site** Level | **Well** Level

Reservoir Dependency	Asset Purpose	Location Sensitivity	Rig Capacity	Design	Construction	Drilling Complexity	Well Control
Reservoir Dependent	Heat Production	Rural	Superlight	Re-Entry	Circulating Temp	Predominant UCS	Liquid
Reservoir Independent	Power Production	Industrial	Light	Function	Low	Low	Two-Phase
	Mineral Extraction	Urban	Medium	Select	Medium	Medium	Vapour
		Offshore	Heavy	Well Geometry	High	High	Hydrocarbons
		Residential	Superheavy	Final Hole Ø	Pressure Regime	Very High	Toxic Gases
		Sensitive		No. of Sections	Sub-Hydrostatic	Interbedded	Supercritical
				Vertical Depth	Hydrostatic	DDI	
				Design Parameters	Over Pressured	Low	
				Max Temp	UBO & MPD	Medium	
				Max Pressure		High	
				Stimulation		Very High	
				Scaling		Multilateral	
				Corrosion		Interception	

The values presented in the following examples are for illustrative purposes only and do not contain or imply any confidential or proprietary information.

Enhanced Geothermal System

Utah – United States



Project Level | **Site Level** | **Well Level**

Reservoir Dependency	Asset Purpose	Location Sensitivity	Rig Capacity	Design	Construction	Drilling Complexity	Well Control
Reservoir Dependent	Heat Production	**Rural**	Superlight	Re-Entry	**Circulating Temp**	**Predominant UCS**	**Liquid**
Reservoir Independent	**Power Production**	Industrial	Light	Function	Low	Low	Two-Phase
	Mineral Extraction	Urban	**Medium**	**Production**	Medium	Medium	Vapour
		Offshore	Heavy	Well Geometry	**High**	High	**Hydrocarbons**
		Residential	Superheavy	**9-7/8"**	**Pressure Regime**	**Very High**	**Toxic Gases**
		Sensitive		**3 sections**	Sub-Hydrostatic	Interbedded	**Supercritical**
				2,600 m	**Hydrostatic**	**DDI**	
				Design Parameters	Over Pressured	Low	
				200 °C	**UBO & MPD**	**Medium - 6.18**	
				10,000 psi		High	
				Stimulation		Very High	
				Scaling		Multilateral	
				Corrosion		Interception	

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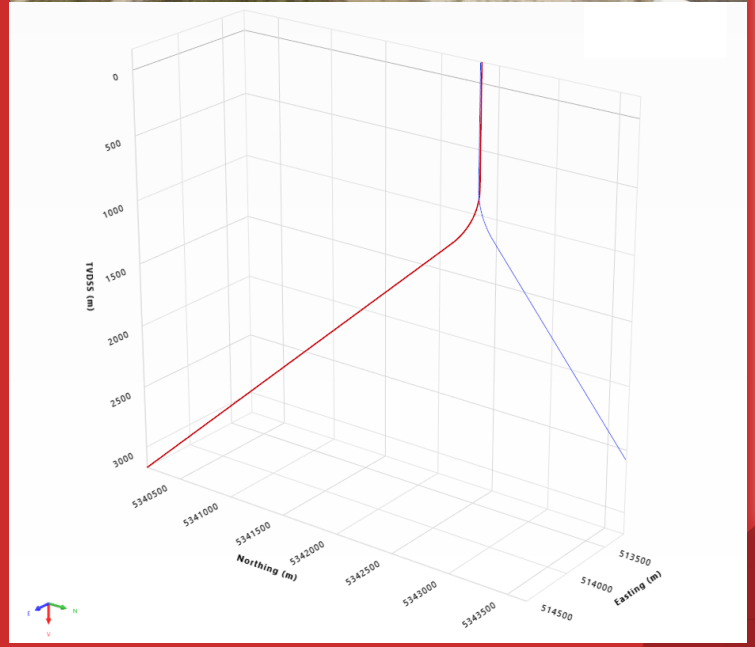
Low Enthalpy

Vienna – Austria



Project Level		Site Level		Well Level			
Reservoir Dependency	Asset Purpose	Location Sensitivity	Rig Capacity	Design	Construction	Drilling Complexity	Well Control
Reservoir Dependent	**Heat Production**	Rural	Superlight	Re-Entry	**Circulating Temp**	**Predominant UCS**	**Liquid**
Reservoir Independent	Power Production	Industrial	Light	Function	**Low**	Low	Two-Phase
	Mineral Extraction	**Urban**	**Medium**	**Production**	Medium	**Medium**	
		Offshore	Heavy	Well Geometry	High	High	Vapour
		Residential	Superheavy	**8-1/2"**	**Pressure Regime**	Very High	
		Sensitive		**3 sections**	Sub-Hydrostatic	**Interbedded**	**Hydrocarbons**
				3,300 m	Hydrostatic	**DDI**	Toxic Gases
				Design Parameters	**Over Pressured**	**Low - 5.74**	Supercritical
				120 °C	UBO & MPD	Medium	
				4,000 psi		High	
				Stimulation		Very High	
				Scaling		Multilateral	
				Corrosion		Interception	

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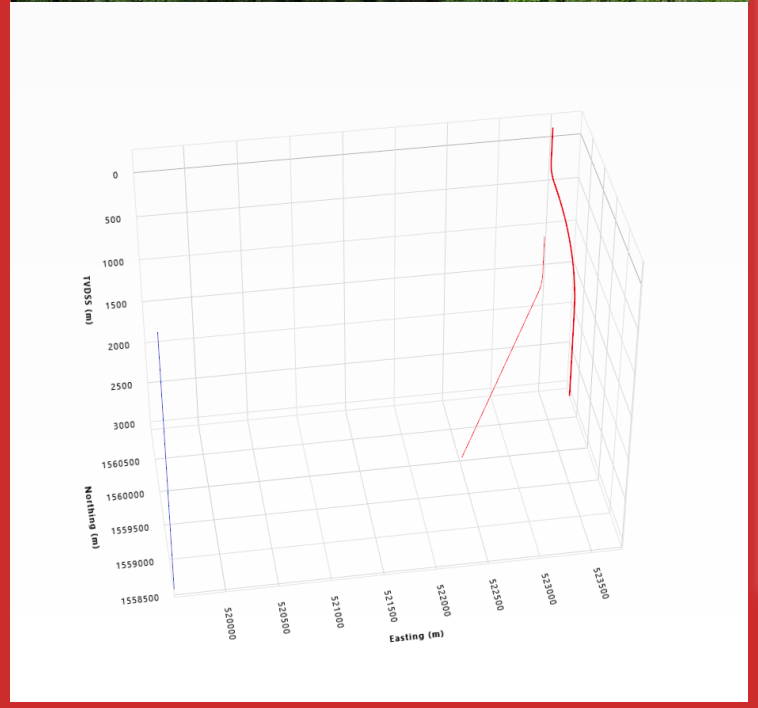
High Enthalpy

Mak-Ban Steam Field – Philipines



Project Level — **Site** Level — **Well** Level

Reservoir Dependency	Asset Purpose	Location Sensitivity	Rig Capacity	Design	Construction	Drilling Complexity	Well Control
Reservoir Dependent	Heat Production	**Rural**	Superlight	Re-Entry	**Circulating Temp**	**Predominant UCS**	Liquid
Reservoir Independent	**Power Production**	Industrial	**Light**	**Function**	**Low**	Low	**Two-Phase**
	Mineral Extraction	Urban	Medium	**Production**	Medium	**Medium**	**Vapour**
		Offshore	Heavy	**Well Geometry**	High	High	
		Residential	Superheavy	**9-7/8"**	**Pressure Regime**	Very High	Hydrocarbons
		Sensitive		**4 sections**	**Sub-Hydrostatic**	**Interbedded**	**Toxic Gases**
				3,200 m	Hydrostatic	**DDI**	Supercritical
				Design Parameters	Over Pressured	**Low - 4.61**	
				327 °C	**UBO & MPD**	Medium	
				1,285 psi		High	
				Stimulation		Very High	
				Scaling		Multilateral	
				Corrosion		Interception	

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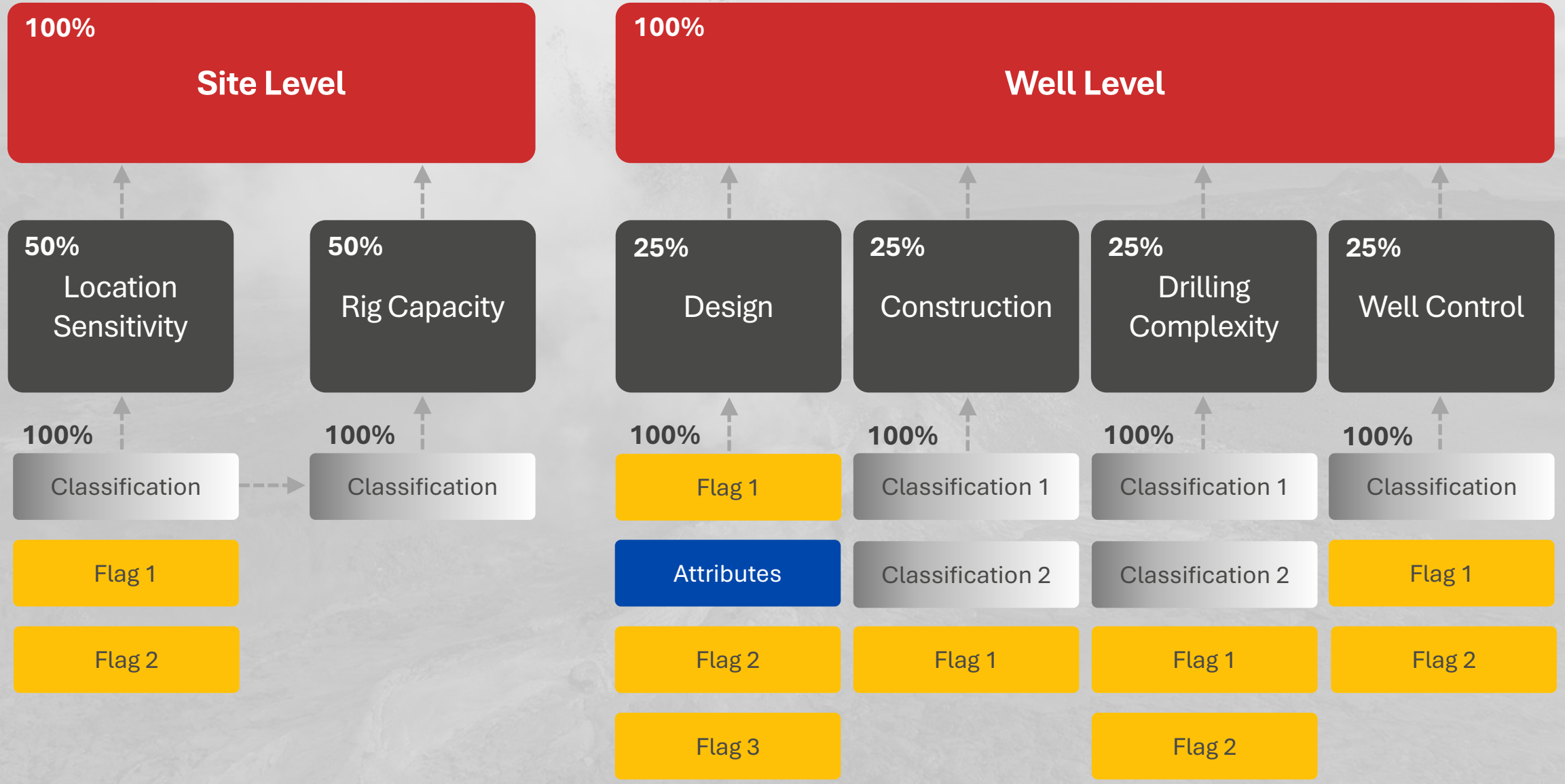
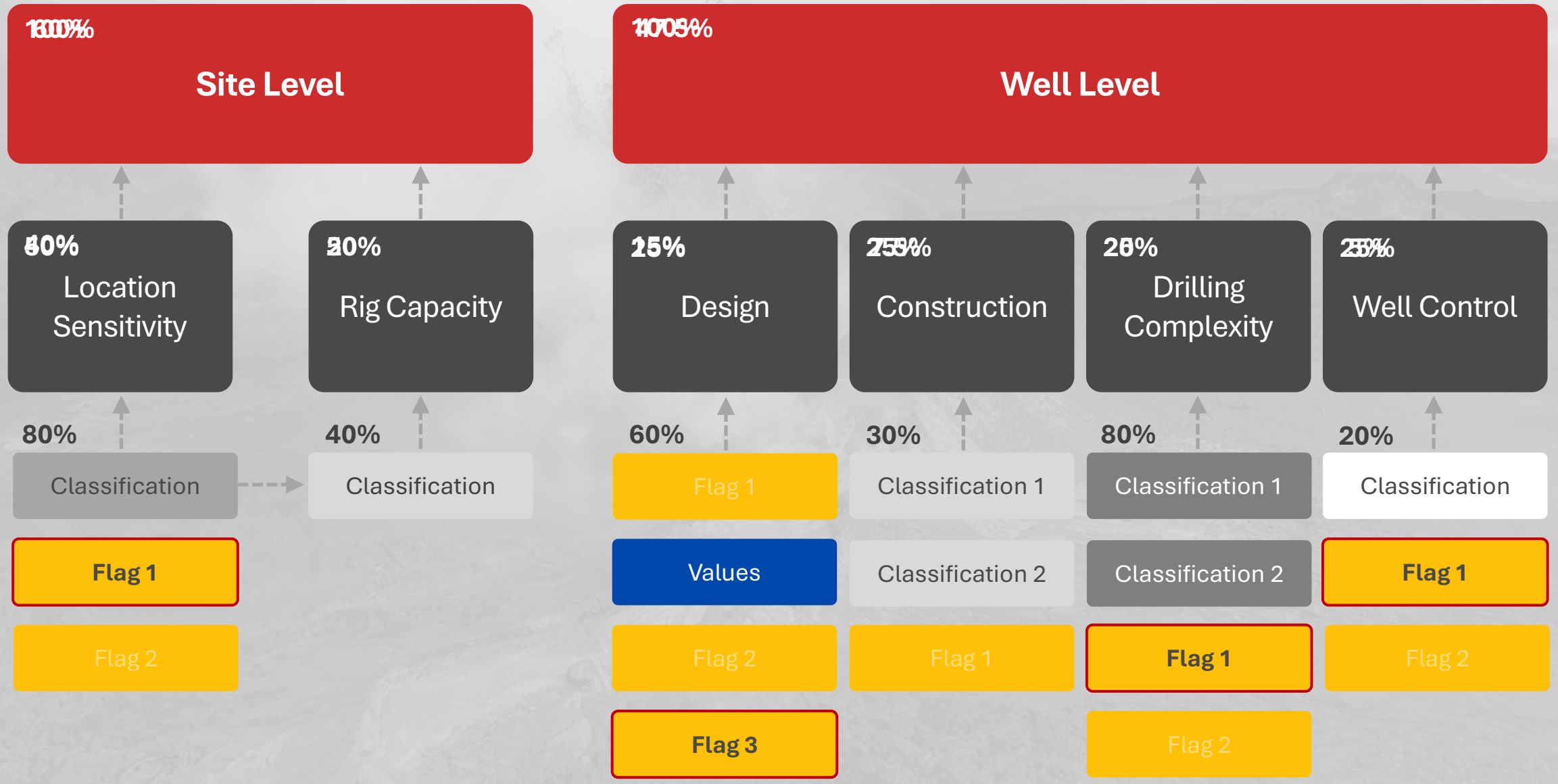
IADC Geothermal Well Complexity Index

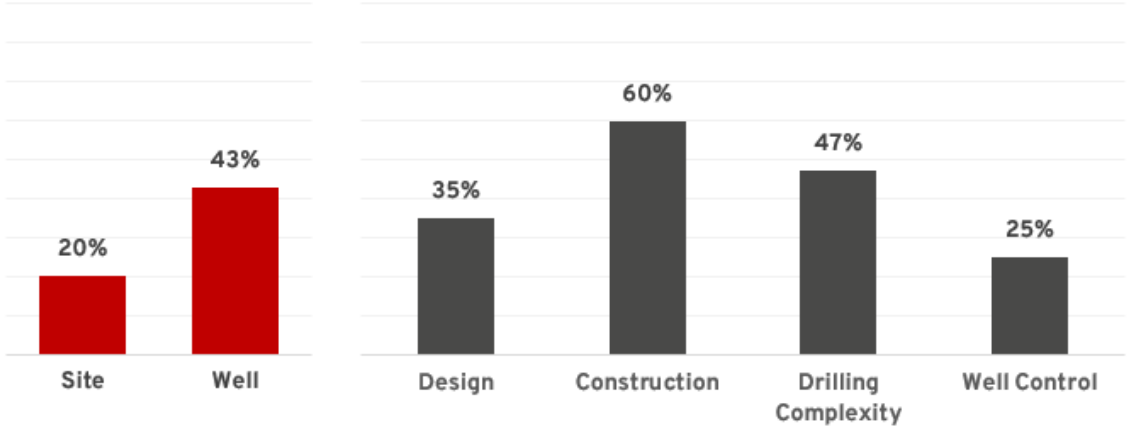


IADC Geothermal Well Complexity Index

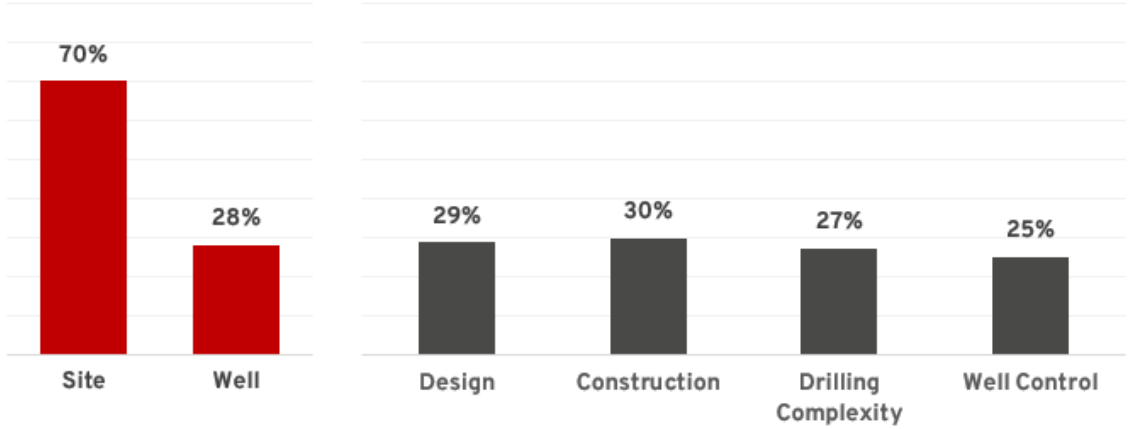


IADC Geothermal Well Complexity Index

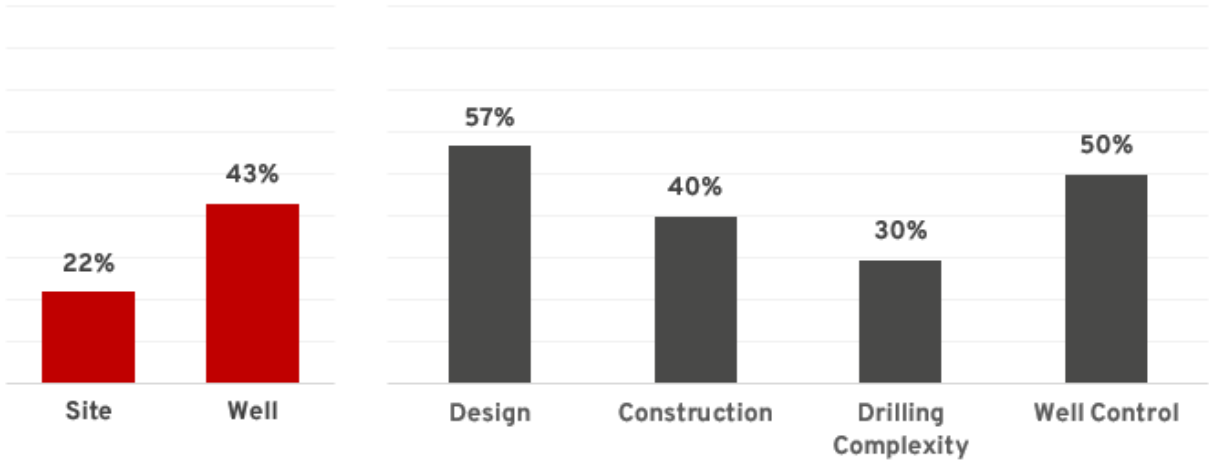
Enhanced Geothermal System Utah – United States



Low Enthalpy Vienna – Austria



High Enthalpy Mak-Ban Steam Field – Philipines



Note: DRAFT visuals. Final representation will be published with part 2 of the IADC Geothermal Well Classification.

CONCLUSION

1. Bridge the communication gap between drilling and non-drilling professionals
2. The Classification serves as the foundation of the IADC Geothermal Well Guideline
3. Visually represent the complexities and unique challenges of geothermal wells
   IADC Geothermal Well Complexity Index
4. Identify supply chain gaps to highlight available markets and drive innovation

THANK YOU

FOR YOUR ATTENTION

IADC™

GEOTHERMAL COMMITTEE