

Morning Report PNR1z				
<b>Management System:</b>		HSE	<b>File Name:</b>	026_PNR1z_02.11.18_RMR
<b>Approver:</b>		Senior Geoscientist	<b>Version No:</b>	1
<b>Reviewer:</b>		Frac Manager	<b>Date of Issue:</b>	3 <sup>rd</sup> November 2018
<b>Author:</b>		Senior Frac Engineer	<b>Proposed date of Review:</b>	n/a
Version	Section	Revision Information	Date	Reviser
0.1	All	Draft Publication	03/11/2018	Senior Frac Engineer
<i>Documents are reviewed as per proposed review date, or sooner if a significant change to the operation has taken place, to ensure relevance to the systems and process that they define.</i>				

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## Summary

Overview of day's operations:

- Flowed back stages 30 and 31 (both open at the same time) – 8.61 m<sup>3</sup>
- Minifrac injected into Stage 38
- Flowback performed – none
- Minifrac injected into Stage 35
- Flowback performed – none
- Induced seismicity - none
- No red line boundary breached

## Injection Summary

### Stage 38

Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
<b>-2717.17 M MDRT</b>	<b>Slickwater Frac (14.3 m<sup>3</sup>)</b>	<b>Slickwater</b>	<b>B528 Friction Reducer, Slickwater Frac – 3.9 kg – 0.02 %</b>
<b>-2344.57 M TVDRT</b>			

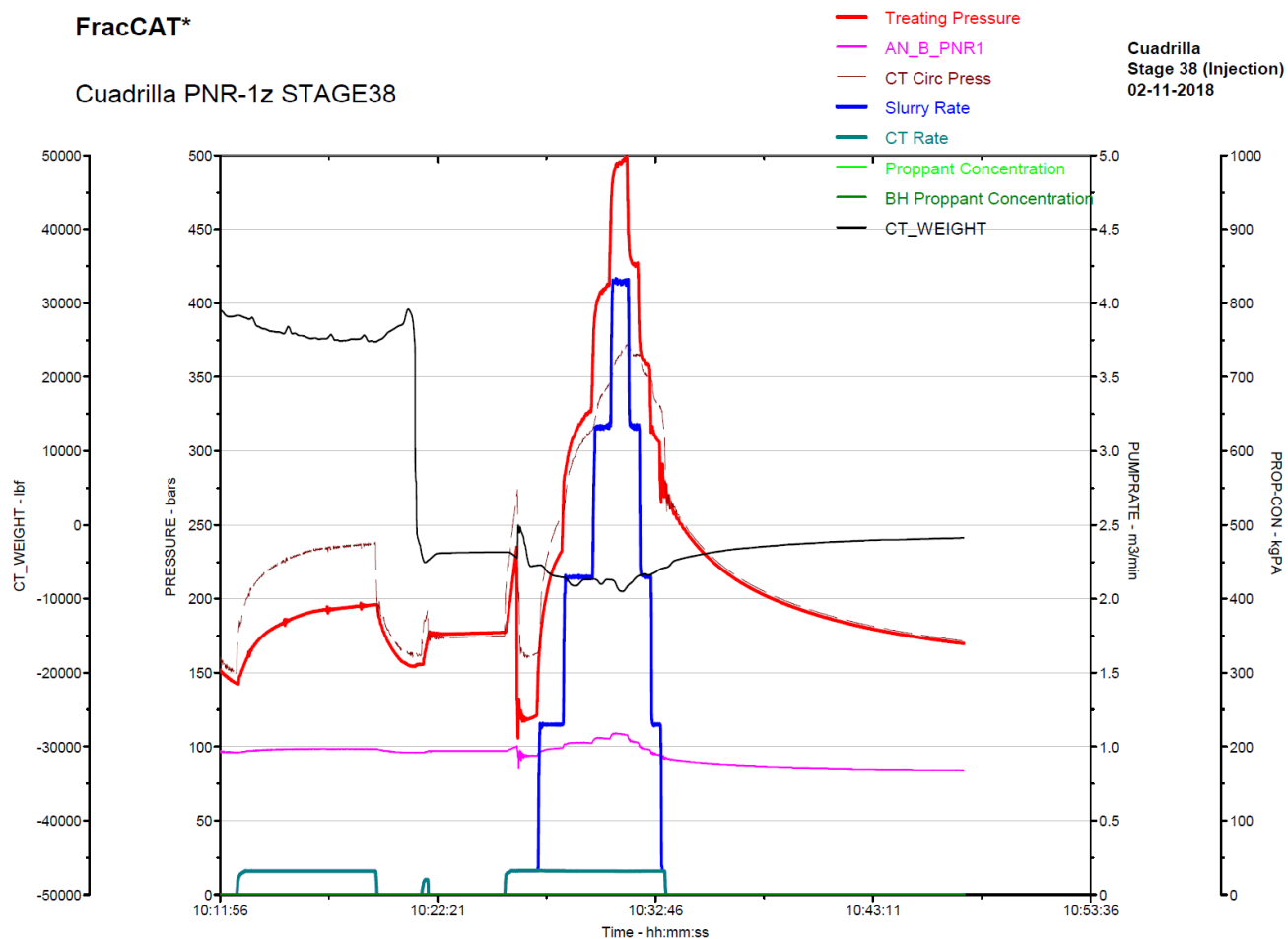
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## Injection Chart

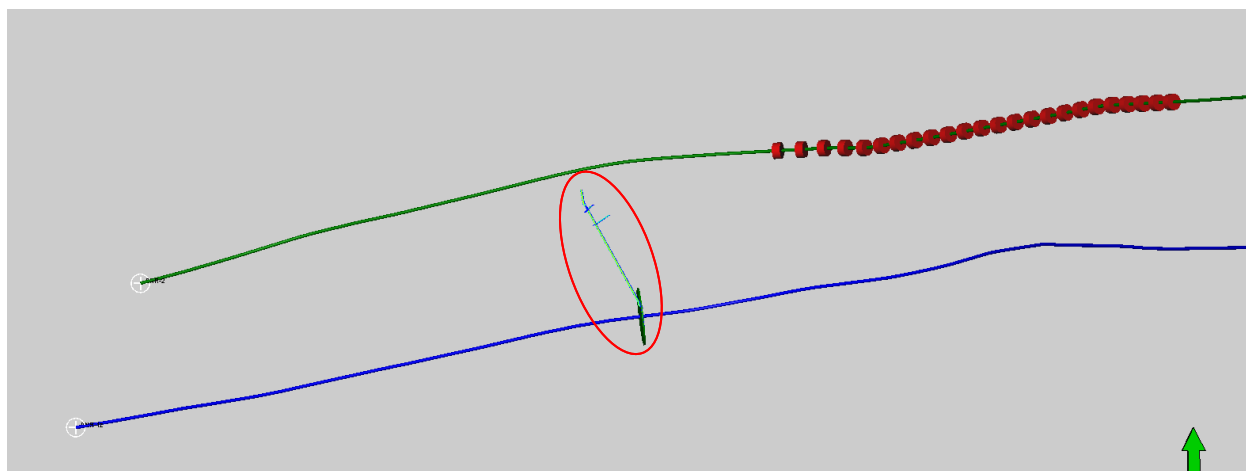
FracCAT\*

Cuadrilla PNR-1z STAGE38

Cuadrilla  
Stage 38 (Injection)  
02-11-2018

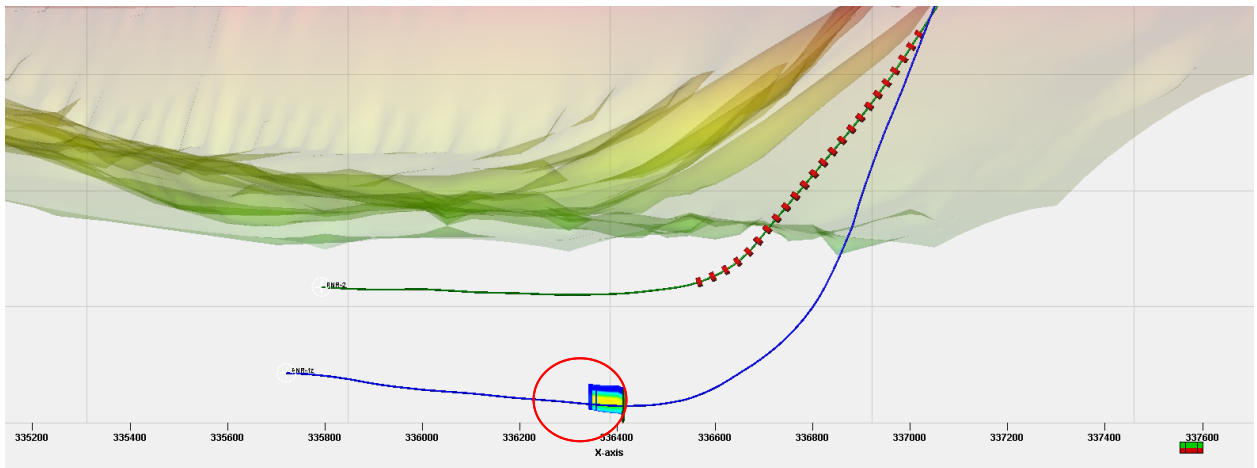


## Fracture Growth

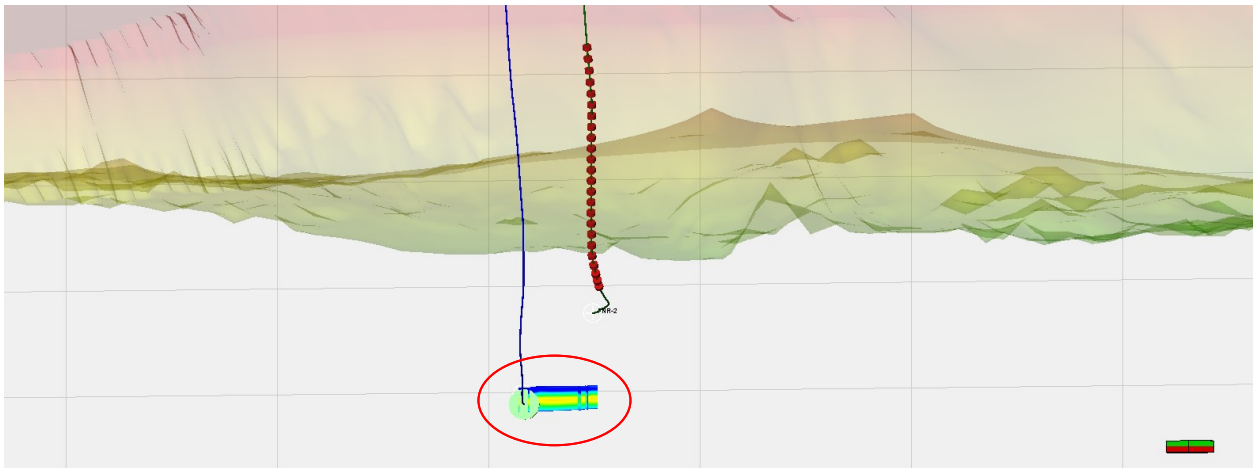


- Map View, scale north bar

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- X-section due north



- X-section due east

- Max hydraulic frac half length: 198.8 m
- Hydraulic frac height at well: 55.98 m

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## Injection Summary

### Stage 35

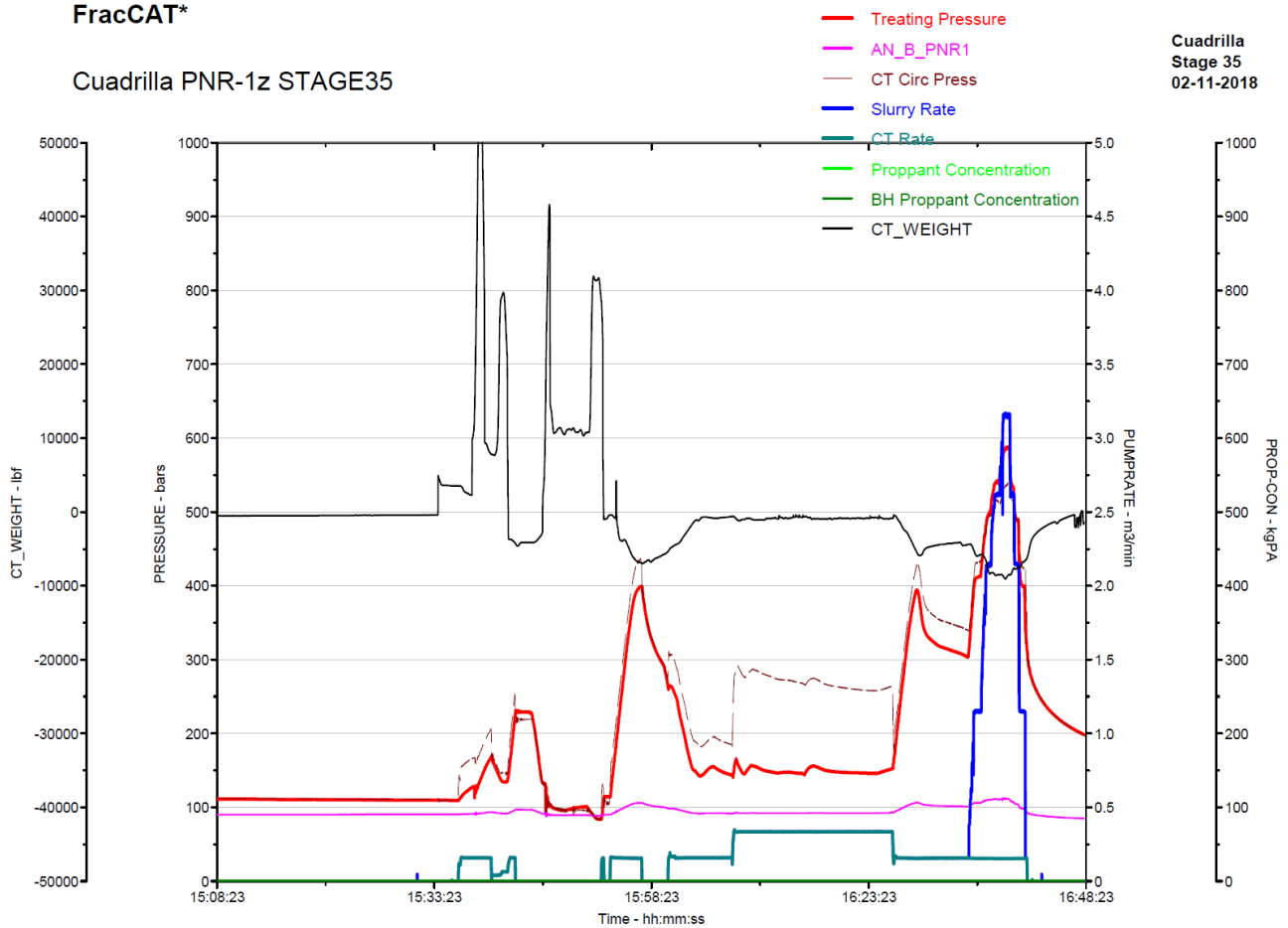
Injection Depth m (RT)	Volume (fluid m3, proppant tonne)	Fluid System	Additives (type, mass kg, %)
-2770.01 M MDRT	Slickwater Frac (14.25 m <sup>3</sup> ) Acid (0.75 m <sup>3</sup> )	Slickwater 10% HCl	B528 Friction Reducer, Slickwater Frac – 3.8 kg – 0.02 %
-2342.19 M TVDRT			

## Injection Chart

### FracCAT\*

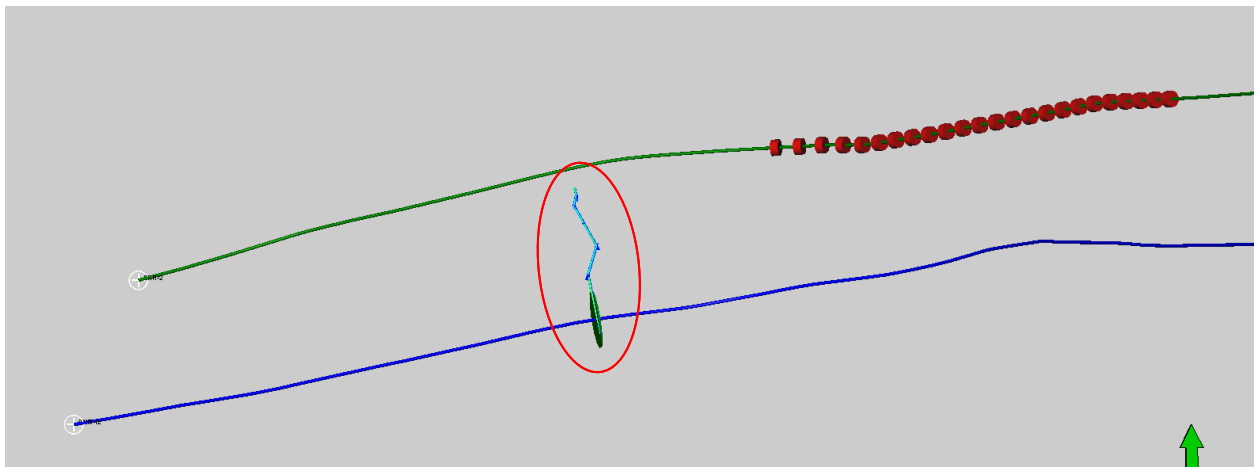
Cuadrilla PNR-1z STAGE35

Cuadrilla  
Stage 35  
02-11-2018

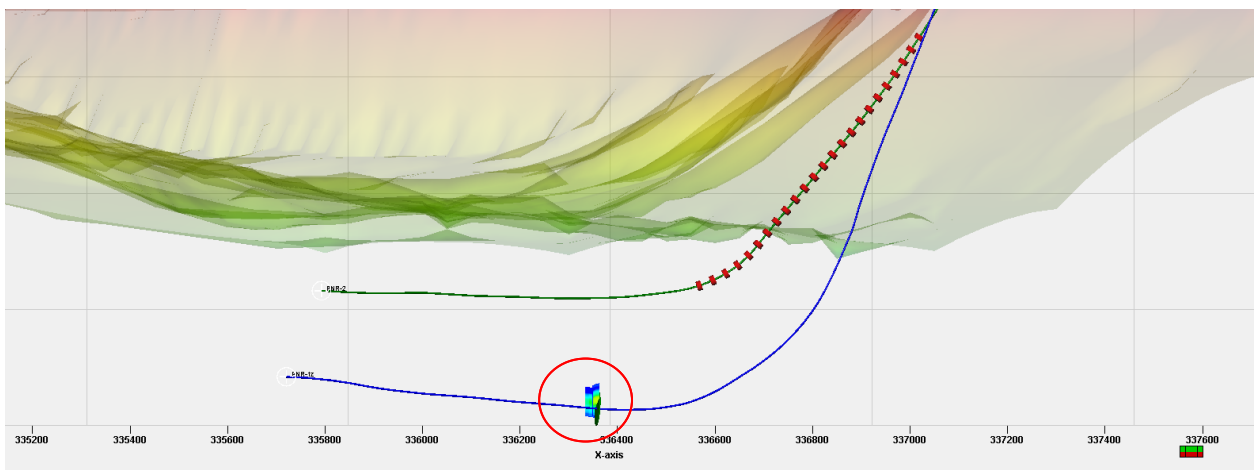


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## Fracture Growth

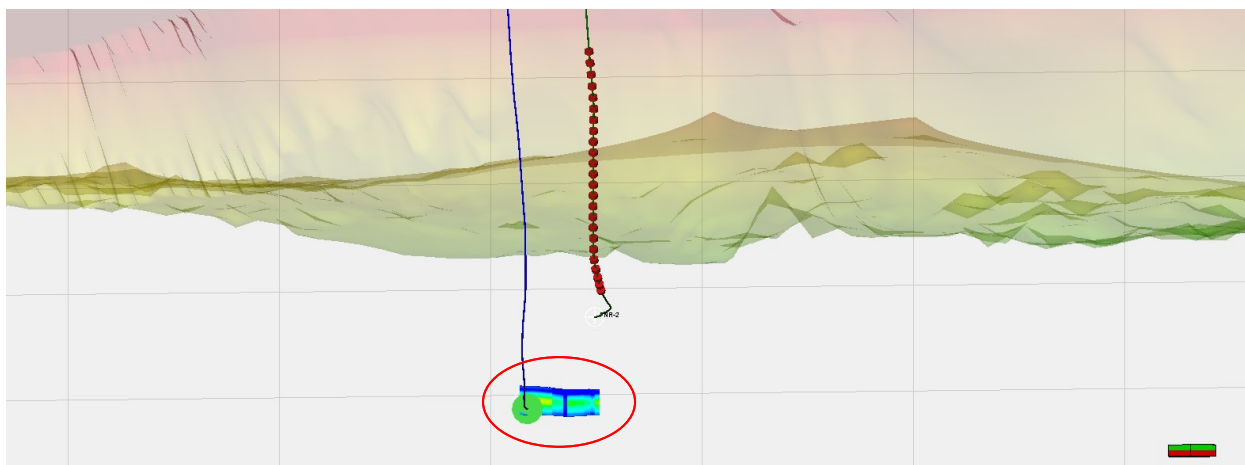


- Map View, scale north bar



- X-section due north

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- X-section due east

- Max hydraulic frac half length: 197.3 m
- Hydraulic frac height at well: 50.01 m

#### Well Integrity Status

- No change

#### Induced Seismicity of Note

- None

#### Update to Stress Magnitude

- No update to stress magnitude as closure was not observed
- $S_{Hmin} = 0.0148 \text{ MPa/m}$

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