

A large, complex offshore oil rig structure is shown against a clear blue sky. The rig features a tall central derrick, multiple levels of steel platforms, and several large yellow cranes. Two orange lifeboats are visible on a lower deck. The rig is supported by a network of steel beams and cables, extending into the dark blue ocean.

New Vallourec VM130MS grade
selected for 20K project in the
Gulf of Mexico

SUCCESS STORY VALLOUREC

Overview

Beacon has recently qualified our newly developed VM130MS grade for their 20K project of Shenandoah located in the deepwater U.S. Gulf of Mexico, off the coast of Louisiana. First feedback shows a clear interest for this high-strength carbon steel grade combined with sour service performance.

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Challenge

Offshore oil and gas operations in the Gulf of Mexico continue to trend towards developing high-pressure/high-temperature (HP/HT) fields for wells up to 20,000 psi (20K) as a result of exploring further offshore, drilling in deeper waters and drilling to greater well depths. These wells require production casing with high-strength materials while keeping good sour service performances.

Solution

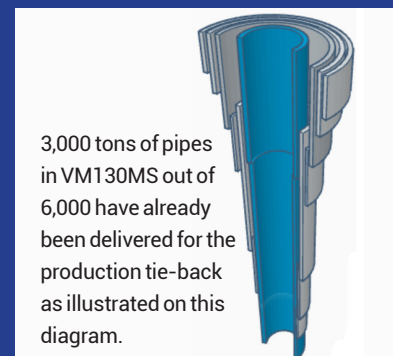
Given the very high stress found in HP/HT wells, it was necessary to find a grade that could meet particularly demanding criteria that combined both high mechanical strength and resistance to corrosion in a sour environment. The current grades available on the market only met one of these two criteria. It is in this frame of mind that Vallourec developed a carbon steel grade (VM130MS) combining both high strength (130ksi SMYS) and good sour service performances in mild sour environment, inside region 2 as per NACE MR0175. This grade is also available with high collapse performances (VM130HCMS).

The VM130MS grade has been successfully qualified for Beacon based on NACE Method A tests performed under mild sour conditions at seabed temperature (38°F):

- pH 3.9 to 5,
- Partial pressure of H₂S 0.003bar to 0.03bar/0.05psi to 0.40psi

This grade has been qualified through the strenuous I3P process for deep water high pressure Gulf of Mexico environments. The VM130MS grade has also been successfully qualified for heavy wall thickness so that it can also be used as base material for casing

accessories. Thus, OFS/OEMs can utilize Vallourec's VM130MS to produce accessories such as float equipment (float shoe/float collars) and solid body centralizers as well as material for casing crossover from upper to lower production tie-back (11.9" OD x 2.0" WT).



3,000 tons of pipes in VM130MS out of 6,000 have already been delivered for the production tie-back as illustrated on this diagram.

Benefits/ Results

- Steel grade solution for 20K HPHT wells
- High mechanical properties in mild sour environment
- Well design optimization with the best suited steel grade
- Material continuity from top to bottom of the casing string including OCTG accessories
- Beacon reports that the timely validation of this high-strength material made Vallourec's product the perfect fit for the project.

FIND OUT MORE

To find out more about our sour services grades visit [our website](#).

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