

# GroundhogSCAN, GroundhogSCAN South & GreensburgSCAN

Marcellus

## PROGRAM OVERVIEW

GroundhogSCAN™, GroundhogSCAN™ South & GreensburgSCAN™; a three phase, 3D multi-client, multi-component, seismic survey located in the heart of the Marcellus Shale Play. The programs compromise approximately 510 square miles in Armstrong, Westmoreland and Indiana Counties, PA .

## PROGRAM OBJECTIVES

- Provide high quality structural imaging for geo-hazard avoidance
- Better characterize rock properties and natural fracture systems
- Establish what seismic attributes impact drilling and completion decisions
- Better understand key geologic drivers, maximize production and minimize development costs



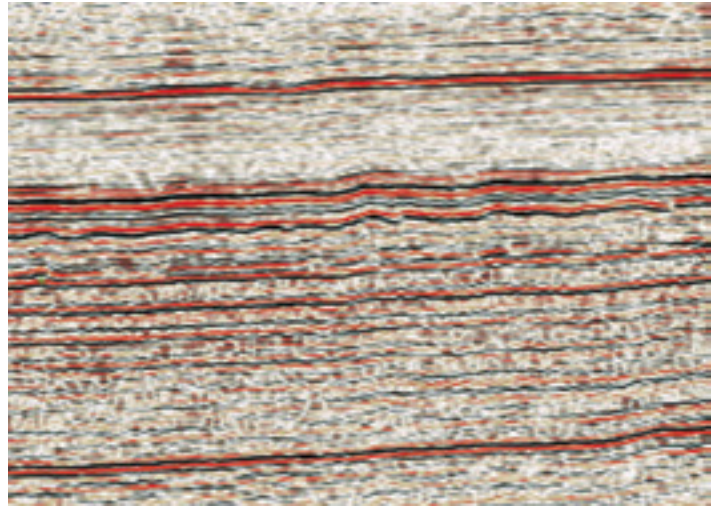
● ION's 3D ResSCANS



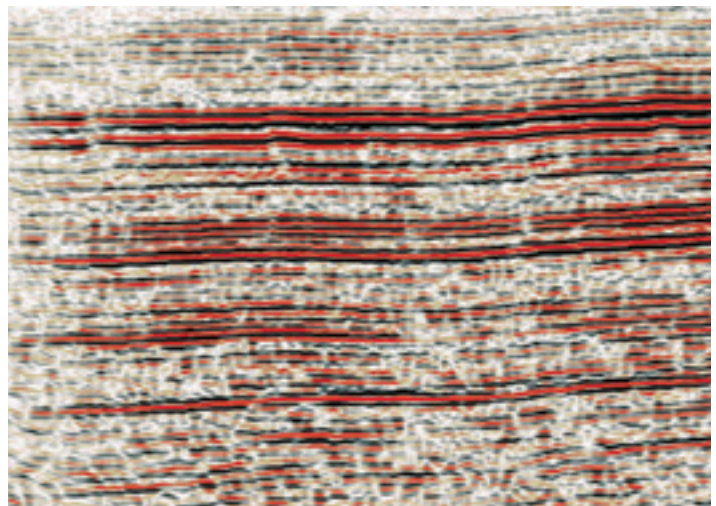
GroundhogSCAN - 278 Sq. Miles  
 GroundhogSCAN South - 100 Sq. Miles  
 GreensburgSCAN - 120 Sq. Miles

**KEY ACQUISITION PARAMETERS:**

- Receiver line interval: 900 ft.
- Receiver group interval: 300 ft.
- Shot line interval: 900 ft.
- Shot point interval: 300 ft.
- Bin size: 150 x 150 ft.
- Nominal fold: 187



P-wave data from ION's ResSCAN™ Program in the Marcellus



C-wave data from ION's ResSCAN™ Program in the Marcellus

**ABOUT ResSCAN™**

ResSCAN programs are 3D multicomponent imaging and characterization programs designed to help E&P companies better understand conventional and unconventional reservoirs to maximize production. Unlike traditional P-wave surveys, ION's seismic approach provides enhanced key rock property insights away from the well bore. The workflow integrates upfront geological, petrophysical, and rock physics analysis to establish which seismic attributes best predict key reservoir properties and impact drilling and completions engineering decisions. The enhanced imaging and seismic attribute analyses enable operators to evaluate and address key challenges associated with geohazard identification and avoidance, reservoir characterization, and completions effectiveness.

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