

## Morning Report PNR1z

| <b>Management System:</b>   | HSE                  | <b>File Name:</b>               | 068_PNR1z_14.12.18_RMR         |                      |
|---|----------------------|---------------------------------|--------------------------------|----------------------|
| <b>Approver:</b>  | Senior Geoscientist  | <b>Version No:</b>              | 2                              |                      |
| <b>Reviewer:</b>  | Frac Manager         | <b>Date of Issue:</b>           | 15 <sup>th</sup> December 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               | 15/12/2018                     | 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> |                      |                                 |                                |                      |

## Summary

Overview of day's operations (midnight to midnight):

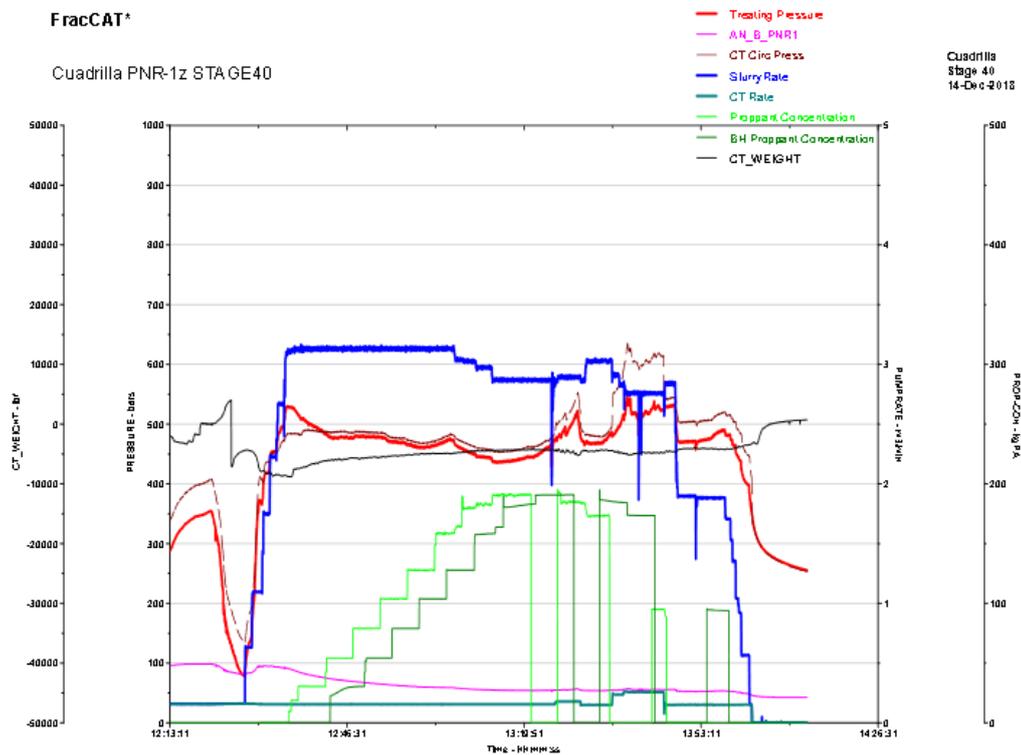
- Opened and proppant fractured sleeve 40. Flowed back well.
- Immediate post-frac flowback performed
- Induced seismicity: yes (see below)
- No red line boundary breached

## Injection Summary

### Stage 40

| Injection Depth m (RT) | Volume (fluid m <sup>3</sup> , proppant tonne)                              | Fluid System      | Additives (type, mass kg, %)                               |
|------------------------|---|-------------------|--|
| -2681.9 m MDRT         | Slickwater (248.9 m <sup>3</sup> & 19.7 T)<br>10% HCl (1.5 m <sup>3</sup> ) | Slickwater<br>HCl | <b>B528 Friction Reducer, Slickwater – 59.0 kg – 0.02%</b> |
| -2344.0 m TVDRT        |   |                   |  |

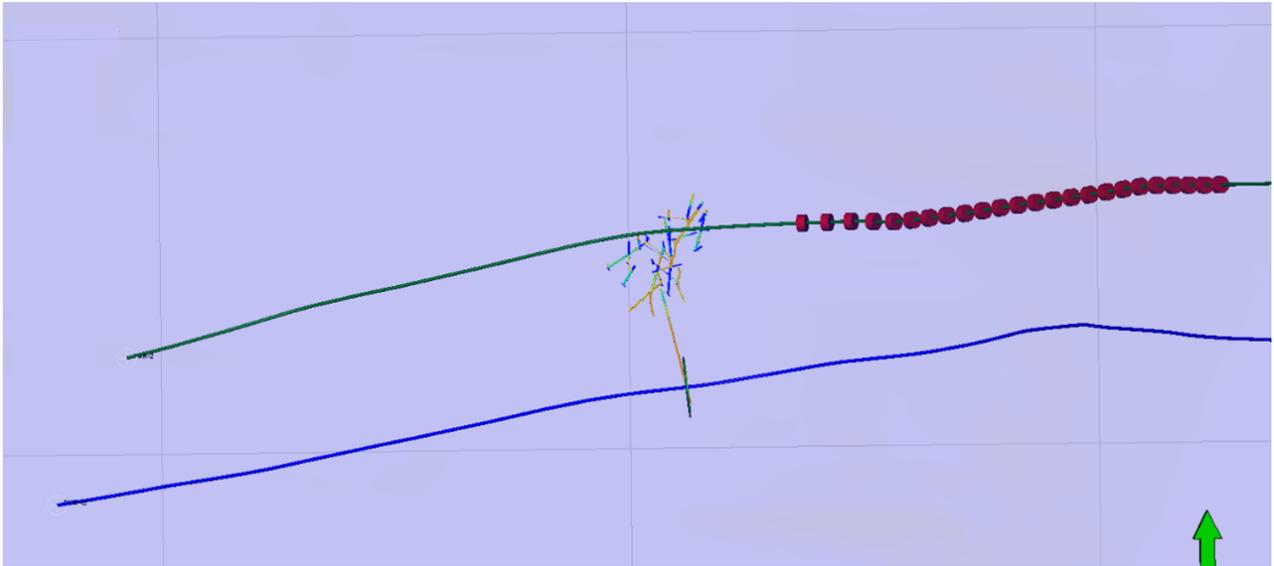
## Injection Chart



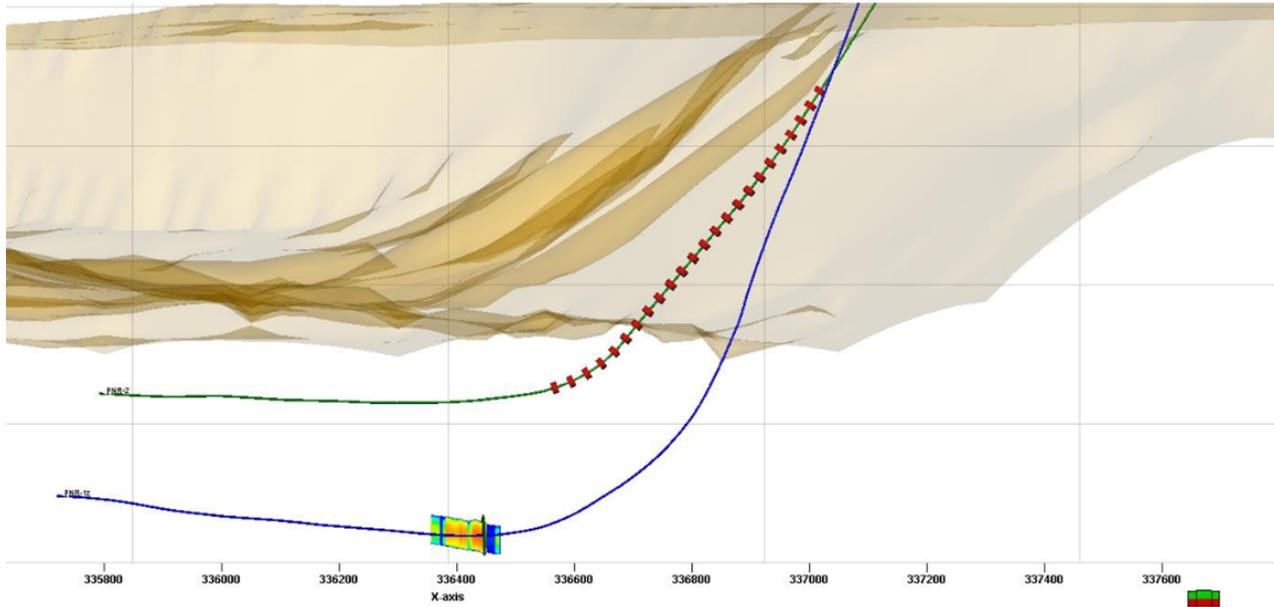
## Pumping Time:

1) 14/12/2018 12:27:17 - 14/12/2018 14:02:46

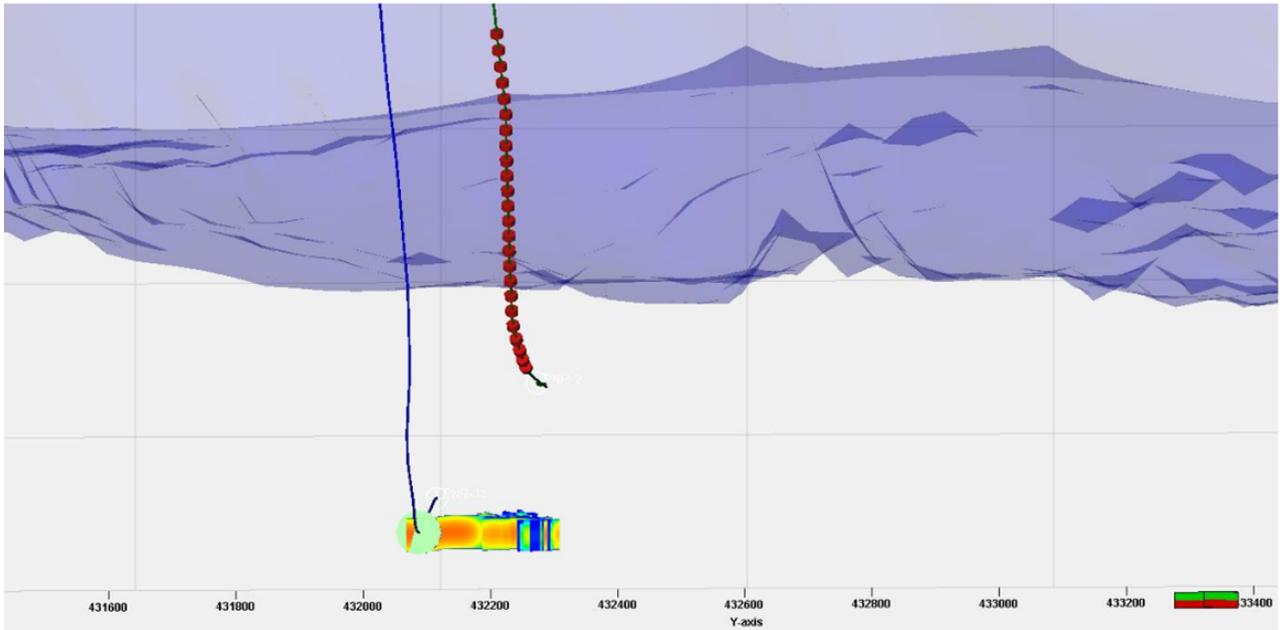
**Fracture Growth**



• Map View, scale north bar



• X-section due north



- X-section due east
- Max hydraulic frac half length: 116.9 m
- Hydraulic frac height at well: 53.9 m

#### Well Integrity Status

- No change

#### Seismicity of Note

- 14/12/2018 13:09:51 -  $M_L = 0.1$
- 14/12/2018 13:41:05 -  $M_L = 0.9$

#### Update to Stress Magnitude

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