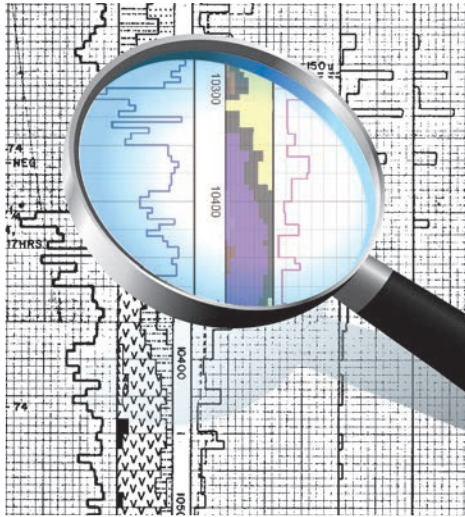


NeuraLog

Automated Log Digitizing and Preparation of Log Data



NeuraLog is the most widely-used application for well log digitizing and data preparation in the oil and gas industry. E&P projects require a variety of data to develop a proper understanding of rock and fluid properties and reservoir characterization. Whether you are working with curve, periodic or text data, *NeuraLog* provides automated tools for transforming paper or digital log files into quality data ready for display and analysis.

Quality digital data is a key element of successful E&P operations. Working with legacy logs can pose many problems for you and your organization; such as quality degradation, lack of digital data coverage and possible data loss. *NeuraLog* addresses these problems through the use of automated tools which enable intuitive digitizing to ensure data is preserved for use with current and future projects.

While organizations already have vast amounts of digital logs, the difficulty is determining if data is accurate and ready for use. Data quality can vary widely from project to project, log to log and foot to foot. Unique tools for data quality analysis and preparation in *NeuraLog* help check for accuracy and prompt the user for immediate on-screen corrective action to ensure the most accurate data available is used for project analysis.

Digitizing

Automated Curve Tracing

Neural Network Speed and Accuracy drive tracing algorithms for better-than-human tracing.

- Immediate feedback highlighting traced curve
- Line style curve tracers to account for curve crossings
- Built-in grid model to enhance curve recognition
- Auto-stop error detection
- Interactive curve editing with immediate resume tracing

Lithology Data Capture

Utilize data from mud logs and lithology logs for complete analysis.

- Capture lithology and descriptions from hand-drawn mud logs with ease
- Unique step curve (ie. ROP, Gas...) capture by sample rate
- Log annotation to mark important data such as zones, faults and reservoirs

Image Warp and Stretch Correction

NeuraLog automatically corrects for distortion in log images by using defined depth grids to produce quality log images and digital data.

Interactive Log Display

NeuraLog displays the log image and traced curves directly on your monitor, providing immediate feedback.

- Point and click interaction and auto-scrolling with tracing tool
- Error correction at any point in the tracing process

Neuralog

Turning Paper Into Petroleum

Unlimited Backup Scales

NeuraLog's automated tracing functions process unlimited backup scales, automatically patching together the different sections of curves for streamlined curve output.

Preparation

Data Quality Improvement

NeuraLog includes comprehensive tools to improve and ensure log data quality. The Log Quality Index (LQI) Report provides an overall measure of quality on in-house or vendor data. The *NeuraLog* Quality Improvement tools include checks for pixel overlay, spikes, gaps, and depth gridding.

For verification of LAS files, the Virtual Light Table shows the match between the log image and digital data overlay quickly and visually. The LAS report summarizes your data to check for norms.

Multiple Runs/Curve Splicing

NeuraLog provides the option of merging multiple runs of the same curve within a log into one LAS file. In addition, curves from multiple files may be merged into a single LAS output.

Digital Log Editing

- Customizable LAS Curve Template
- Curve Arithmetic
- Depth Shift
- LAS Curve Edit
- Baseline Shift
- LAS File Merge

Curve Calculator

NeuraLog comes pre-loaded with various methods to calculate v-shale, porosity, water saturation as well as other standard conversions. Custom equations can be saved and edited.

Data Input

Scanned Images

NeuraLog accepts any standard color, grayscale or b/w TIFF, JPEG, PDF or BMP image as input.

Data Files

- Depth-calibrated rasters from industry data vendors or other applications
- Standard LAS files

Well Header Files

- PI Dwigths Fixed 197 • IHS Energy Well Fixed 297 • GeoGraphix WellBase V2 • LAS Headers
- Generic ASCII or Excel

Data Output

Vector Files

- LAS 1.2 • LAS 2.0 • AutoCAD DXF • PETRA ASCII Well Data • Tab Delimited ASCII

Raster Calibration Output

- *NeuraLog* Calibrated Rasters • PETRA ASCII Log Image Calibration (LIC)
- GeoGraphix Depth Registration ASCII (DRA)

NeuraLog System Requirements

Pentium 4 Processor • Min. 100 MB Disk Space • 256 MB RAM • Graphics - 800 x 600 (or higher) with 16 bit high color recommended • Windows 2000/XP/Vista/7