OTM-002: Tracking fluid migration in the subsurface

Tracking fluid migration in the subsurface

Challenge

	Challenge ID	OTM:002				
1	Title	Tracking fluid migration in the subsurface				
2	Theme ID	ON 3.3: Subsidence monitoring - Reservoir management				
3	Originator of Challenge	Onshore: OTM				
4	Challenge Reviewer / initiator	PEMEX, Statoil, Exxon				
	General description	Overview of Challenge				
5	What is the nature of the challenge? (What is not adequately addressed at present?)	It is often challenging to track injected fluids such as those used for EOR/ IOR. Data that can give information to identify where fluid migration has gone to can be very valuable.				
6	Thematic information requirements	1. Obtain detailed topographic information, 13. Monitor ground movement,				
7	Nature of the challenge - What effect does this challenge have on operations?	Costs related to the loss of injection fluids in the reservoir can be large.				
8	What do you currently do to address this challenge?/ How is this challenge conventionally addressed?	subsurface sensors, including acoustic, electrical and gravity sensors can be used				
9	What kind of solution do you envisage could address this challenge?	Ground movement satellite imagery could indicate sub-surface pressure build up due to injected fluid migration from observed surface movement				
10	What is your view on the capability of technology to meet this need? – are you currently using EO tech? If not, why not?	EO could be a useful complimentary technology				
	Challenge classification					
11	Lifecycle stage	Pre license	Exp.	Dev.	Prod.	Decom.
	Score from impact quantification [1]	0	0	1	3	1
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				
17	Technology Urgency (How quickly does the user need the solution)	Immediately (0-2 years)				
	Information requirements					
18	Update frequency	daily / weekly /annually (application dependent)				
19	Data Currently used	Downhole tools				
20	Spatial resolution	Downhole tools				
21	Thematic accuracy					
22	Example formats	GIS Shape file				
23	Timeliness	Within a month				
24	Geographic Extent	Reservoir footprint				
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 Products

Content by label

There is no content with the specified labels