

Gasoduto de Transporte de Gás Natural Sines - Setúbal

Sines - Setúbal

Sines – Setúbal Natural Gas Pipeline

Sines - Setúbal

Trabalhos Efectuados

O Gasoduto de Transporte de Gás Natural entre Sines e Setúbal efectua a ligação entre o futuro terminal de GNL em Sines e a Rede Nacional de Transporte de Gás Natural.

Os trabalhos efectuados incluíram a construção de um Gasoduto de Gás Natural com 87 km de extensão, entre Sines e Setúbal, incluindo a maior travessia da Europa por perfuração dirigida, a do Estuário do Rio Sado (4500 m).

Foi utilizada tubagem com as seguintes características: tubo de aço API 5L Cl. Gr. X-70 (\varnothing 800 mm), espessura de 17,50 mm, com revestimento exterior a polietileno, pressão máxima de serviço de 84 bar e caudal máximo de 675 000 Nm³/h.

Work Description

Natural Gas Pipeline (87 km) between Sines and Setúbal including the longest Horizontal Direction Drilling (HDD) in Europe, 4500 m across the Sado River Estuary.

Pipework: steel pipe, API 5L CL. Gr. X-70 (\varnothing 800 mm) with polyethylene exterior coating.

HDD installation of 800 mm / 17,5 mm pipeline at the following crossings: Santo Andre, Salinas do Sado, Sado Estuary (4 HDD), Várzea do Sado, and Rio do Sado (8 HDD altogether).



Resumo da Obra

Work Summary

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|--------------------|---|----------------------------|
| Cliente | TRANSGÁS Sociedade Portuguesa de Gás Natural, SA | <i>Client</i> |
| Tipo de contrato | Série de Preços Unit Price | <i>Contract type</i> |
| Data de construção | 2003 | <i>Construction period</i> |
| Custo | EUR 21.667.182,00 | <i>Cost</i> |
| Projectistas | Eng. Luís Colen Seth, SA | <i>Engineering</i> |
| Observações | Consórcio com CME e GHIZZONI | <i>Notes</i> |

Terminal Marítimo da CLCM
Companhia Logística de Combustíveis da Madeira
Canical - Madeira
Complete Conventional Buoy Mooring (CBM) system
for the CLCM Canical Marine Terminal
Canical - Madeira

Trabalhos Efectuados

A **Seth, SA** concluiu a empreitada que lhe foi adjudicada pela CLCM – Companhia Logística de Combustíveis da Madeira para a concepção e instalação de um sistema de abastecimento de combustíveis para armazenamento no Terminal Logístico de Combustíveis instalado no arquipélago. Caracterizou a empreitada, um quadro de 4 bóias com ganchos de desengate rápido, ligados a um troço de três tubagens submarinas (cada uma com 450 m de comprimento) que terminam num sistema de PLEM (Pipeline End Manifold) colocado à cota –23.00 (Z.H.). A estes PLEMs estão ligadas mangueiras flexíveis que fazem a ligação aos navios abastecedores. A coordenação de toda a empreitada foi assegurada pela **Seth, SA** e a tecnologia ali empregue foi subempreitada à companhia holandesa Bluewater Energy Services B.V..

Work Description

Seth has completed a contract for the design and supply of a complete Conventional Buoy Mooring (CBM) system for the CLCM. The CLCM terminal is a Joint Venture including GALP Energia (Petrogal) providing the main import facility for LPG, black and white products (gasoline, diesel, fuel oil and kerosene) for the energy and power consumption for the island. Scope of supply consists of four CBM buoys, complete with mooring system and quick release hooks, three combined pipeline end manifolds (PLEMs) and hoses, and the complete control and instrumentation via umbilical towards the shore terminal control room. Seth used as technological partner the Dutch company Bluewater Energy Services B.V..



Resumo da Obra

Work Summary

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|--------------------|---|----------------------------|
| Cliente | CLCM Companhia Logística de Combustíveis da Madeira, Lda. | <i>Client</i> |
| Tipo de contrato | Chave-na-mão Turn-Key | <i>Contract type</i> |
| Data de construção | 2003-2004 | <i>Construction period</i> |
| Custo | EUR 6.500.000,00 | <i>Cost</i> |
| Projectistas | Bluewater Energy Services, B.V. (Holanda) | <i>Engineering</i> |



Terminal Multifuncional dos Socorridos
Câmara de Lobos - Madeira
Socorridos Multipurpose Terminal
Câmara de Lobos – Madeira Island (Portugal)

Work Description

Seth, SA, carried out the remodelling of the Socorridos Multipurpose Terminal on the island of Madeira, in front of the Socorridos Stream at Câmara de Lobos.

This job involved the construction of a marine terminal to supply fuel to the Vitória Power Station on the island of Madeira.

This infrastructure, which supplies fuel from tankers moored about 560 m from the shore, comprises three buoys used to moor the ship, about 75 m of Ø10" fuel hose and 560 m of Ø12" steel pipeline.

The following work was carried out in accordance with the initial contract. Removal of 4 buoys and respective chains and accessories, concrete blocks and anchors.

The steel buoys weigh about 5 tonnes each and have a diameter of 4 m at the water line and a total height of 4 m.

(These four sets of buoys were removed from the sea in front of the Formosa breach, where the Shell discharging facility used to be).

Laying just three of these sets (buoys + accessories + plus blocks and anchors) in front of the Cimentos Madeira Marine Terminal near the mouth of the Socorridos Stream.

Construction of a 560 m sea-line of Ø12", 12 mm wall, steel pipes welded together. The pipe ends at a PLEM (Pipe-Line End Manifold) built of reinforced concrete. On shore, the pipe is connected to another pipeline (the construction of which was not a part of our contract) that delivers the fuel to the storage tanks.

The PLEM includes steel piping and a set of seven Ø10" hoses totalling about 75 m. A shut-off valve was installed between the two pipelines.

A Breakaway Coupling valve was fitted between the 1st and 2nd hoses.

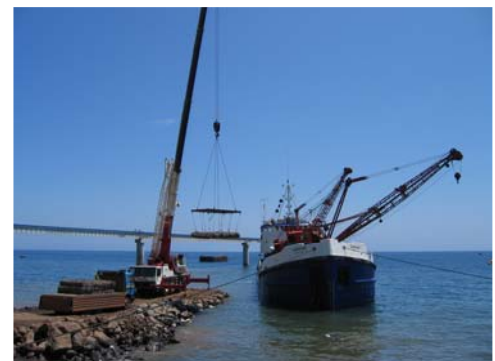
The steel piping of the sea-line is protected with Reno mattresses (wire-mesh baskets 4.0 x 2.0 x 0.3 m filled with 5-10 cm crushed stone).

As an addendum to the initial contract, **Seth** was awarded the overhaul of the 4 buoys (shot-blasting, sundry repairs, painting and fitting of lanterns fed by solar panels).

The 4th buoy is located at the Vitória Power Station and will act as a spare buoy.

A Sea Mark Plan was prepared by the Portuguese Hydrographic Institute.

The Employer in this contract was EDM – Electricidade da Madeira, which acted in close co-operation with CLCM – Central Logística de Combustíveis da Madeira.



Resumo da Obra

Work Summary

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| Cliente | EDM - Electricidade da Madeira | Client |
| Tipo de contrato | Chave-na-mão Turn-Key | Contract type |
| Data de construção | 2006 | Construction period |
| Custo | EUR 1.800.000,00 | Cost |
| Projectistas | Seth, SA | Engineering |



Remodelação do Sistema de Abastecimento
e Armazenamento de Combustível Militar

Porto Santo, Madeira

*Jet Fuel Pipeline from Off-base Depot
and Additional On-Base Storage*

Porto Santo Island, Madeira

This work involved remodelling the Military Fuel Supply and Storage System at the Porto Santo Island Aerodrome.

The contract included work in several areas: civil construction, foundations and structures, mechanical works, electricity, roadways, waters and drains.

Work carried out

- Distribution manifold building
- Two underground steel tanks (500 m³ each), covered with reinforced concrete
- Waste Tank and Fuel Tank, complete with ladders and walkways providing access to respective covers
- Two fuel pits at the Fuelling Bay and another two at the Apron
- Construction of earth retaining embankments and walls
- 3200 metres of 6" diameter carbon steel connecting pipeline
- Related DWV, landscape and electrical works



Projecto NATO 99/7PL40601

Resumo da Obra

Work Summary

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|--------------------|---|---------------------------------|
| Cliente | Ministério da Defesa Nacional Portuguese Ministry of Defense | <i>Client</i> |
| Tipo de contrato | Chave-na-Mão Turn-Key | <i>Contract type</i> |
| Data de construção | 2003-2004 | <i>Construction period</i> |
| Custo | EUR 4.982.652,00 | <i>Cost</i> |
| Projectista | Triar | <i>Architect & Engineer</i> |
| Observações | Consórcio com Crismetal | <i>Notes</i> |

