



Key achievements

- Keller employed the Vibro replacement method using Stone columns to treat the area approximately 55,000 square meters.
- The project was completed without major accidents and was 2 weeks ahead of schedule.
- Largest stone column project in Vietnam

The project

The Nghi Son petrochemical refinery complex is a joint venture between state-owned PetroVietnam and foreign partners from Kuwait and Japan. The refinery complex is situated in Mai Lam area, Tinh Gia District, Thanh Hoa province, Vietnam. This is the country's second refinery and the largest project so far. The development consists of a plant area, a tank farm and jetty area.

The challenge

Approximately 130,000 linear meters of stone columns were installed using 5 Keller Vibrocats in a tight construction schedule. The challenges involved were to mobilize the rigs from Singapore to Vietnam, set-up a local team and train them to complete the project on time with good quality.

The solution

Using Keller's dry bottom feed method, Vibro stone columns were installed to depths of 18 m, supporting the 12 tanks up to 90 m in diameter and 19.9 m in height. The design loading was about 200 kPa. The area where the tank will be built was treated up to 3 m wide ring outside the tank footprint.

Application

Ground Improvement

Technique

Vibro Stone Columns

Market

Industrial – Oil, Gas & Chemical

Client

Idemitsu Kosan Company Limited,
Mitsui Chemicals Inc., Kuwait
Petroleum
International, PetroVietnam

Main contractor

JGC, Chiyoda Corp, SK
Engineering & Construction Co.
Limited, GS Engineering &
Construction Corp

Contract Value

S\$5-10 Million

Keller business unit (s)

Keller ASEAN

“Congratulations to you and to Keller Foundations Vietnam for the good completion of Vibro Stone Column works at NSRP Project. Good luck to you, hope to see you again in the near future.”

Mr. Hoang Ngoc Anh, Civil Supervisor, JGCS Consortium