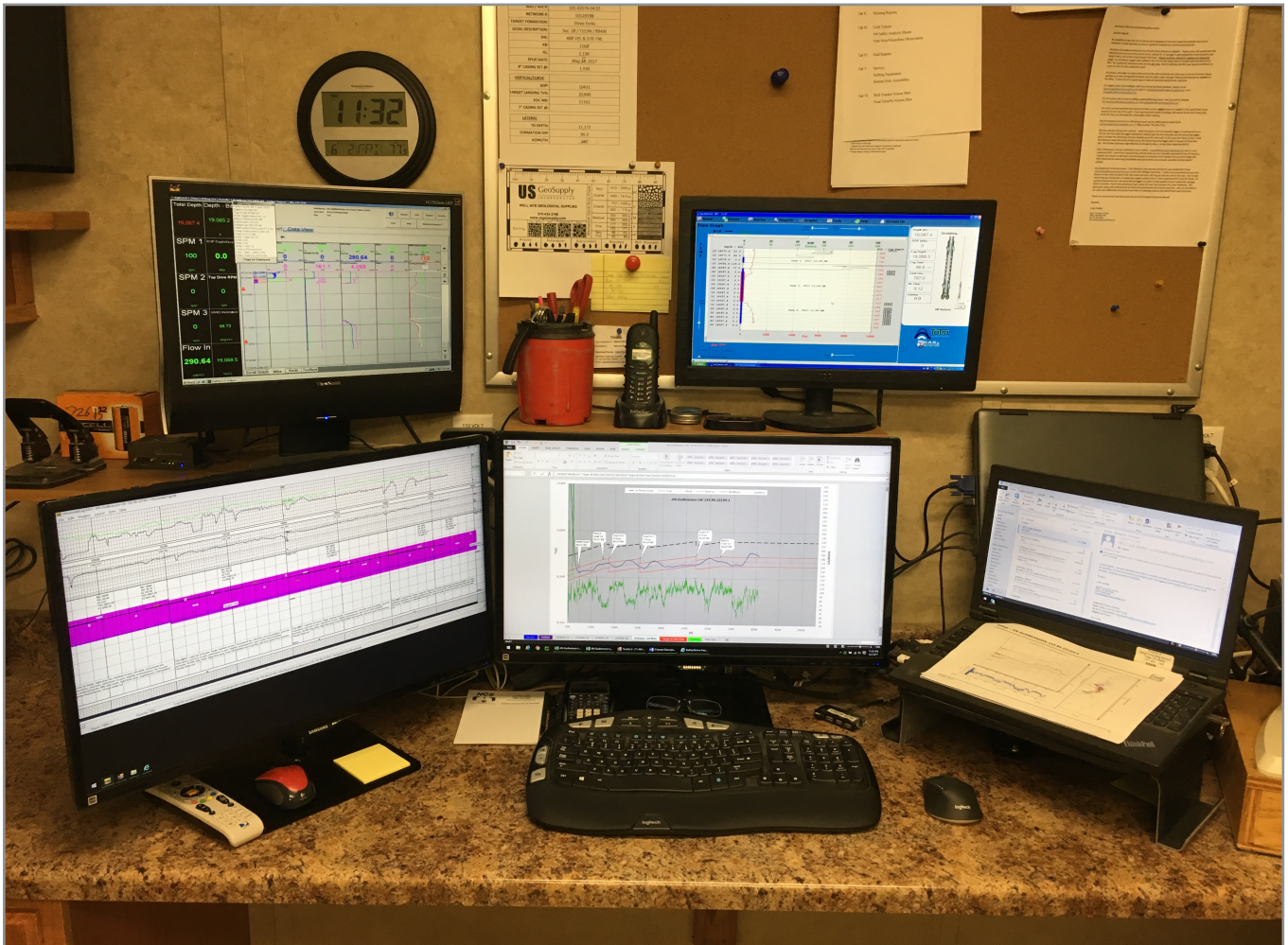


# NESET

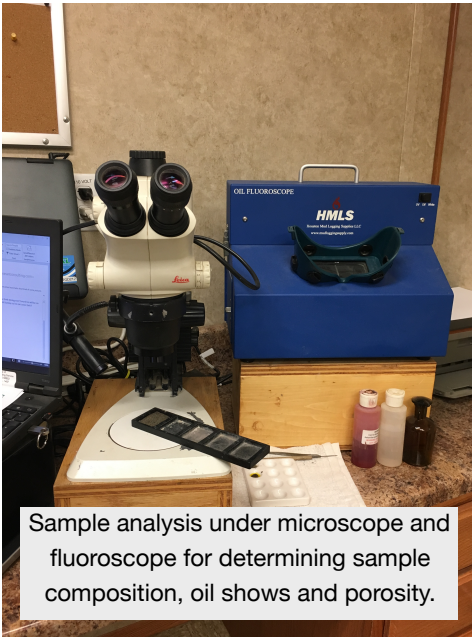
## MUDLOGGING

### A Core Competency of NESET



**NESET** was founded by geologist Kathleen Neset in 1980 with a focus on logging the well bores as they were being drilled within the Williston Basin. Initial targeted formation was the Middle Bakken, a dolomitic siltstone formation sandwiched between two oil generating shale layers that serve as the source rock for both the Bakken and Three Forks pay zones. The Three Forks Formation has since become an equally productive source for oil and gas wells.

Typical on location geology computer setup with geo-steering software, rig data information, horizontal log and email displayed.



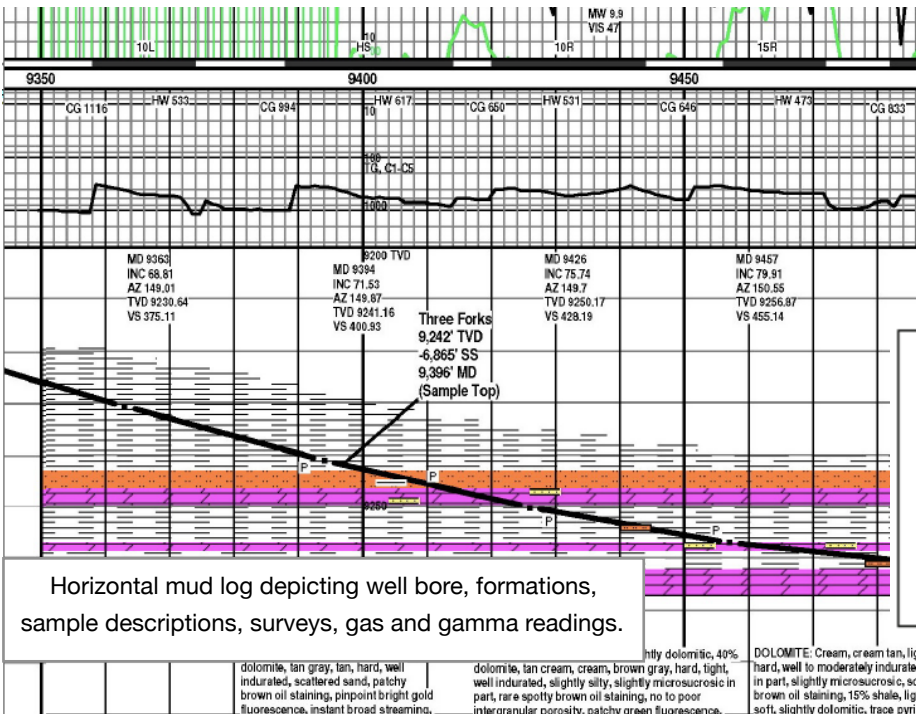
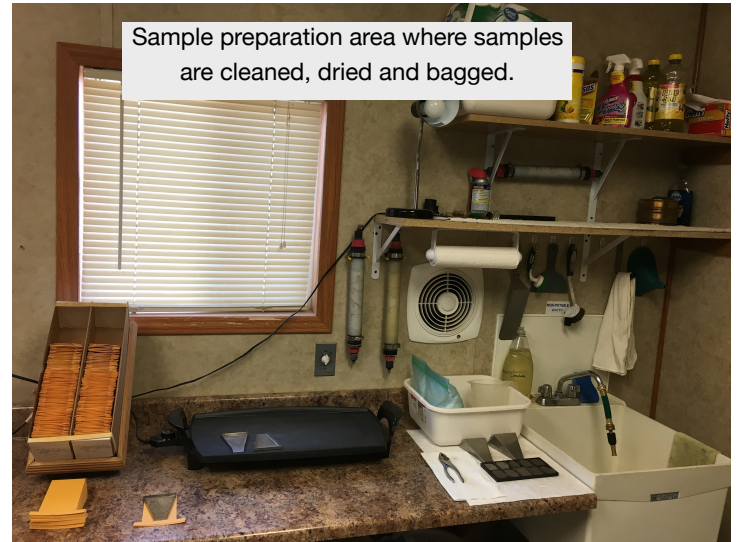
Sample analysis under microscope and fluoroscope for determining sample composition, oil shows and porosity.

A team of two geologists and/or highly skilled mudloggers are assigned to a rig with the responsibility of pulling samples at designated intervals, analyzing the rock type to include porosity and oil shows. Gas readings, rate of penetration of the drill bit, and gamma readings are collected, logged and analyzed.

Additionally, formation tops are picked using gamma readings, rate of penetration changes and the analysis of the formations so that an accurate "kick off point" is set prior to beginning the curve section of the well. Once the well bore is landed in the targeted

formation, the horizontal section of the well is logged and analyzed for oil and gas shows.

**NESET** geologists and mudloggers maintain the responsibility for monitoring and recommending formation dip changes as the well bore extends across the formation. This task is extremely important, especially in the Middle Bakken, as the formation is typically a consistent thickness across the two mile lateral and is rarely more than 60 to 70 feet thick.



Horizontal mud log depicting well bore, formations, sample descriptions, surveys, gas and gamma readings.

Well reports are completed on every well and distributed to the ND Department of Mineral Resources and the Oil Company, if required.

# NESET

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