

Hatfield-3303: Monitoring effectiveness of steam assisted gravity drainage (SAGD) operations

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Challenge

Challenge ID:	HCP-3303	Originator:	Onshore: Hatfield
Title:	Monitoring effectiveness of steam assisted gravity drainage (SAGD) operations.		
Theme:	ON 3.3: Subsidence monitoring - Reservoir management		
Consortium Lead:	C-CORE	Interviewed Company:	C-CORE
Geography:	ON.REG.03 - Canada		
Challenge Description			
What is not possible / not adequately addressed at present?			
Need to identify effectiveness of steam chamber operations (e.g. with long linear horizontal drilling activity at depths of 100 - 700m). Track / monitor the distribution of injected steam based on reservoir model, surface thermal profile, and ground movement. Determine if the expected volume of bitumen produced based on water use.			
What effect does this challenge have on operations?			
Optimization could lead to increased oil production, reduced costs of steam production; and reduces waste-water. Goal is reduction of steam-to-oil ratio.			
Thematic information requirements:	Surface motion (horizontal and vertical)		
What do you currently do to address this challenge?			
How is this challenge conventionally addressed?			
Limited InSAR. Reservoir models. Drill/well logs.			
What kind of solutions do you envisage could address this challenge?			
High-resolution thermal maps. Improved InSAR capability in vegetated environments.			
What is your view on the capability of technology to meet this need?			
Are you currently using EO tech? If not, why not?			
Resolution is too low at the moment - need thermal imaging with resolution of several metres.			
Challenge Classification			
Impact on Lifecycle (0=none, 4=high):		Climate / Topography / Urgency:	
Pre-license:	1	Climate class:	Generic climate
Exploration:	2	Topographic class:	Not specific
Development:	2	Seasonal variations:	Any season
Production:	4	Impact area:	Cost reduction, Increased production
Decommissioning:	3	Technology urgency:	1 - Mid-Term (5-10 years)
Challenge Information Requirements			
Update frequency:	Daily		
Data currently used:	LiDAR Airphotos High resolution imagery InSAR		

Spatial resolution:	Basin
Thematic accuracy:	Not specific
Required formats:	Not Specific
Timeliness (Vintage):	Within a week
Geographic extents:	License
Existing standards:	None

Relevant products

Content by label

There is no content with the specified labels