OWSG Update

Industry Steering Committee on Wellbore Survey Accuracy
Wellbore Positioning Technical Section

47th General Meeting
April 11th, 2018
Inverness, Scotland
Speaker Bio

• Pete Clark
  • Chevron ETC
    • Directional Drilling Technical Advisor
      • OWSG Chair
      • API RP78 Chair
  • 33 years with service & operator
  • BSc Applied Math
  • Houston
OWSG Update

Content

OWSG

• Anti-Trust Statement
• Mission : To promote practices that provide confidence that reported wellbore positions are within their stated uncertainty
• ConocoPhillips 1/24/18
  • Anadarko, BP, Chevron, ConocoPhillips, Devon, ExxonMobil, Oxy
• OWGP PU model update
  • Model testing remains an issue in the path of greater adoption.
  • Ongoing adoption & migration.
    • No issues reported due to adoption
  • Model availability
  • Funding
• Potential for standardization on ISCWSA Collision Avoidance Rule & Practices
  • Acceptance of value in CA unification / standardization
  • For wide adoption amongst operators’ concerns were raised over two issues.
    • Survey interval per DLS & SF
    • Increase in confidence level likely to make the calculations more conservative
  • Two operators planning adoption in the near future.
  • Request testing by operators to see what effect on operations would be
API RP78 Update

RP78 – Wellbore Positioning

• General Meeting (1/11/18)
  • Presentation is available on API site

• Section Lead changes
  • Mary Malihpour taking over from Jordon Meyer on Database,
  • Michael Donahue taking over from Pete Clark on Planning & Engineering
  • Benny Poedjono taking over from Ed Dew on Operations.

• Proposed timelines
  • End June ‘18 for 1st draft
  • End Dec ‘18 for document out to ballot
  • End Dec ‘19 for publication

• Bi-weekly calls with API

• Monthly Steering Committee Conference Calls
4 Wellbore Positioning – Technical Requirements
   4.1 Directional Survey Measurements and Wellbore Position Calculation
   4.2 Directional Survey Records
   4.3 Database
   4.4 Software
   4.5 Surface Location
   4.6 Survey Program
   4.7 Positional Uncertainty Models
   4.8 QA / QC
   4.9 Collision Avoidance

5 Wellbore Positioning - Process
   5.1 Planning & Engineering
   5.2 Handover from Planning team to Operations team
   5.3 Operations & Execution

6 Data Transfer
   6.1 Plotting (Outputs, Deliverables and Transfer files)

Annex
   Survey Mathematics
## API RP78 Update

**Steering Committee**

<table>
<thead>
<tr>
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<th>Section(s)</th>
<th>Affiliation</th>
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Conclusion

• Focus & progress API RP78
• Increasing adoption of OWSG PU models
• ISCWSA CA Rule & Practices