

OTM-020: Tracking groundwater tables

Tracking groundwater tables

Challenge

	Challenge ID	OTM:020				
1	Title	Tracking groundwater tables				
2	Theme ID	ON 3.1: Subsidence monitoring - Land motion relating to fault lines or other causes				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	PetroSA, Exxon				
General description		Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	Operations which use large quantities of water (EOR, SAGD, Fracking etc...) often draw water from water tables in the vicinity of reservoir. In water-scarce regions, the ability to track aquifer behaviour can give valuable information to making the most of water resources and scheduling activity for the right times of the year.				
6	Thematic information requirements	1. Obtain detailed topographic information, 3. Obtain detailed vegetation information, 13. Monitor ground movement,				
7	Nature of the challenge - What effect does this challenge have on operations?	Good management can maximise benefits derived from water resources, reduce impact on the environment, local population and agriculture. Cost benefits might also be realised by more efficient use and extraction of water.				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	If any, tilt meters, underground measurements of water table height				
9	What kind of solution do you envisage could address this challenge?					
10	What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?					
Challenge classification						
11	Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
	Score from impact quantification [1]	0	2	2	2	0
12	Climate classification	NOT CLIMATE SPECIFIC				
13	Geographic context/restrictions	Generic onshore (Unspecified)				
14	Topographic classification / Offshore classification	Generic onshore (Unspecified)				
15	Seasonal variations	Any season				
16	Impact Area	Operational cost reduction (through managing water cut in produced oil) and environmental - to track ground water for surface uses				
17	Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
Information requirements						
18	Update frequency	Monthly - annually				
19	Data Currently used					
20	Spatial resolution					
21	Thematic accuracy					
22	Example formats	GIS Shape file				
23	Timeliness	Within a month				
24	Geographic Extent	Development area only				
25	Existing standards	No industry standards. TRE have their own internal INSAR standards				

[1] Impact quantification scores: 4 – Critical/ enabling; 3 – Significant/ competitive advantage; 2 – Important but non-essential; 1 – Nice to have; 0 – No impact, need satisfied with existing technology

Relevant product

Content by label

There is no content with the specified labels