Mapping reservoir connectivity and fluid movement

NCS Multistage Tracer Diagnostics is a leading full-service oilfield tracer resource with more than 7,000 wells traced in the U.S., Canada, and Argentina. We pioneered the development of particulate tracers, which deliver more accurate results for longer time periods, providing even more valuable diagnostic information.

- Detect and diagnose frac hits
- Evaluate well spacing
- Compare completion designs
- Verify stage contributions
- Calculate cluster efficiency
- Locate wellbore obstructions
- Monitor waterflood efficiency
And more

FirstView™ 3D interactive animation

ncsmultistage.com/tracerdiagnostics
COMMON TRACER USES
Evaluate well spacing and diagnose frac hits
Use oil tracers and formation-water tracers to locate the source of interwell communication and help optimize well spacing. Also determine whether frac hits are propped communication, hydraulic communication, or only pressure.

Fast, economical completion design optimization
Place multiple completion designs along the lateral and use stage-specific oil tracer recovery to assess relative completion effectiveness for fast economical optimization.

Verify stage contributions
Stage-specific chemical tracers verify which stages are contributing to production.

Calculate cluster efficiency
Radioactive tracers are placed with the proppant. Post-stimulation logging with gamma tools shows exactly which clusters accepted proppant.

Locate wellbore obstructions
Stage-specific tracers clearly reveal which stages are below and which are above a wellbore blockage.

Monitor waterflood efficiency
Use water or gas tracers to define field connectivity by mapping the movement of injected water or gas to production wells.

PARTICULATE OIL TRACERS
Patented slow-release OST® oil tracers are deployed as particulates that embed in propped fractures, enabling longer term oil production evaluation compared to conventional liquid tracers. Particulate tracers also eliminate false positives that occur when using liquid-form oil tracers.

FORMATION-WATER TRACERS
Patented slow-release WST® particulate water tracers embed in propped fractures for extended formation-water diagnostics.

FRAC-FLUID IDENTIFIERS
Liquid FFITM frac-fluid identifiers are water tracers that facilitate identification of stage-specific fluid flowback as well as detection of frac fluid entering offset wellbores during infill completions.

NATURAL-GAS TRACERS
Natural-gas tracers are deployed with proppant deep into the formation, where they partition into the gas phase. The inert chemicals are not naturally occurring and can be detected at extremely low concentration levels.

RADIOISOTOPE TRACING
We employ the three standard radioisotope (RA) tracers: iridium, scandium, and antimony. The radioactive particles are deployed with the proppant. Post-completion logging detects the radioisotopes in the near-wellbore region. Our RA logging capability includes memory gamma ray, memory spectral gamma ray, and real-time spectral gamma ray.

NEW TRACER DEVELOPMENT
We continue to expand our portfolio of OST, WST, FFI, and natural gas tracers to accommodate increasing stage counts.

SAMPLING AND ANALYSIS
After samples are received at our laboratories, standard FFI reports are ready in 2–3 business days, oil and formation-water reports typically require 7–10 business days, and natural-gas reports typically take 7–14 business days. Custom reports may take longer.

3D INTERACTIVE VIEWER
The FirstView™ application provides interactive, animated 3D visualization of chemical tracer recovery and well-to-well fluid communication. The viewer selectively displays stage numbers, tracer concentrations, and other key information, so you can clearly see what is happening in the formation. The viewer is included with all hard-copy reports.

ncsmultistage.com/tracerdiagnostics

LABORATORIES: Tulsa, OK, Calgary (Alberta)
SALES OFFICES: Oklahoma City, Houston, Denver, Midland, Dallas, Tulsa, Calgary (Alberta)
FIELD OFFICES: Oklahoma City, Odessa, Corpus Christi, Billings, Morgantown, Weyburn (Saskatchewan), Grande Prairie (Alberta)