

# P&A Status and challenges

PAF Conference 2014

Sola Airport Hotel

Johnny Gundersen PSA

# Content of Presentation

- Challenges/actions needed
  - Existing wells
  - Drilling new wells
- Changes in regulations for P&A - 2014
- PSA survey of temporarily abandoned wells  
NCS 2013-2014

# Facts....



- Challenges and the causes of the problems related to P&A are well known
- These are common challenges for the whole industry
- The number of wells to be P&A'd is growing and some of the most challenging wells are still waiting for us
- The time to “solve” the challenges is decreasing
- Our total production is declining rapidly and some fields are ready for decommissioning
- The “old and experienced” people with the first hand information about the wells are retiring
- Experience and learning indicates higher costs and more time consuming operations as time goes by
- New cost reducing methods, materials and equipment are not adequately qualified and ready for use
- More focus, increased expectations and tougher environmental requirements from authorities and the public opinion
- Each company looking for their own solution or “sitting on the fence” waiting for someone else to solve the problem for them
- ***We all know about these challenges which will not disappear, but grow over time!***

# Main challenge

- **Industry co-operation**
  - Stop unnecessary discussions about the problems
  - Focus on the solutions
    - Act jointly to develop better solutions
    - Jointly qualification and testing



# Our expectations for existing wells

- Barrier Condition need to be **known and understood**
- **Cost effective materials**, methods and equipment need to be developed, **qualified** and used
- **Robust barriers** in order to fulfill regulatory requirements for containment
- Better **verification** of barriers placed when P&A'ing the well



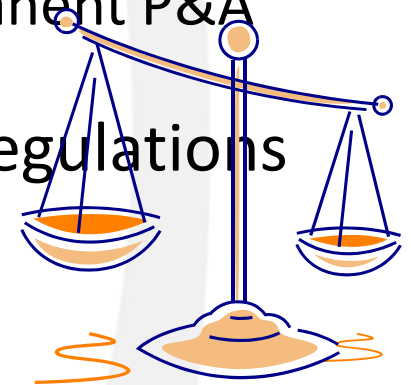
# Our expectations for “new wells”

- P&A planned for in **well design** - “Make it right the first time”
- “**Good oil field practice**” used for planning slurry design, mud removal and placement of barrier materials
- Necessary **verification of barriers** during drilling and completion of the wells
- **Necessary competence and experience** utilized to optimize job results
- Remedial cement jobs if necessary?
- “**Life cycle wells**”

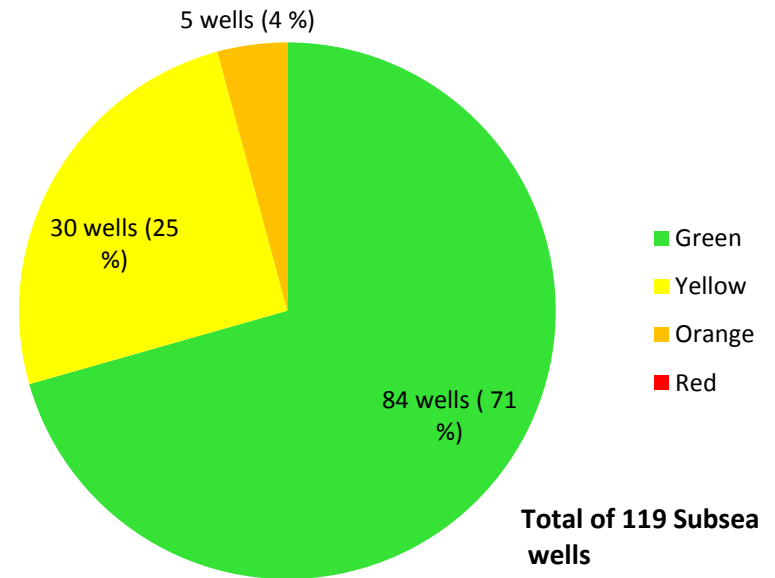
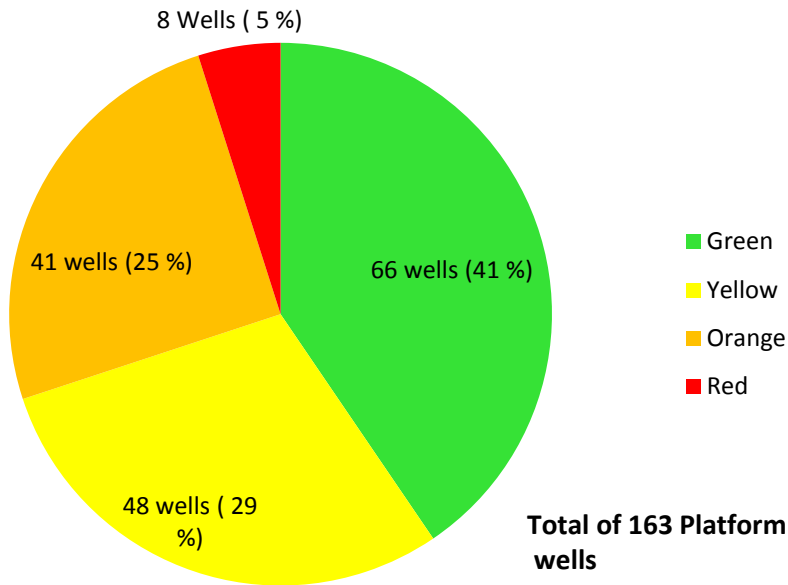


# Regulatory changes affecting P&A

- AF §88 Securing Wells
  - Exploration wells started after date of effect of this regulation shall not be temporarily abandoned **more than 2 years**
  - Appraisal wells shall not be temporarily abandoned for **more than 3 years** if the hydrocarbon filled zones are not permanently P&A'd
- Regulation affecting lifetime extension
  - Information to be received when applying for lifetime extension, e.g. well status and plans for permanent P&A (SF§ 26) (Suggestions)
- Norsok D-010 Revision 4 referenced in the regulations



# PSA survey -Temporarily abandoned wells 2014



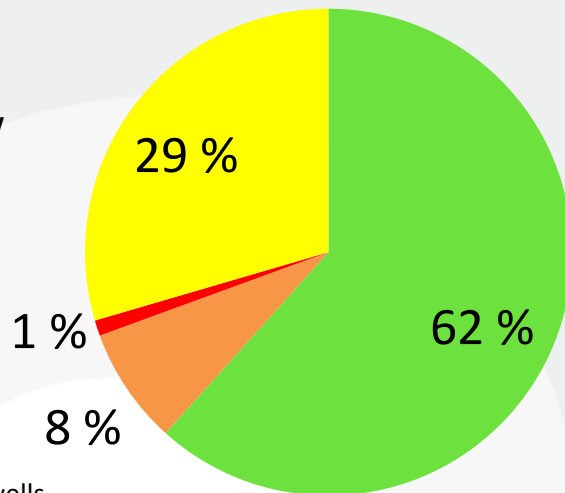
Category	Principle
Red	One barrier failure and the other is degraded/not verified, or leak to surface
Orange	One barrier failure and the other is intact, or a single failure may lead to leak to surface
Yellow	One barrier degraded, the other is intact
Green	Healthy well - no or minor issue



# PSA Survey 2011/2014

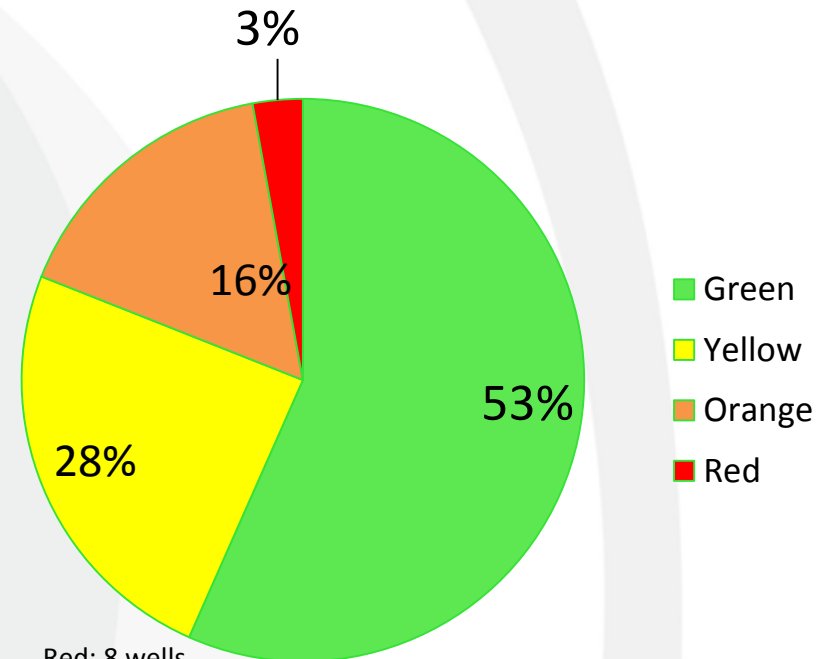
## Well integrity status ref NOROG 117

- Green
- Orange
- Red
- Yellow



Red: 2 wells  
Orange: 15 wells  
Yellow: 57 wells  
Green: 119 wells

## All temporary abandoned wells 2014 with and without monitoring



Red: 8 wells  
Orange: 46 wells  
Yellow: 78 wells  
Green: 150 wells

# In Conclusion

- Technical challenges for P&A are well known – time to focus on working together for good solutions!
  - Through better co-operation
  - Better qualification of methods and equipment
  - Sharing costs and risks
  - Quicker development
- Continue permanent P&A of existing temporarily abandoned wells



Questions?

