

Vibratory Systems Analysis Testing (VSAT) Program



The M-I SWACO VSAT program is a proven solution for operators who are experiencing sub-par shale-shaker performance. The VSAT service, provided as part of the VSAT program, includes an inspection of the problem shakers, a review of rig practices, a vibratory-motion analysis of the shakers, a written evaluation of the findings and recommendations for improving performance. More than 30 major operators have used the VSAT service with positive results.

As an option, the M-I SWACO VSAT specialist can conduct a training session for the rig's shaker hands. Subjects covered include screen selection, rig-specific operating and maintenance procedures, and best practices compiled from worldwide operating experience.

How to tell when you need the VSAT program and service

If you are experiencing one or more of these critical problems, your rig will benefit from the VSAT program:

- Screen failures
- Fluid-capacity problems: drilling fluid flowing off the end of the shaker screens
- Poor solids conveyance
- Energy (G-force) output is less than expected

Features

- Applicable to all common brands of shakers and screens
- Precise determination of all shaker-related problems
- Detailed equipment database of shakers and screens
- Clear, detailed written reports
- Training available for rig crews

Benefits

- Improved shaker performance, immediately and long-term
- Drier cuttings and lower disposal volumes
- Improved ROP and drilling fluid recovery
- Better drilling-fluid performance and longer life
- Better solids handling
- Cuts costs
- Reduced drilling waste volumes
- Longer screen life, better screen performance

Phase 1.

The VSAT specialist first performs a thorough inspection of the shakers, removing all screens, checking the temperature of the motor bearings, removing the counterweight covers and inspecting the weights, and inspecting the seals, tensioning devices and support devices. The complete inspection process includes:

- Installation – mud flow, shaker levels, weir heights, discharges
- Frame and iron – tilt system, cracking, support blocks
- Mechanics – counterweights, motors, and conveyance
- Hardware – springs, bed rail, ball valves
- Electronics – power cables, grounding, controls
- Consumables – tension devices, deck rubber, bed seals

Phase 2.

In the next phase, the specialist inspects each shaker to see if the equipment is operating within factory specifications by connecting a dual-axis accelerometer to key test points on each shaker; rare-earth magnets ensure a solid contact. Data from the accelerometer is evaluated via proprietary vibration-analysis software and is output in an easy-to-read format. M-I SWACO maintains an up-to-date database of detailed information for all 30 of the common shale shaker makes and models in the oilfield.

Phase 3.

Finally, the specialist compiles all of the motion-analysis data, verbal communications and inspection information into a clearly written report that contains recommendations for restoring shaker efficiency, graphic output from the analysis software and a multipage section of best practices.

