ISCWSA - Operator Wellbore Survey Group (OWSG) Meeting Held at ConocoPhillips (COP) Main Complex, Houston, TX 16 August 2012 – 13:00 to 17:00

Agenda:

Operator Group Business: (30 min) - Completed Association with SPE - ISCWSA (Pete Clark) [Chevron] Organization (Neil Bergstrom [Devon] Leading group?) Next meeting at SPE ATCE - San Antonio (October 2012) Non-Mag Spacing & Degaussing presentation - Neil Bergstrom [Devon] (30 min) - Completed Break 1 (10 min) Raw Data Standard format & Spreadsheet - Mark Mitchell & Pete Clark [BHP Billiton& Chevron] (30 min) - Completed Raw Data from Lower-tier DD Vendors - Lisa Grant [Shell] Break 2 (10 min) - Completed Problem with Inclination Only Surveys - Neil Bergstrom [Devon] - Not Completed Consolidation of Error Models - Son Pham [ConocoPhillips] - Not Completed Break 3 (10 min) Standard data migration format for Directional Well Planning Software - (30 min) - Not Completed HDGM – Jonathon Lightfoot [Oxy] – Not Completed Additional Topics / Discussion

Attendance & Contacts – see attached spreadsheet

Meeting Notes:

- Host COP Brett Borland (manager of the Global Drilling Engineering) spoke in support of our group meeting and effort. Stating the COP is in support of collaborative effort and willing to financially support JIP and R&D efforts in regards to survey management
- Operator Group Business
 - Group agreed and voted to be an official part of the ISCWSA sub committee – Bill Allen
 - o Group agreed to have Neil Bergstrom lead to group
 - Son Pham volunteer to take notes for the meetings
 - No OWSG meeting at SPE ATCE in San Antonio (only an update to the ISCWSA) - Next meeting will be Hosted by BP (Bill Allen & Roger Goobie)
- Non-Magnetic Spacing & Degaussing Presentation by Neil Bergstrom presentation available at the ISCWSA.net website (or email Neil or Son for a copy)
 - o Suggested recording Gauss measurements
 - Degaussing noted in the T.H. Hill standards
 - o Lisa & Neil agreed to further examine degaussing and Industry practices
- OGP P7 Standards Mark Mitchell spoke about the P7/2000 standard and the initiative to update the standard.
 - Majority agreed that it is a good standard and already in some software (i.e. Compass) but since standard not widely used and requested then in implemented in majority of software.
 - Need support from E&P companies to ensure standard implementation and wider usage. Meeting participants agreed that it is a good standard and agree to promote its use.

- Meeting participants also agree to support Mark as he works on the upgrading the standard.
- Suggestions to develop Source Codes to make it easier to implement standard in software.
- Mark requested that each participant send "Five objectives of the P7 standard". Also send any additional comments and addition to the contents
- Standard Raw Data format Pete Clark when through the raw data format and request that it is sent out with the meeting minute.
- BP Survey Workbook Roger Goobie has cleansed the data and a copy is attached in this meeting minute.
- Raw Data from Lower-tier DD Vendors Lisa Grant presented on the problems
 - o Sometimes Raw data not even available
 - Lack of QA/QC standards
 - o Lack of general understanding of survey and QA/QC practices
 - Operators need to start asking for raw data
 - Potential of including survey requirements in KPIs