

FOR IMMEDIATE RELEASE

## July 7, 2015

**Headline: Robbins “Rock Girl” Revs Up**

*Sub-Headline: Main Beam TBM Launches for Hawaii’s Longest Tunnel*

In the spring of 2015 by the idyllic shores of Oahu, a Robbins 3.96 m (13.0 ft) diameter Main Beam TBM began its long journey. The TBM started its excavation on a 4.6 km (2.8 mi) drive for a new sewer tunnel in Kaneohe, Honolulu, Hawaii, USA. The machine, nicknamed Pohakulani, meaning “Rock Girl” in Hawaiian, launched from a 23 m (74 ft) deep starter tunnel on a mission to bore through almost 4.8 km (3.0 mi) of basalt bedrock. Contractor Southland/Mole JV is building the Kaneohe-Kailua Wastewater Conveyance Tunnel for the City and Council of Honolulu, which will improve wastewater infrastructure by eliminating overflows during rain events.

The deep tunnel option was not the first design considered for the project: preliminary plans called for a smaller tunnel traveling under the bay. As Kaneohe Bay is an environmentally-sensitive area, a deep tunnel remained an attractive option. Richard Harada, of project consultant Wilson Okamoto Corporation, explains the ultimate decision: “A number of factors were considered in making the decision to build a deep tunnel including reliability, construction costs, life cycle costs, environmental impacts, constructability and qualified contractor availability.”

During the tunnel design phase, it was decided that the tunnel route should travel inland and deeper underground in order to bypass one of the few residential areas along the alignment. Designers introduced an isolated curve in the tunnel alignment of 150 m (500 ft) radius, requiring the TBM to be designed with a unique back-up system. There will also be operational procedures when crews navigate the tunnel curve, requiring the machine to be operated using half strokes rather than a full TBM stroke.

The curve is not the only unusual aspect of the tunnel; in fact, a tunnel on this scale has not been built in the Hawaiian Islands before. Everything from the logistics of the tunnel operation to pre-grouting sections ahead of the TBM for groundwater control are new to the Aloha State. Director of Southland, Tim Winn, elaborates: “There has not been a Tunnel Boring Machine of this size in the Hawaiian Islands or a tunnel of this length. The tunnel is being driven from an active Water Treatment Plant (WTP), and space is at a premium. There are also simultaneous contracts being performed there outside the scope of our work.” He adds that although there have been challenges, teamwork has been key: “Robbins Field Service has been extremely valuable during assembly and commissioning of the TBM.” As of June 2015, the TBM has excavated more than 300 m (1,000 ft), and is boring at a rate of 12 to 15 m (40 to 50 ft) per day in basalt rock. Rock bolts, steel arches, wire mesh, and ring beams are being installed as necessary.

Upon completion, the deep tunnel will enhance water treatment capabilities and further aid in ceasing non-compliant, uncontrolled or moderately treated wastewater discharges. The Main Beam TBM is estimated to end its journey in eight to ten months at the Kaneohe Wastewater Pre-Treatment Facility.

WORD COUNT: 493

**Side bar: The News in Brief**

* A Robbins 3.96 m (13.0 ft) Main Beam TBM launched in spring 2015 to bore Hawaii’s longest tunnel.
* The 4.8 km (3.0 mi) Kaneohe-Kailua Wastewater Conveyance Tunnel is being built for the City and Council of Honolulu to stem overflows of wastewater after rain events.
* Southland/Mole JV is constructing the tunnel—the first of its scope to be built in the Hawaiian Islands.
* As of June 2015, the Robbins TBM had excavated more than 300 m (1,000 ft), and was boring at a rate of 12 to 15 m (40 to 50 ft) per day in basalt rock.

Images Attached to Email. If you need a higher resolution image, contact Desiree Willis.

Captions for Images:

**Image 1:** The compact Robbins Main Beam TBM measures 3.96 m (13 ft) in diameter.

**Image 2:** On April 30, 2015 in Honolulu, Hawaii, a Robbins Main Beam TBM began a 4.6 km (2.8 mi) drive for a new sewer tunnel.

**Image 3:** The Robbins machine was launched from a 23 m (74ft) deep starter tunnel constructed with slurry walls.

**Image 4:** Crews lower the main beam of the Robbins TBM. The robust machine had bored more than 300 m (1,000 ft) by June 2015. *Photo Credit: Wilson Okamoto Corporation.***Image 5:** The Kaneohe-Kailua Wastewater Conveyance Tunnel is the first tunnel of its kind in the Hawaiian Islands, on a deeper and larger scale than all previous tunnels.

Contact Information:

## Desiree Willis

#### Technical Writer

Email: willisd@robbinstbm.com

Direct: 253.872.4490

##### *The Robbins Company*

*29100 Hall Street*

*Solon, OH 44139 USA*