

Santos

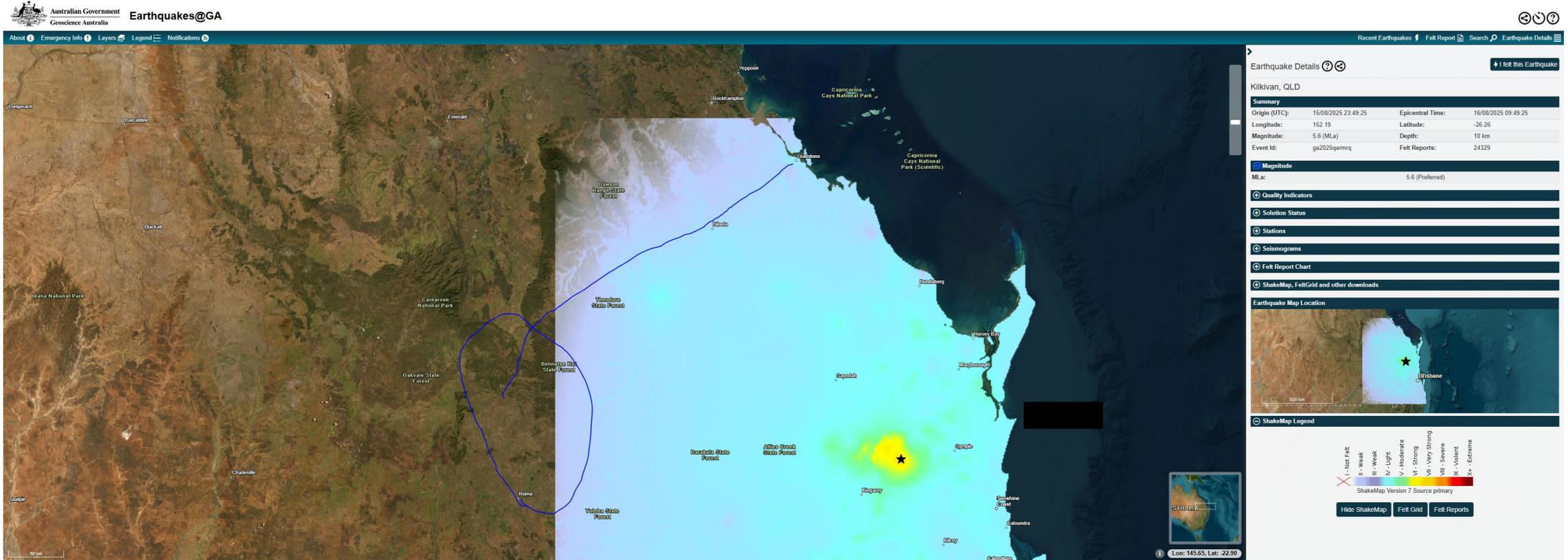
GEOHAZARDS MANAGEMENT ON GLNG PIPELINES

Earthquakes approach



Background

QLD Earthquake, 16/8/25, 5.6 Richter scale ~250 km from our nearest assets



GLNG Pipelines IMPs approach

ROW Patrolling	Aerial Patrol: 4 Monthly Ground Patrol: R1 - 12 Monthly T1 - Monthly	Immediately following significant weather event and following any earthquake with a seismic magnitude of 5 in Richter scale.
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- Consulted AS2885 series of standard
- Consulted peers at the 2025 APGA annual convention

AS2885 approach

AS2885.1 - Appendix K–Land Stability and Seismic Design

- PRCI “Pipeline seismic design and Assessment Guidelines PR-268-134501, 2017 and the MCEER document

AS2885.3 – 7.4 Corridor Surveillance

- Surveillance of the entire pipeline corridor shall be undertaken at least annually.
- Variations to surface conditions such as erosion , earth movement or seismic activity
- Natural events such as flood, earthquake and ground slips may reduce protective depth and may lead to strain events which may impact pipeline integrity

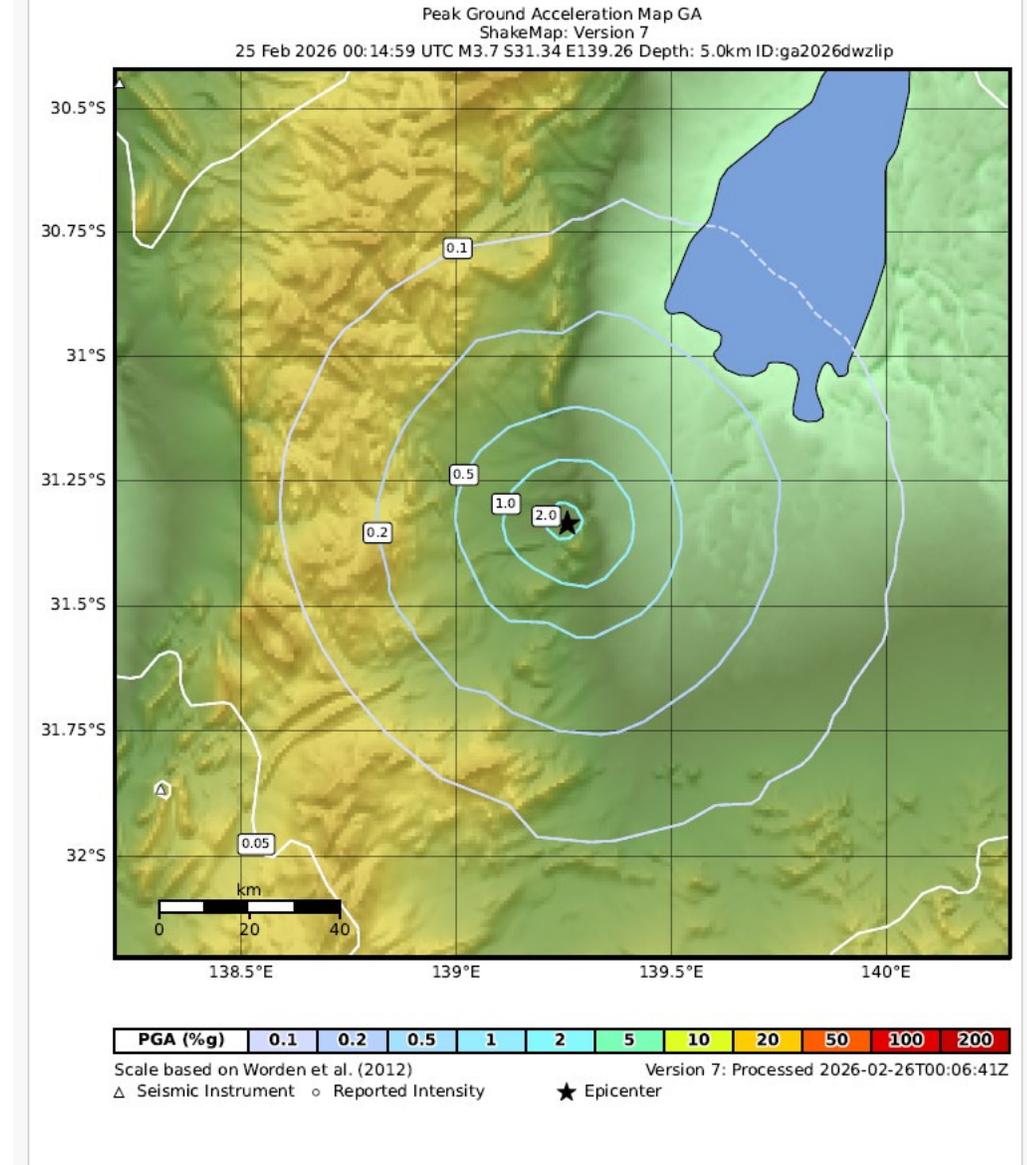


Improvement opportunities

- Checked with Liz Brierly and Rosen global Geohazard specialists
- 0.1g (10% of gravitational acceleration) contour - Peak Ground acceleration (PGA)
- <https://earthquakes.ga.gov.au/#>



- Earthquakes at a magnitude of 3.5MLa and greater get a ShameMap

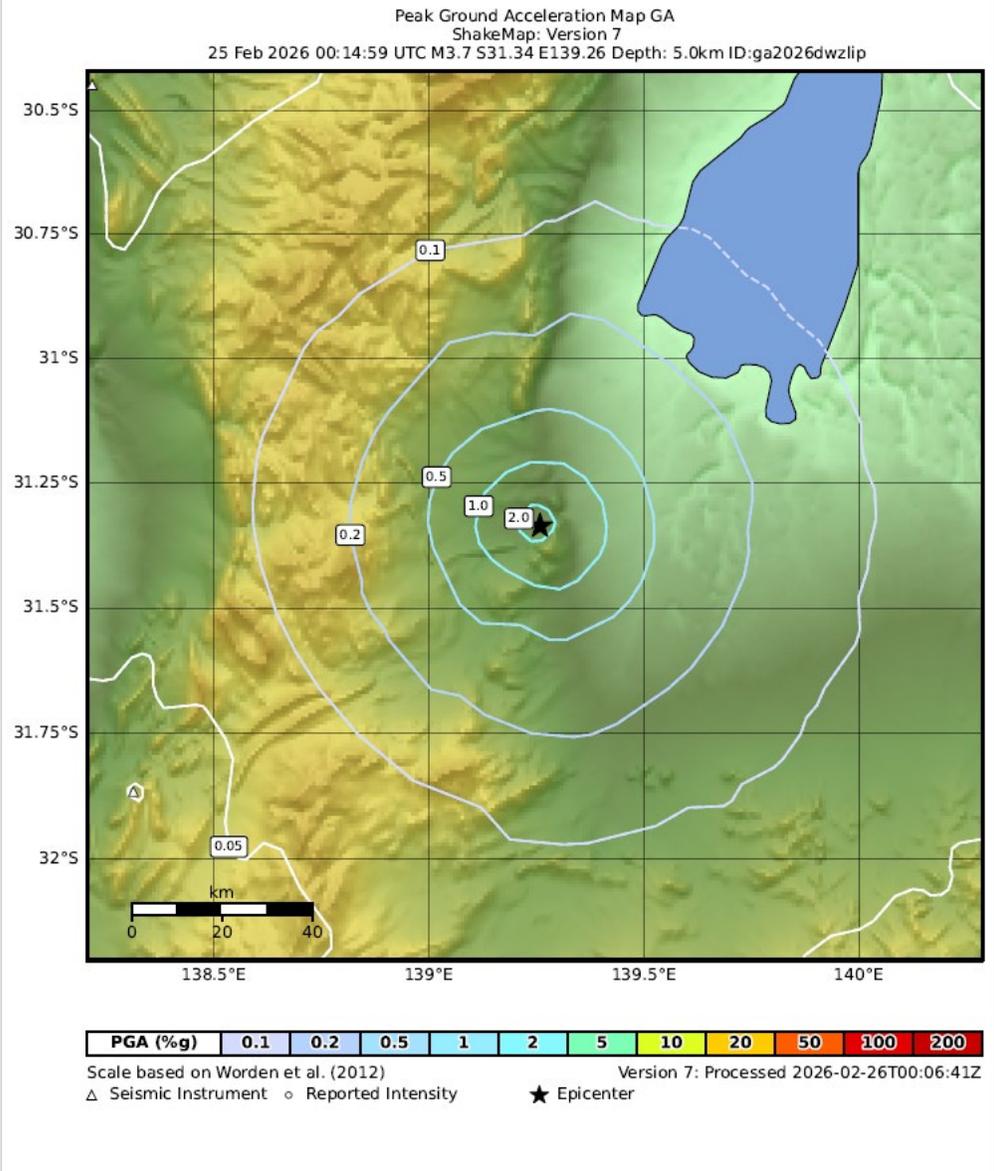


Outcome

Pipeline IMPs improvement in the next review update:

ROW Patrolling	Aerial Patrol: 4 Monthly Ground Patrol: R1 - 12 Monthly T1 - Monthly	Immediately following significant weather event and following any earthquake with a seismic magnitude of 3.5 or higher in Richter scale and for the areas along the pipeline when PGA (Peak Ground Acceleration) is 0.1g (10%) or greater. A ShakeMap with the details of PGA can be downloaded from https://earthquakes.ga.gov.au/#
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Can AS2885.3 have a clearer requirements / guideline when it comes to earthquake / ground movement management?



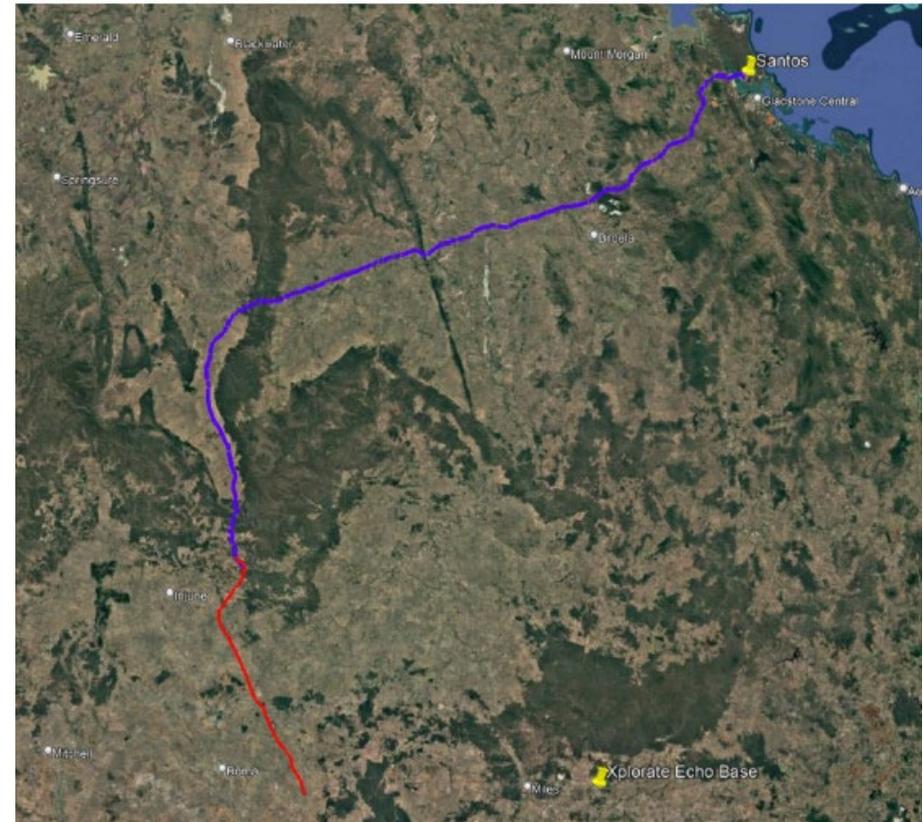
ROW patrol update

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- Xplorate (Swiss Drones)



- Live EO (Satellite imaging)



ROW patrol update

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- Xplorate

Quarterly reporting for
~ 550km patrolling

LiDAR Point Cloud + RGB
Photogrammetry + 360
Video



- Live EO (Satellite imaging)

Quarterly reporting for
~ 550km patrolling

Optical satellite imagery
with a horizontal resolution
of 0.3 x 0.3m

X



Live EO (Satellite imaging)

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