Kajian stick-slips di sumur X ConocoPhillips Indonesia, Inc. Ltd = stick-slips study at well X in Conocophillips Indonesia, Inc. Ltd

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Abstrak

[ABSTRAK
Pada studi ini dilakukan peninjauan kembali data pengeboran untuk perbaikan disain Bottom Hole Assembly dan prosedur pemboran pada salah satu sumur yang dimiliki oleh ConocoPhillips Indonesia Inc. Ltd. Proses pengeboran minyak dan gas memerlukan perencanaan yang baik dan banyak proses saling berhubungan untuk menjadikannya operasi yang mencapai tujuan yang diinginkan. Bottom hole assembly (BHA) didefinisikan sebagai serangkaian kombinasi peralatan bawah permukaan yang dipasang pada rangkaian drill string sehingga diperoleh suatu kinerja yang diinginkan untuk tercapainya pemboran yang efisien dan efektif. Dengan pergerakan dan perputaran BHA dan profil sumur yang akan di bor serta panjang dari well displacement akan sangat memungkinkan ditemui masalah. Diantara banyak potensi masalah diatas kita akan memfokuskan pada vibrasi stick-slips dan efek yang ditimbulkan apabila kita tidak mengantisipasinya. Drillstring vibration adalah suatu kondisi dimana pada saat berotasi BHA yang terdiri dari berbagai macam komponen mempunyai ketidak setimbangan dan juga terdapat ketidak centeran dan bengkokan pada pipa, pemilihan jenis bit juga akan berpengaruh dan fenomena geometrik lainnya yang menghasilkan eksitasi pada frekuensi rotasi atau multipel dari frekuensi rotasi. Pada tulisan ini dilakukan pengolahan data yang diperoleh pada saat pemboran. Metode yang dilakukan adalah melakukan perancangan ulang pada software wellplan dari Halliburton dengan parameter dan setingan dari data real time dan menganalisa hasil keluaran berupa grafik-grafik dan data lainnya yang dapat menentukan apakah pada saat kondisi nyata pemboran benar telah terjadi stickslips. Dengan data yang didapat dan hasil pengamatan data log, pada sumur ini memang telah terjadi stick-slips dan kita perlu melakukan perbaikan untuk acuan di masa datang. Hasil analisa data yang didapat menunjukkan vibrasi yang terjadi jika ditinjau dari efek kerusakan pada pipa pemboran tidak terdapat cukup torsi yang terjadi untuk dapat membuat kerusakan pada koneksi pipa dan pipa itu sendiri. Dengan perbandingan dua sumur berdekatan kita melihat efek dari vibrasi stick-slips adalah berkurangnya Rate of Penetration yang cukup banyak sehingga nantinya akan berpengaruh pada biaya pemboran yang meningkat. Keluaran yang di harapkan dari tulisan ini adalah suatu acuan disain BHA dan atau prosedur pemboran yang dapat mereduksi potensi bahaya dari vibrasi stick-slips dan diharapkan dapat meningkatkan efisiensi drilling dari segi waktu dan biaya. Manfaat dari tulisan ini bagi penulis sendiri adalah sebagai sarana pembelajaran dan pengembangan ilmu pengetahuan dalam dunia perminyakan pada umumnya dan drilling khususnya.Semoga tulisan ini juga memberi manfaat bagi

pembaca lainnya.;
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ABSTRACT
This study will evaluate a set of drilling data to try to find the root cause of
drilling stick-slips that we?re experienced. The data were real time data coming from the field at one of ConocoPhillips Indonesia?s well. Oil and gas drilling process required a good planning with a lot of aspects connect to each other, making it a very complicated process. The goal is to drill a well in a most efficient ways. BHA was define as a set of down- hole tool using in drilling operation that connect to drill pipe. The idea is to drill the well to a target that we have pointed, and hoping the design BHA will perform efficiently and effectively. With a combination of the tool above plus the profile of the well including the length of the well, it will have a potential to face difficulties and
problems during drilling, among the problems we will focus on the stick-slips phenomena and the theconsequences if we tend to ignore it. Drillstring vibration is a condition where during rotation a BHA that contain many tool configuration and dimension experience . Not all the tool are symmetrical, this could lead to vibration. The bit selection is also affecting BHA in terms of vibration. On this study, we are going to process a set of data from realtime and also later on we will compare two data from near by well as our methode of study. We are going to use a landmark Halliburton software called wellplan as a tool to analyze realtime data so that from the output we can make a conclution weather or not the BHA has undergo a stick-slips vibration. The out put can be in graphics or tables. In the end we are trying to find solution to the stick-slips. The result of the software tells us that the BHA was experienced stick and slip and from the reference to our connection torque, the pipe was not torqued high enough to damage the connection. From the comparison of two data well, we make conclusion that the well that experienced stick-slips will affect its Rate of penetration quite significant where it will eventually damaged us in terms of well cost.The output that we are getting later on is the improvement on BHA design and the procedure of drilling where we are hoping it will reduce the potential of stick-slip vibration, and we will increase drilling efficiency. To me this paper not only increase my understanding on drilling vibration, but also to learn drilling operation. As a student of mechanical engineering, I get to see the connection of my study to my day to day work in oil and gas sector. In general I hope this paper will be used as an alternative to solve drilling process that also experience stick-slips., This study will evaluate a set of drilling data to try to find the root cause of
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