



### Metro de Sevilla, Spain – BREAKTHROUGH



## CONGRATULATIONS !

The LOVAT RME238SE Series 21300 Tunnel Boring Machine has completed the second of two drives for the Metro de Sevilla Line 1 tunnel project. The TBM, owned by UTE Metro de Sevilla (Dragados / Sacyr / Cavosa Joint Venture), broke through on April 21<sup>st</sup>, 2008, completing a total of 4,668 metres of tunnel excavation.

Geological conditions encountered consisted primarily of gravel, including sandy gravel, and blue marls. Other ground types along the alignment included silty sands and clays. The entire tunnel alignment is located under the groundwater table, with maximum groundwater height above the tunnel invert at 15 meters.

The Earth Pressure Balance TBM attained an average production rate of 19.6 metres and a best monthly production rate of 448 metres. Best daily and weekly rates were 29.4 metres and 175 metres, respectively.