

Minutes of the Eighteenth Meeting of the

**Industry Steering Committee on
Wellbore Survey Accuracy**

Littleton, Denver, Colorado, US
9th October 2003

Present:

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Introduction – Joan Kirby LGC, Glenn McColpin
HSE, Refreshments / Meals, Service needs.

Open Meeting – Matthew Rhodes

Introductions (high attendance)

- Noted large number of attendees including large contingency from operators

Review Action items from ISCWSA 17 – Matt Rhodes (BP)

- Creation of formal committee -pending SPE issues
- SPE affiliation investigated, pending ISCWSA approval (this meeting)
- Survey Frequency sub Committee (Wayne Phillips reporting) work has started but little to report at this time.
- EOU expansion in wells that hold same AZ, phenomena needs research. Torgier, and Darren Aklestad. Torgier to give some info during Gyro Model presentation.
- Dave McRobbie, Gradiometer research. Very little patent info, but there appears to be quite a bit of Intellectual property published. The market appears open for more activity.
- Robert Wiley, Progress report on mud susceptibility meter. Harry (BHI) thinks it is close for rigiste work but more work is needed. Paul (Sperry) indicated the tool is very repeatable and with more work may act as some sort of go/no-go gauge. More work being done with HAL, BHI, Pathfinder.

SPE Affiliation – Matt Rhodes (BP)

- Lots of healthy discussion
- Concern over affiliation with POSC as an alternative or focus
- Concern regarding limiting factors of access and/or freedom to publish materials outside of SPE, like POSC or another website.
- If committee materials are posted elsewhere first, will ISCWSA be limited by SPE?
- Action Items - Identified amendments needed in constitution
 - Freedom to work with other bodies
 - Retain right to exit SPE
 - Retain Copyrights of materials

- Add MOC to Constitution
- A Constitutional Vote passed in agreement to join the SPE with amendments

An introduction to USGS – Jeff Love (USGS)

- 12 member staff
- Re-introduced Intermagnet
- Presented example and visuals of USGS observatory locations and data

WITSML – Matthew Kirkman (BP)

- Wellsite Information Transfer Standard – Mark-up Language
- Desire to move to common data format
- Hope to ease or create better workflows, application creation etc.
- Request to implement or address possible ISCWSA desired functions
- More info available at www.witsml.org and/or www.posc.org

Visualization Applications – Angus Jamieson (Tech 21) & Jim Bryant (UoC)

- Depth Correction software presentation
- BHA SAG, Drill pipe issues, Temp, Misalignment, resolution
- Using this software presented possibility to reduce higher density data to lower density data while maintaining profile shape and/or position definition

Simplified Gyro Error Model – Torgier Torkildsen (Statoil)

- Presented with focus on Continuous mode
- Identified the need for various gyro models due to the complexity and diversity of gyro tools available. This was stressed as a divergence from the MWD model and different from the initial objective.
- The static gyro survey model may function within existing drilling software specifications or capabilities
- The continuous gyro survey model may need enhancements to function or be implemented correctly within present commercial software
- Action items –
 - Torgier and John Weston (Sperry) to deliver a draft paper by early Nov.
 - Jerry Codling addressed 2 issues important for programmers :
 - For accurate modeling of continuous gyro surveys it would be necessary to have error terms that turned ‘on’ or ‘off’ depending upon survey mode – this would be a function of hole inclination.
 - The creation of some 'persistent variables' in terms that are not used in direct addition.

EOU propagation on Vertical Wells – Torgier (Statoil) & Darren Aklestad (SLB)

- Action item –
 - Generate an Amendment to the current model
- Problem noted with Totco’s
 - They usually exhibit this error as they have consistent azimuth (not random)
 - Many show the well always drilling to the North – dragging the geologic information with them.

Wellbore Profile Prediction Tool – Wayne Phillips (SLB)

- Looking for feedback on work
- Looking for further data to test work done so far
- Action item –
 - Gyrodata and BP to supply 1ft interval survey data

Depth Errors – Matt Rhodes (BP) & Harry Wilson (BHI)

- Error sources and uncertainties presented
- Action Item –
 - Request for Sub-committee
 - Wireline Depth control – how should this be handled
 - Investigation to alternative stretch error correction handling
 - Add LWD MD uncertainty to Output logs and/or Output logs with corrected MD for Bias or Stretch or all of the above

Action Items

- Constitutional Amendments - **Matthew Rhodes (BP)**
- Gyro Model Draft paper – **Torgier Torkildsen (Statoil) & John Weston (Sperry)**
- Wellbore Profile prediction – **Wayne Phillips (Schlumberger)** further refine model input parameters. Obtain more 1ft survey data. Release for others to peer review
- Amendment to address the EOU errors for vertical wells – **Torgier Torkildsen (Statoil)**
- Ongoing work to be performed by:
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Depth Error sub-committee

Harry Wilson, Matthew Rhodes, Angus Jamieson, Bill Lesso, Steven Klaus, Paul Rodney, Steve Holehouse, and Benny Poedjono

Anti-Collision sub-committee

Jerry Codling, Darren Ackelstad, John Turvill, Harry Wilson, Chris Chia, Dave McRobbie, ChevronTexaco TBA, William Allen

SPE Advanced Drilling and Engineering Textbook (Well Positioning Chapter(s))

Chris Chia, Wayne Phillips, Robert Wylie, Olli Coker, Harry Wilson, Ross Lowdon,
Matthew Rhodes et al.

Many thanks to **Landmark Graphics Corporation** for hosting this meeting, in particular Glenn McColpin who facilitated.

TOTAL have gratefully offered to host the next meeting, ISCWSA 19, in Paris, France.

This meeting has been penciled in for Friday April 2nd.

William Allen

Oct 2003