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## GREATER ANGOSTURA, EASTERN VENEZUELA BASIN, TRINIDAD AND TOBAGO

The Greater Angostura field is located in 36m to 46m of water on the continental shelf, about 37km east of the Republic of Trinidad and Tobago in the eastern (Trinidadian) sector of the Eastern Venezuela Basin.

The development is part of Trinidad Offshore Block 2c. It is operated by BHP Billiton (45%) on behalf of Joint Venture (JV) partners Talisman (25%) and Total (30%). The group signed a production sharing contract on 22 April 1996, and acquired a 3D seismic survey in 1997.

The discovery well, Angostura-1, was drilled in 1999. This intersected some 950ft (gross) of gas pay. The hydrocarbon potential of the structure was confirmed by the drilling of Aripo-1, Kairi-1, Canteen-1, Kairi-2, Angostura-2 and Canteen-2 wells. Each of these exploration / appraisal wells also intersected sands. The Kairi and Canteen fault blocks contain most of the oil. Aripo has a thin oil rim overlain by a significant gas cap.

During the six-year exploration phase of the PSC, a total of four exploration and three appraisal wells were drilled, discovering significant oil and gas resources within a large faulted structure known as the Greater Angostura Structure. A second 3D was acquired in late 2001 to better image the target reservoir, refine the oil in place, and derive locations for development drilling.

### RESERVES

The field came onstream in January 2005. This was preceded by first gas production on 16 December 2004. Gas commercialisation (Phase 2) will commence between three to nine years after first oil, depending on reservoir performance.

The gross recoverable oil reserves are estimated between 90 and 300 million stock tank barrels, with a mid case or P50 volumes of 160 million stb. The range of gross recoverable gas volumes is 1 to 2.3 trillion ft<sup>3</sup>, with a mid-case volume of 1.75 trillion ft<sup>3</sup>. On an oil equivalence basis, the mid-case resource is estimated at approx. 450 million boe.

### DEVELOPMENT CONCEPT

In the first phase of the development, oil is produced from three wellhead protector platforms (WPPs) via flowlines to a steel jacket central production platform (CPP). The Front End Engineering Design was carried out by Icon Engineering in Australia.

EXPA



The Greater Angostura field is located 37km east of the Republic of Trinidad and Tobago in the Eastern Venezuela Basin.

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The Greater Angostura field development is part of the Trinidad Offshore Block 2c.

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Geological interpretation of the main structure.

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The CPP topsides were fabricated, integrated and loaded onto the transportation barge Ocean Seal by Gulf Marine Fabricators in Corpus Christi, Texas. The bridge and flare boom were successfully fabricated by TOFCO in Trinidad, and loaded out at La Brea onto cargo barge CMS-1264. The fabrication of these components follows the earlier successful fabrication of the K1 deck in Trinidad.


The topsides comprises of five main decks - the cellar deck, production deck, mezzanine deck, main deck and compression module upper deck. The upper deck of compression module lies 137ft above sea level and the tip of the flare boom stands 198ft above sea level.

The CPP weighs 7,156t. It measures 215ft by 160ft by 164ft high. The topsides sit on an eight-legged jacket, measuring 135ft by 60ft at the top and 157ft by 82ft at the base.

The jacket, which stands in 110.5ft of water and weighs 1,779t, was secured by 2,223t of piles. The jacket was fabricated by Gulf Island Fabricators in Houma, Louisiana, and transported 2,100 nautical miles in 15 days from Houma on Crowley Barge 410.

The oil will be transported via an 18in pipeline from the CPP to an onshore storage and marine loading facility located at Guayaguayare Bay for export to market. Gas commercialisation (Phase 2) will commence approximately three to nine years after first oil, depending on reservoir performance.

Produced gas will be treated to recover liquids, then reinjected to maintain reservoir pressure and enhance oil recovery. Gas commercialisation will commence between three to nine years after first oil production, depending on reservoir performance. The production facility will have a nameplate capacity of 100,000 barrels of oil per day. All production facilities are of conventional design.

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## SPECIFICATIONS

### FEATURED SUPPLIERS

➤ [CorrOcean - Corrosion and Condition Monitoring Equipment](#)

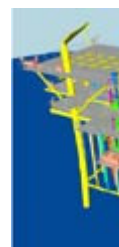
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