Commercial Gravity Operations – Modern GPS surveying and digital gravity meters

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Gravity surveying has been available since the early 1900’s in the form of analogue gravity meters, barometric levelling and conventional optical line of sight surveying methods. The gravity method was more generally used for applications in the oil industry.

With the advent of GPS technology in the form of centimetre accuracy from GPS surveying methods, commercial gravity operations developed. Line of sight surveying methods were no longer required and gravity meters became digital, easier and more reliable to use.

Commercial gravity surveys are now undertaken on a routine basis from projects spanning hundreds of kilometers for mapping large sedimentary basins to very small localised engineering projects covering merely hundreds of meters.

This paper outlines the development of the GPS surveying technology and the digital gravity meter. The integration of the two technologies are discussed with respect to the development of the commercial gravity survey method. Several applications and case studies are described with specific examples given from various international gravity contractors.