



Regulatory Update - 2016

PAF seminar Sola Airport Hotel 19th October 2016

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- Well design PP&A planning 2015
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Well Design PP&A Planning 2015 – Some Observations

- Increased focus on verification of barriers, but room for improvement!
- Growing interest for formation as a barrier – ongoing qualification work
- Increased focus on documentation of well status including P&A and better storage of information (electronically)
- Norsok D-010 mainly used as standard for planning P&A, but several operators use internal requirement stricter than Norsok D-010
- Operators facing comprehensive PP&A establish separate teams for these operations
- Changes made to the well design to increase the quality of the cement
- Some operators are not planning for PP&A in new well design
- Room for improved experience transfer among the different operators
- Logging of barriers

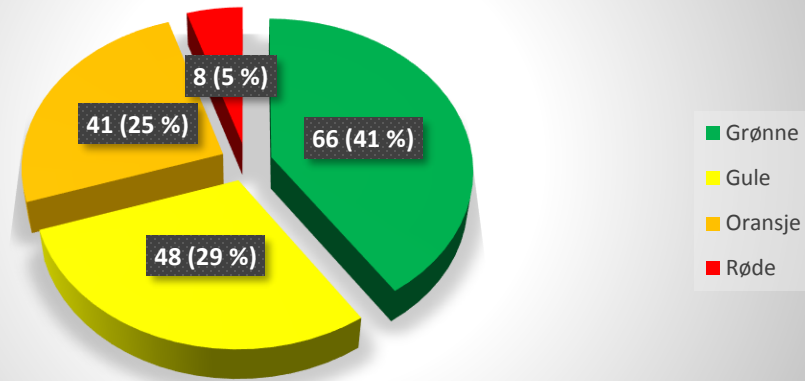
PP&A Audits 2016

- Two operators and three Fields chosen
- Focus area
 - Internal requirements
 - Subsurface evaluation
 - Strategy for PP&A
 - Risk evaluations
 - Verification activities
- Result in generally good

Temporarily abandoned wells

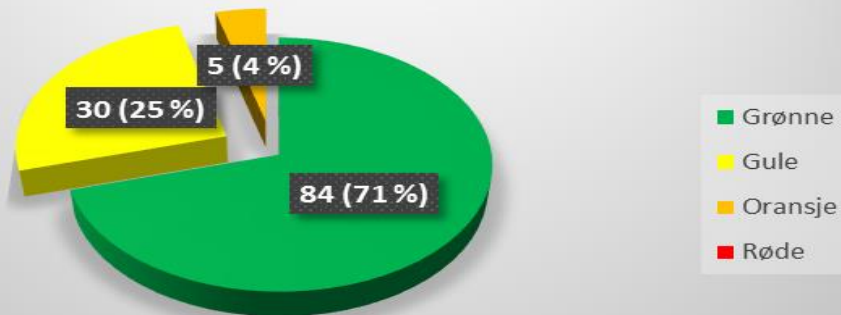
Status 2013

Statusen på plattform brønner, 2013



- Total: 163 platform wells
- 70% was classified as green or yellow

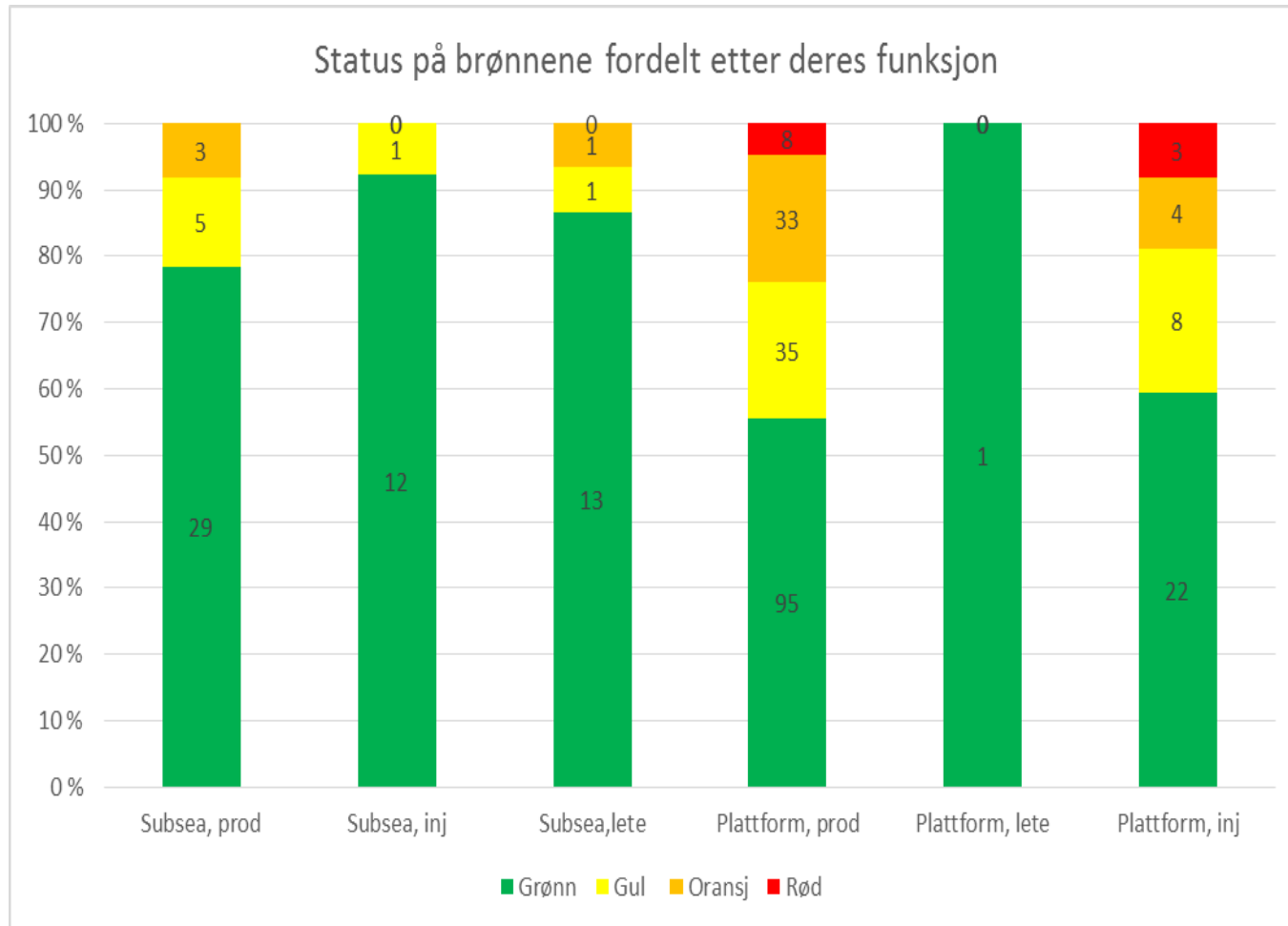
Statusen på subsea brønner, 2013



- Total: 119 subsea wells
- 96 % was classified as green or yellow
- No subsea wells classified as red

Category	Principle
Red	One barrier failure and the other is degraded/not verified, or leak to surface
Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

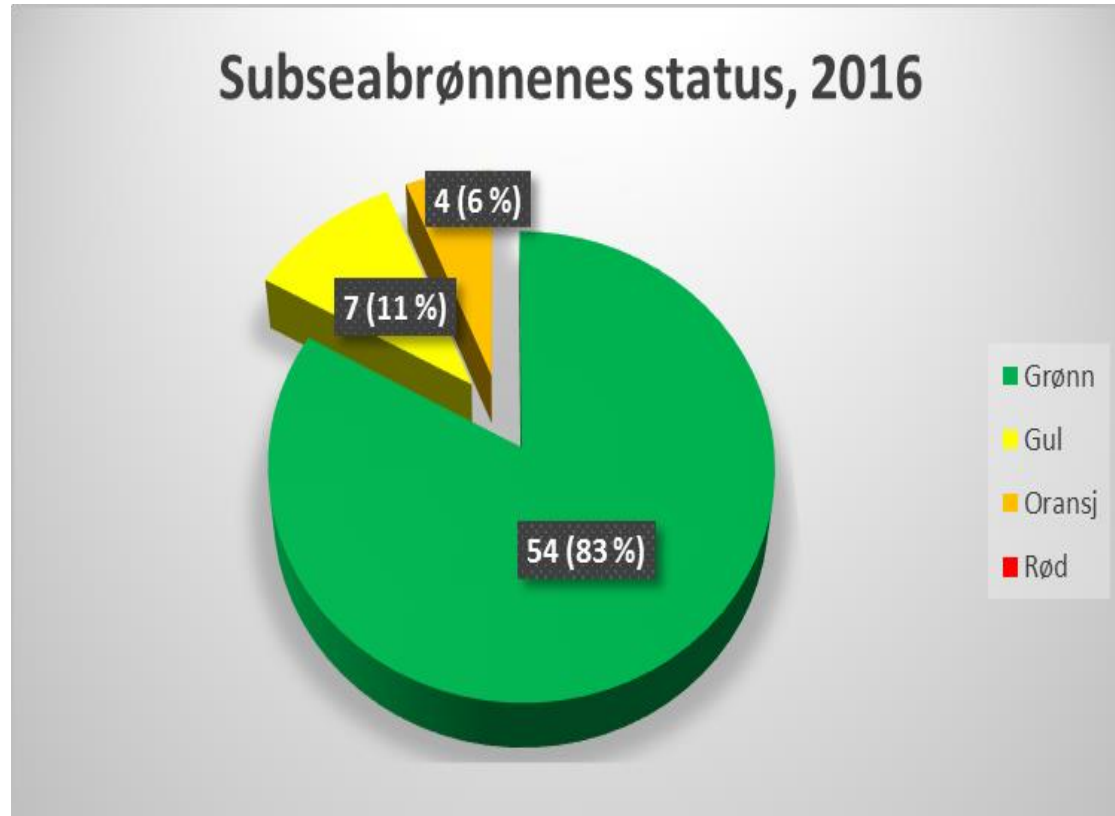
Status 2016 – all wells



Category	Principle
Red	One barrier failure and the other is degraded/not verified, or leak to surface
Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

➤ Total number: 274 wells

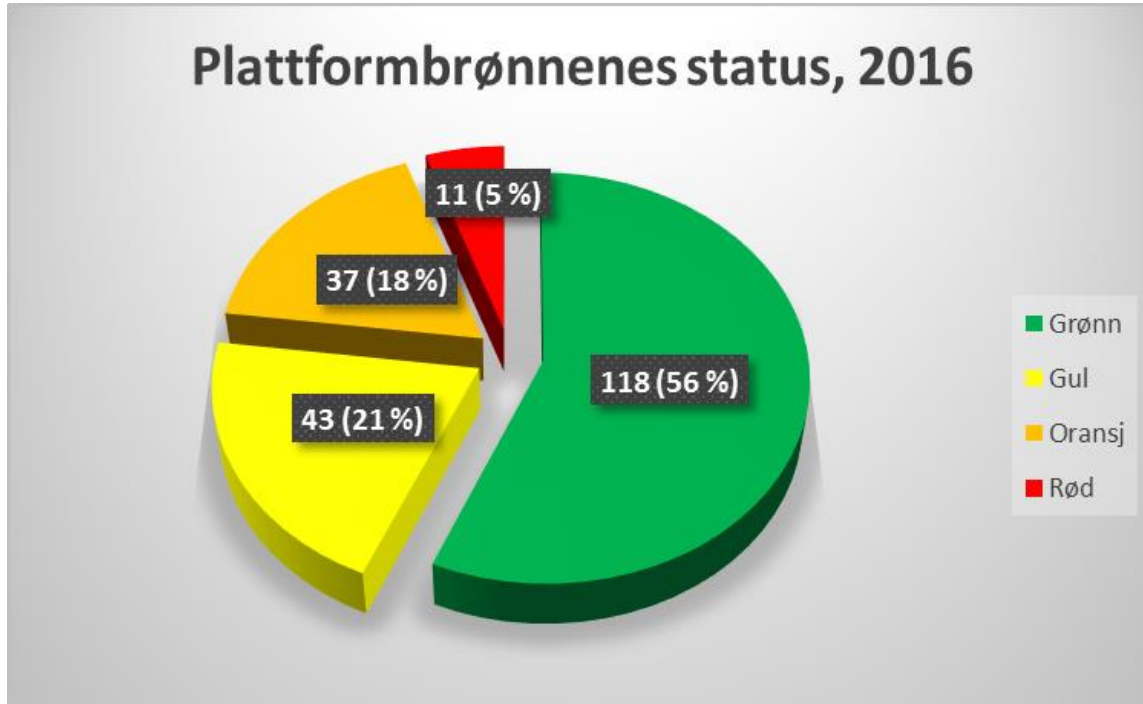
Status 2016 – subsea wells



Category	Principle
Red	One barrier failure and the other is degraded/not verified, or leak to surface
Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

- Total 65 subsea wells
- 61 wells are classified as green or yellow
- 4 wells are classified as orange
- No wells classified as red

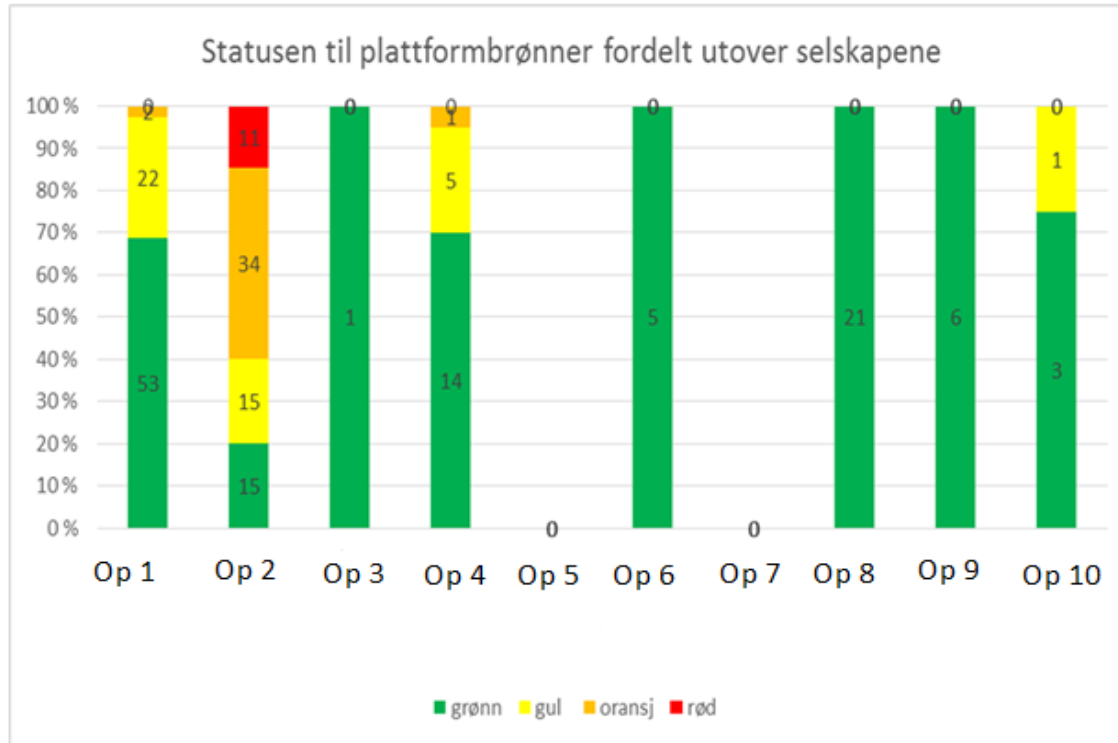
Status 2016 – all platform wells



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Red	One barrier failure and the other is degraded/not verified, or leak to surface
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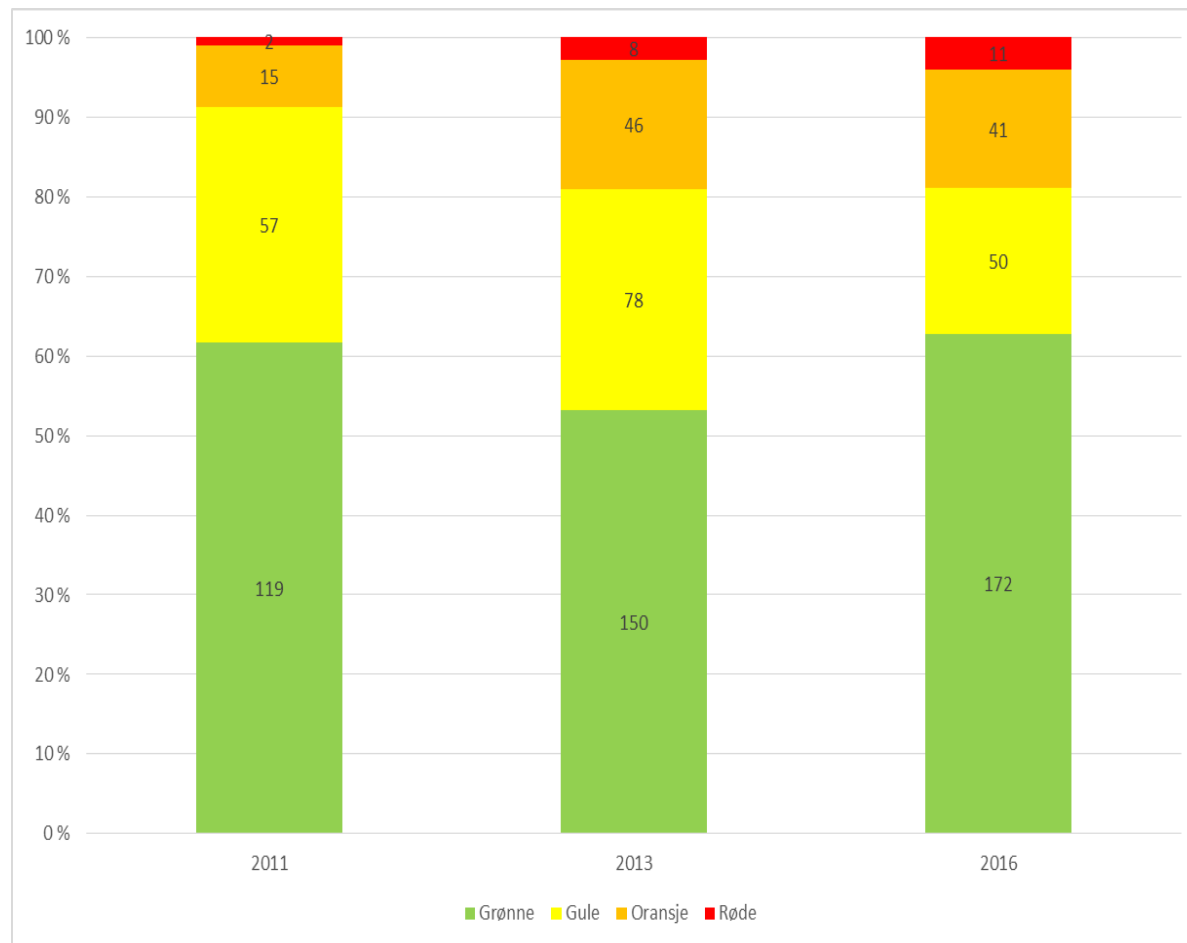
➤ Total 209 temporarily abandoned platform wells

Status 2016 – all platform wells



Category	Principle
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Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

Comparison of all temporarily abandoned wells 2011 - 2013 - 2016



Category	Principle
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Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue

- Number of wells 2011: 191
- Number of wells 2013: 282
- Number of wells 2016: 274
- reduction of yellow wells from 2013 to 2016.
- reduction of orange wells from 2013 to 2016
- Increase in the number of red wells from 2011 to 2016

PSA PP&A Advice

- Good planning
- Thorough Subsurface mapping and evaluation prior to P&A
- Verification of PP&A Solutions and final barriers
- Long term involvement of necessary resources
- Cooperation and Experience sharing



“Thank you for gently guiding me toward insight.”

Thank You

Questions?

