

FOLD HERE

DS-2016-41710

The well name, location and borehole reference data were furnished by the customer

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Center: Mdland DS

Process Date: 01/12/2017

FMI in 6 in section
Image processing and Interpretation interval: 13700-14768 ft
All the displayed logs have been depth matched to the FMI Image
All completion decision should be made taking this into account.

Borehole Stress Summary All 13704ft - 14768ft

Schmidt Plot - Upper Hemisphere

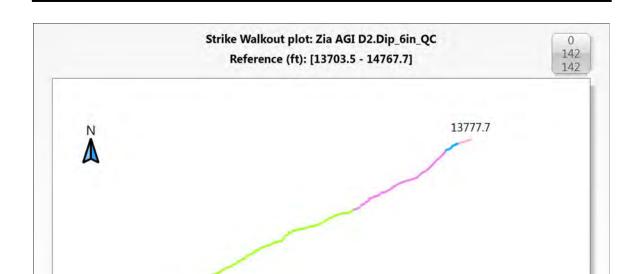
OP Vers.: 2000-999

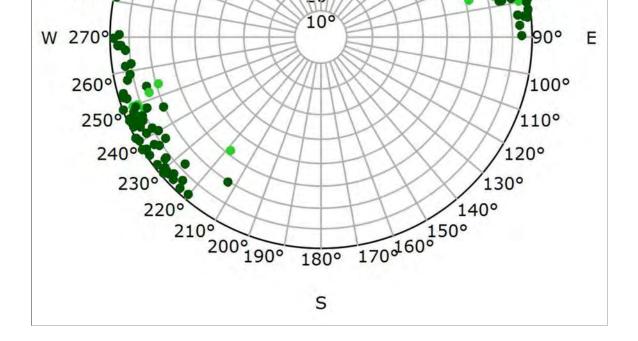
N 330° 350° 00 20° 90° 30° 80° 320° 40° 70° 310° 60° 300° 50° 40° 290° 309 280°

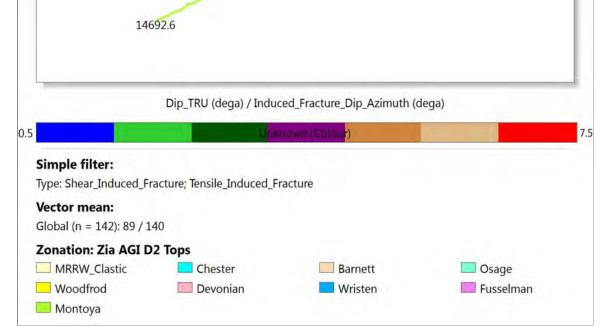
Strike Vector Plot

Baseline: Techlog 2013.4

Log Analyst: Offa Zened

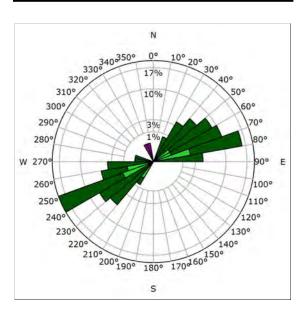


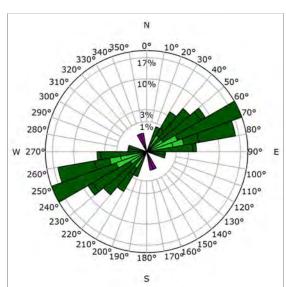




Azimuth Mirror

Observations

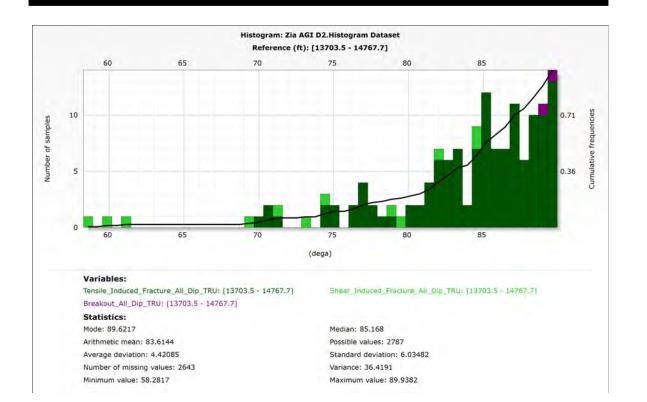




The Tensile (dark green) and Shear Induced (light green) fracture sets are composed of fracture azimuths (azimuthal direction of fracture propogation) hand traced individually for greater statistical accuracy. The Breakout (dark purple) set also is composed of hand traced borehole breakout azimuths. Induced fractures propogate in the direction of maximum horizontal stress while borehole breakout occurs in the direction of minimum horizontal stress. Maximum horizontal stress is the preferential direction for fracture stimulation. The plots illustrate the MAXIMUM HORIZONTAL STRESS for the interval from 13704ft to 14768ft. The strike rosette shows that the dominate strike orientation is NE-SW (58 Percent) and a minor NNE-SSW (26 Percent) orientation.

Dip Angle Histogram

Interpretation

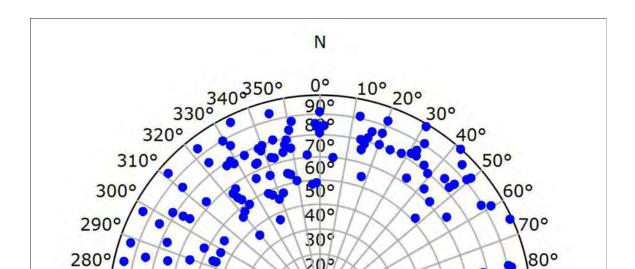


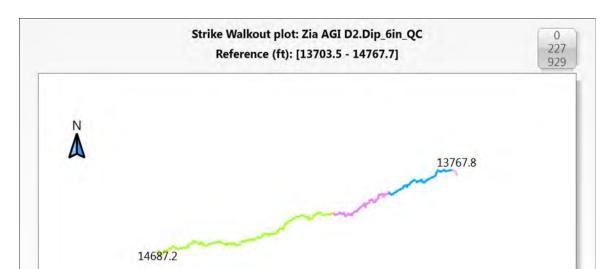
Drilling Induced fractures were picked within the logged interval with a predominant strike azimuth of N65E-S65W. Drilling Induced fractures have an identical strike orientation of future hydraulically simulated fractures.

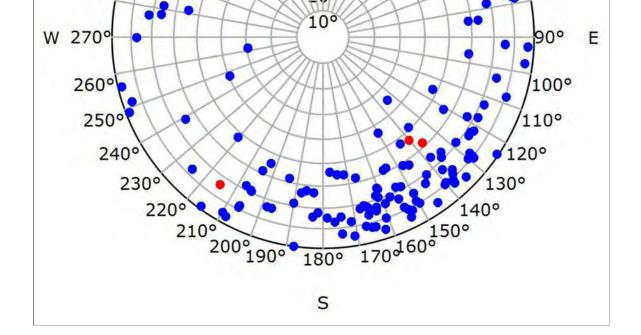
Drilling Induced fractures orientation should be closely looked at versus natural fracture orientation, as this may suggest additional fracture strike trend more likely to close these fractures during pressure depletion production in over-pressured reservoirs.

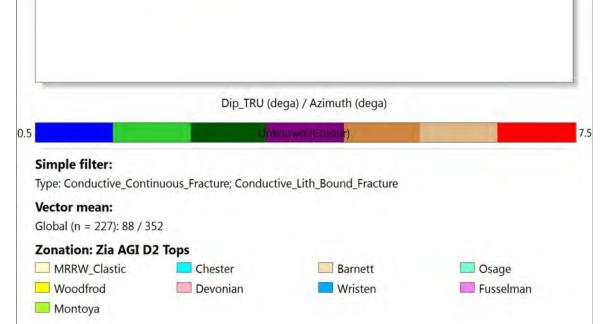
Conductive Fracture Summary All 13704ft - 14768ft

Schmidt Plot - Upper Hemisphere



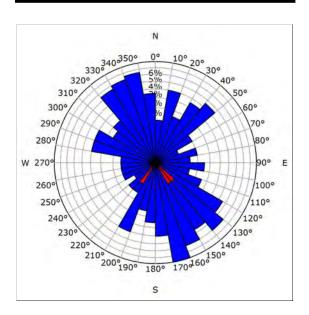


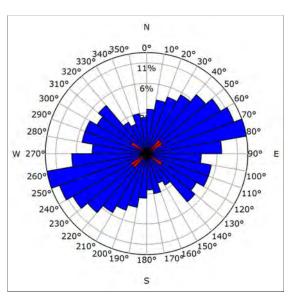




Strike Rosette

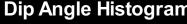
Observations

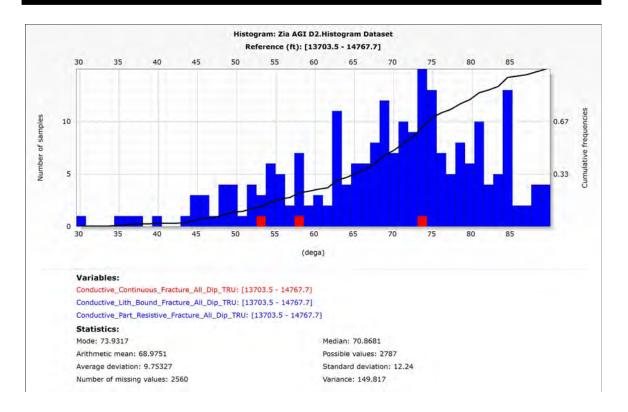




The Conductive Continuous Fracture, Conductive Lith Bound Fracture, and Conductive Part Resistive Fracture dipsets are composed of hand traced conductive (open) natural fractures and are subdivided based on observed continuity. Conductive Continuous Fractures completely and continuously transect the wellbore. Conductive Part Resistive fractures conversely are partially healed or do not completely transect the wellbore. Conductive Lith Bound fractures terminate at an observable lithology contrast. 3 Conductive Continuous Fracture(s), 224 Conductive Lith Bound Fracture(s), and 0 Conductive Part Resistive Fracture(s) were identified within the interval from 13704ft to 14768ft. The strike rosette shows that the dominate strike orientation is **ENE-WSW (31 Percent).**

Dip Angle Histogram





Interpretation

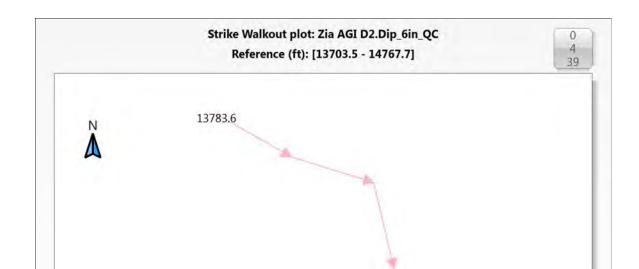
Natural lithology-bound fractures were picked with a wide variation in strike orientation. However a predominant strike orientation can be identified which is ENE-WSW and WNW-ESE. These features are generally interpreted as open fractures: The conductive appearance would reflect the invasion of the drilling fluid making them appear conductive. Only core data and fracture analysis on core would confirm if clay filled fractures are present. Fracture Aperture is then computed using mud filtrate resistivity. Fracture porosity computation and open fracture trace length can be used to identify the interval of major appearance of these features.

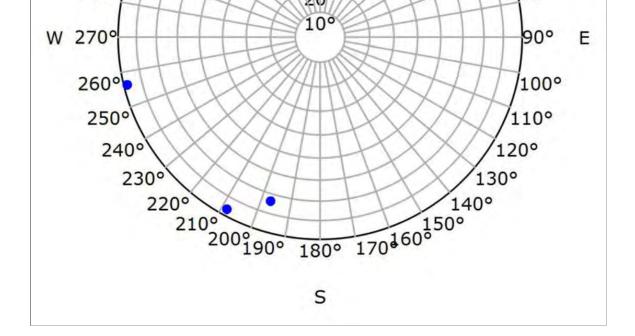
Conductive Fracture Summary Devonian 13625ft - 13797ft

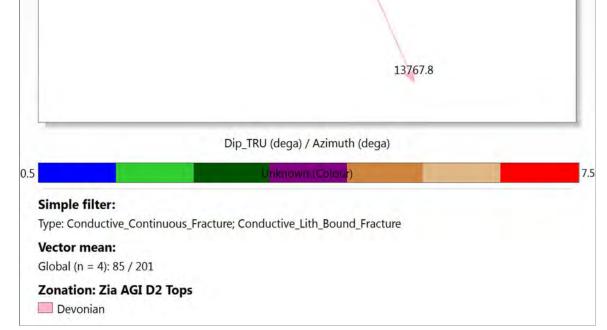
Schmidt Plot - Upper Hemisphere

N 340³⁵⁰° 10°20° 90° 30° 80° 320° 40° 70° 310° 50° 60° 300° 60° 50° 409 290° 170° 309

280°

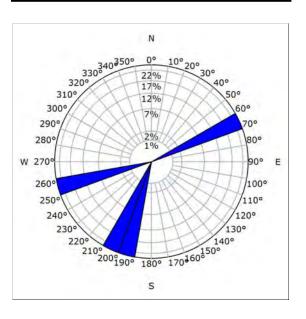


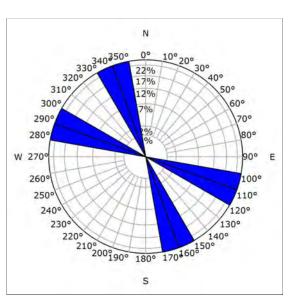




Strike Rosette

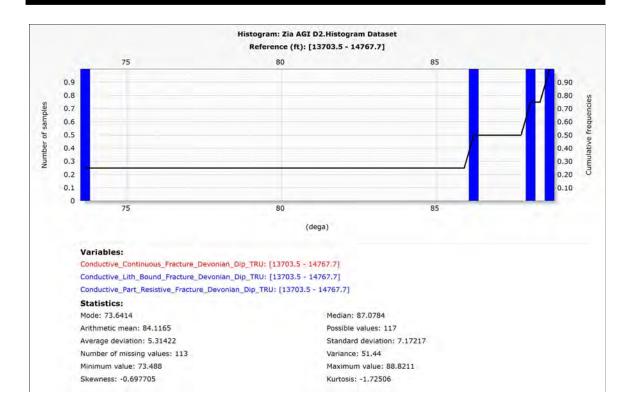
Observations





The Conductive Continuous Fracture, Conductive Lith Bound Fracture, and Conductive Part Resistive Fracture dipsets are composed of hand traced conductive (open) natural fractures and are subdivided based on observed continuity. Conductive Continuous Fractures completely and continuously transect the wellbore. Conductive Part Resistive fractures conversely are partially healed or do not completely transect the wellbore. Conductive Lith Bound fractures terminate at an observable lithology contrast. 0 Conductive Continuous Fracture(s), 4 Conductive Lith Bound Fracture(s), and 0 Conductive Part Resistive Fracture(s) were identified within the Devonian interval from 13625ft to 13797ft. The strike rosette shows that the dominate strike orientations are NNW-SSE (50 Percent) and WNW-ESE (50 Percent).

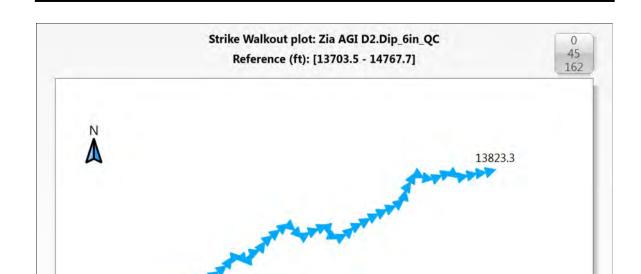
Dip Angle Histogram

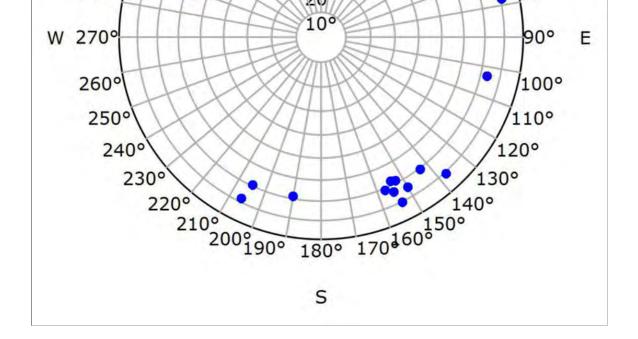


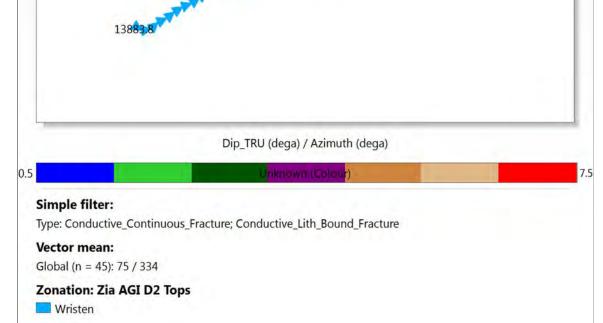
Conductive Fracture Summary Wristen 13797ft - 13972ft

Schmidt Plot - Upper Hemisphere

N 340³⁵⁰° 10°20° 30° 80° 320° 40° 70° 310° 50° 60° 300° 60° 50° 409 290° 70° 309 280°

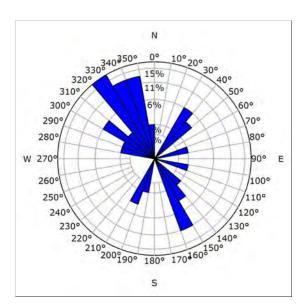


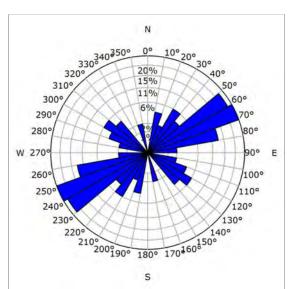




Strike Rosette

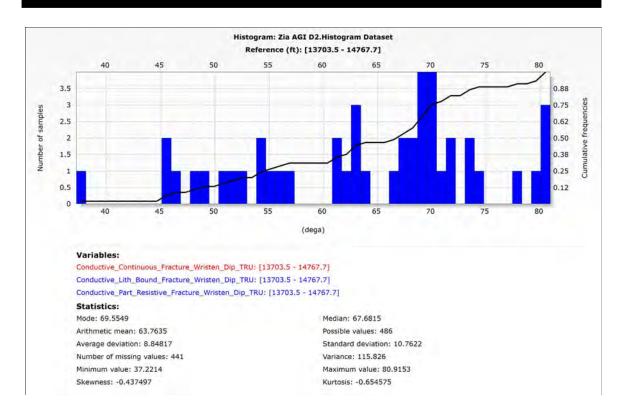
Observations



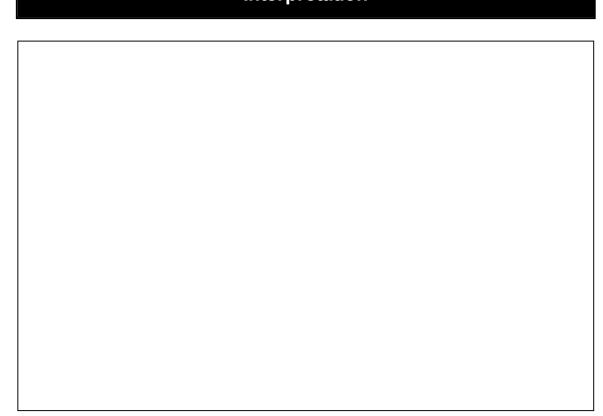


The Conductive Continuous Fracture, Conductive Lith Bound Fracture, and Conductive Part Resistive Fracture dipsets are composed of hand traced conductive (open) natural fractures and are subdivided based on observed continuity. Conductive Continuous Fractures completely and continuously transect the wellbore. Conductive Part Resistive fractures conversely are partially healed or do not completely transect the wellbore. Conductive Lith Bound fractures terminate at an observable lithology contrast. 0 Conductive Continuous Fracture(s), 45 Conductive Lith Bound Fracture(s), and 0 Conductive Part Resistive Fracture(s) were identified within the Wristen interval from 13797ft to 13972ft. The strike rosette shows that the dominate strike orientation is ENE-WSW (53 Percent).

Dip Angle Histogram



Interpretation

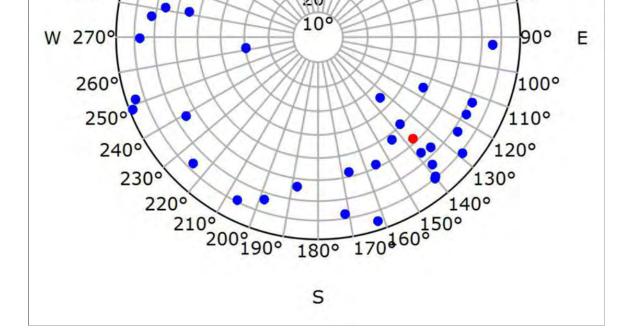


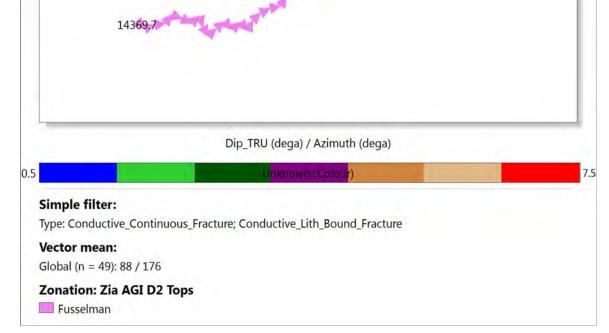
Conductive Fracture Summary Fusselman 13972ft - 14371ft

Schmidt Plot - Upper Hemisphere

N 330° 350° 10°20° 30° 800 320° 40° 70° 310° 60° 300° 60° 50° 400 290° 70° 309 280°

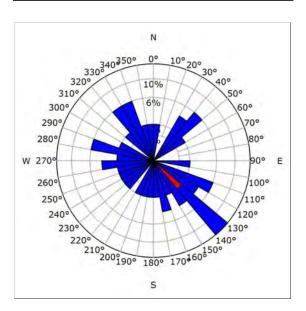


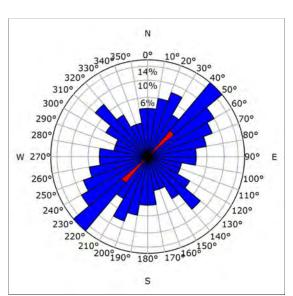




Strike Rosette

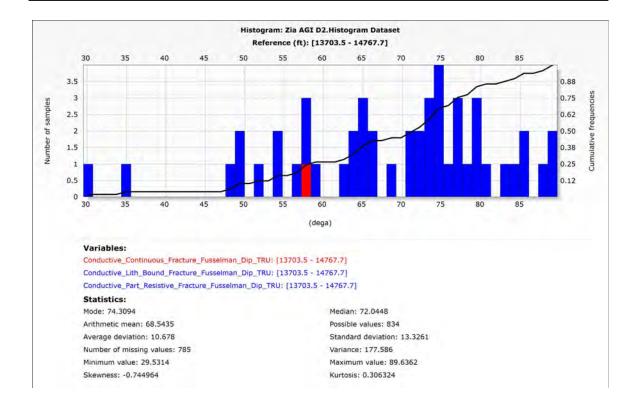
Observations





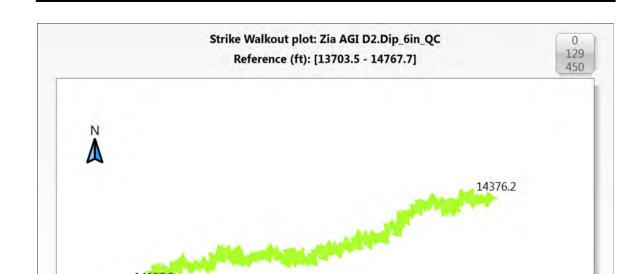
The Conductive Continuous Fracture, Conductive Lith Bound Fracture, and Conductive Part Resistive Fracture dipsets are composed of hand traced conductive (open) natural fractures and are subdivided based on observed continuity. Conductive Continuous Fractures completely and continuously transect the wellbore. Conductive Part Resistive fractures conversely are partially healed or do not completely transect the wellbore. Conductive Lith Bound fractures terminate at an observable lithology contrast. 1 Conductive Continuous Fracture(s), 48 Conductive Lith Bound Fracture(s), and 0 Conductive Part Resistive Fracture(s) were identified within the Fusselman interval from 13972ft to 14371ft. The strike rosette shows that the dominate strike orientation is NE-SW (27 Percent).

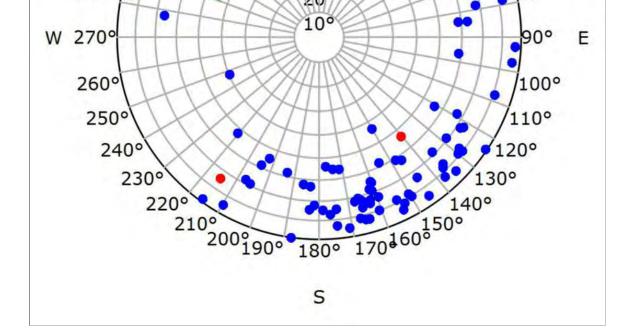
Dip Angle Histogram

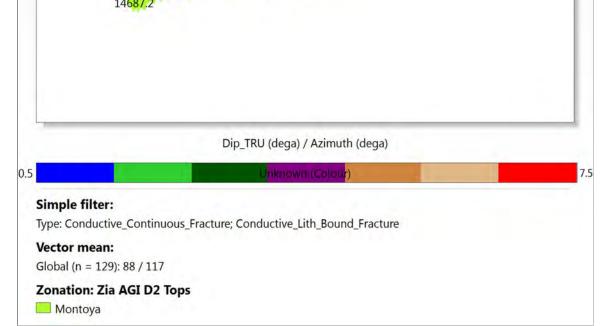


Conductive Fracture Summary Montoya 14371ft - 14768ft

Schmidt Plot - Upper Hemisphere

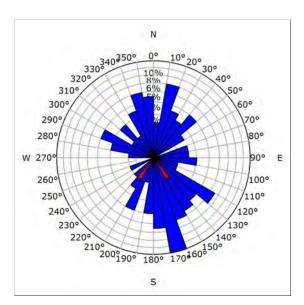


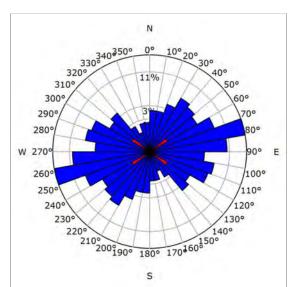




Strike Rosette

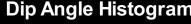
Observations

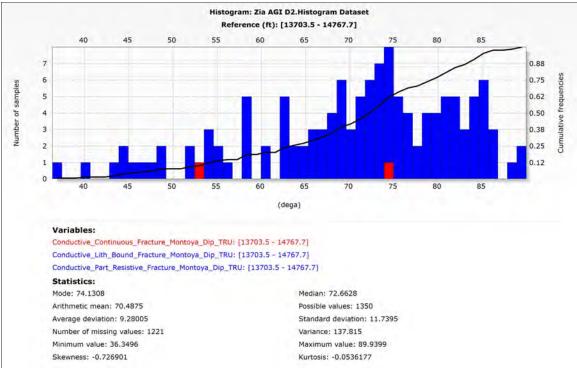




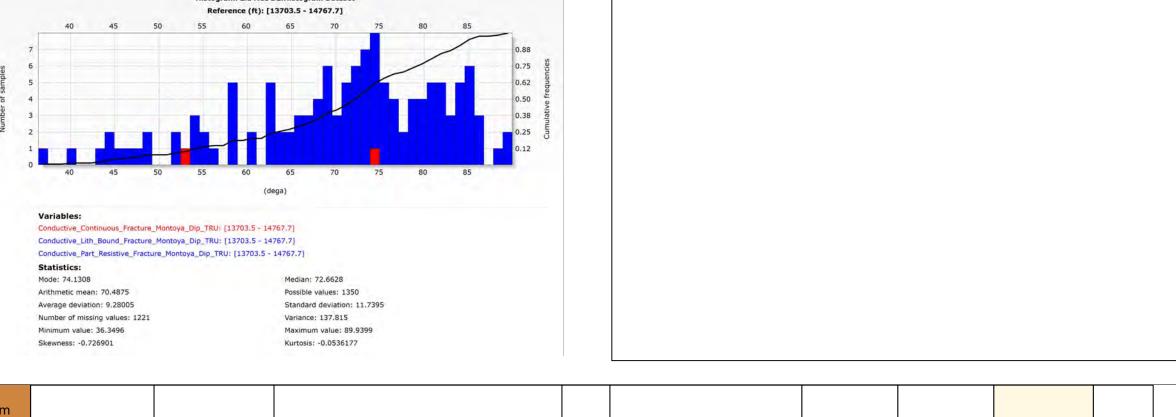
The Conductive Continuous Fracture, Conductive Lith Bound Fracture, and Conductive Part Resistive Fracture dipsets are composed of hand traced conductive (open) natural fractures and are subdivided based on observed continuity. Conductive Continuous Fractures completely and continuously transect the wellbore. Conductive Part Resistive fractures conversely are partially healed or do not completely transect the wellbore. Conductive Lith Bound fractures terminate at an observable lithology contrast. 2 Conductive Continuous Fracture(s), 127 Conductive Lith Bound Fracture(s), and 0 Conductive Part Resistive Fracture(s) were identified within the Montoya interval from 14371ft to 14768ft. The strike rosette shows that the dominate strike orientation is ENE-WSW (29 Percent).

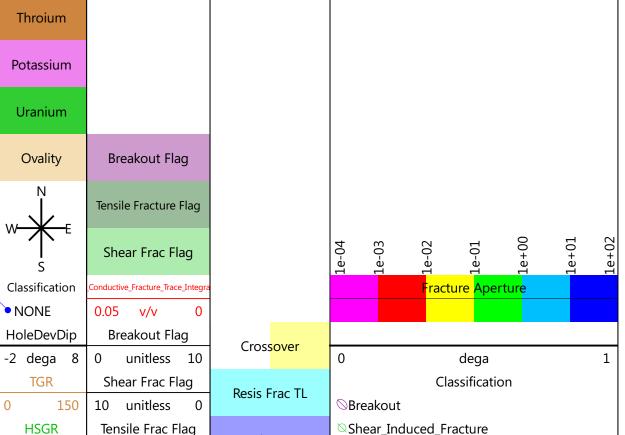
Dip Angle Histogram

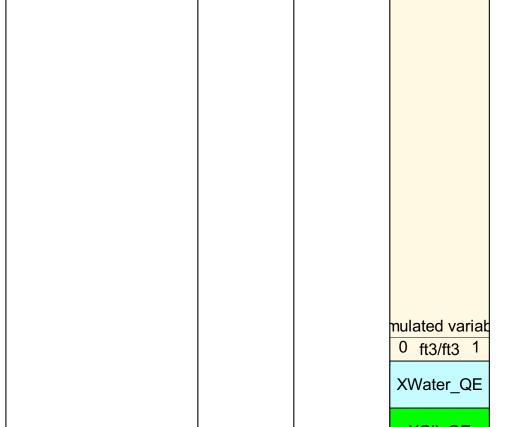


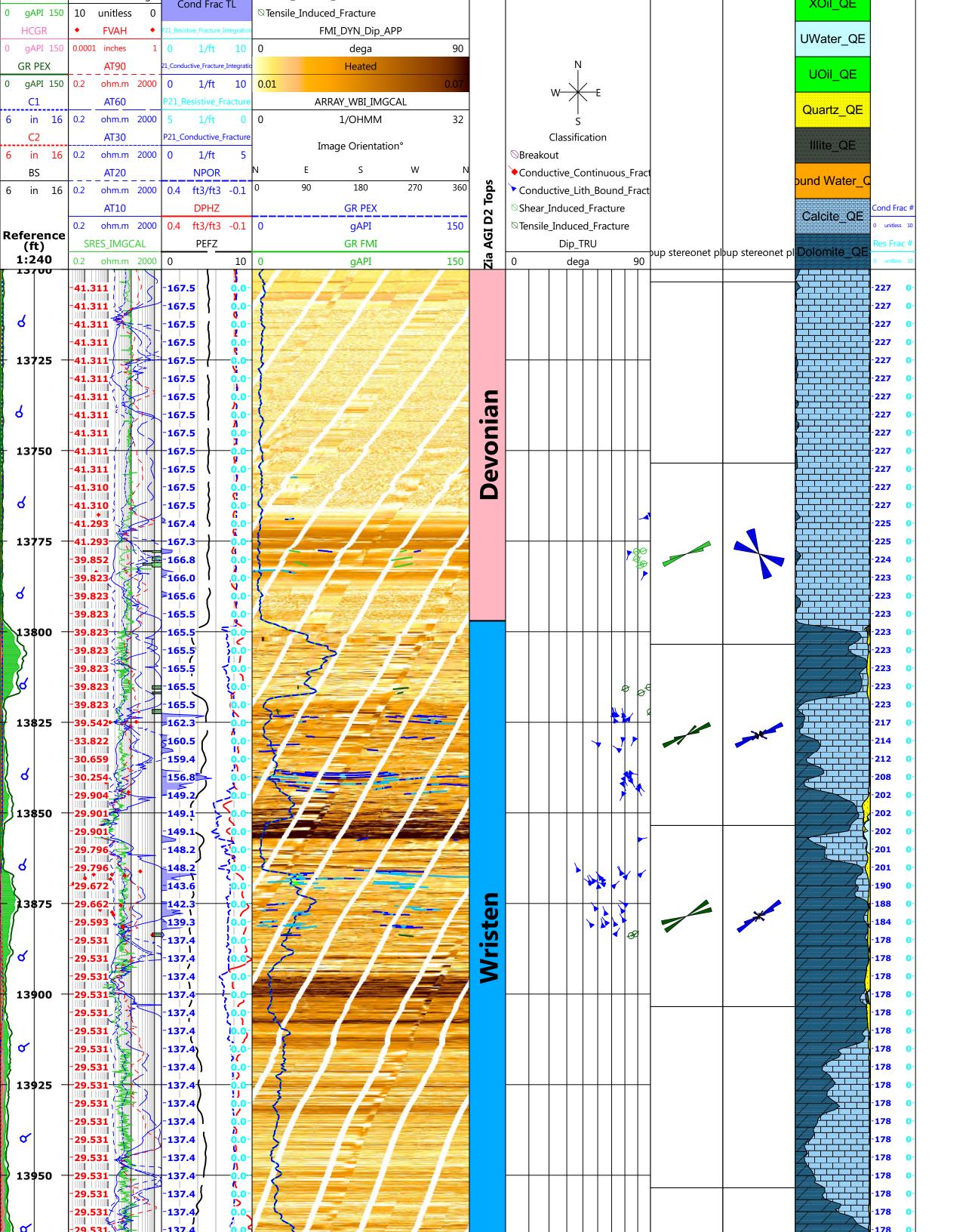


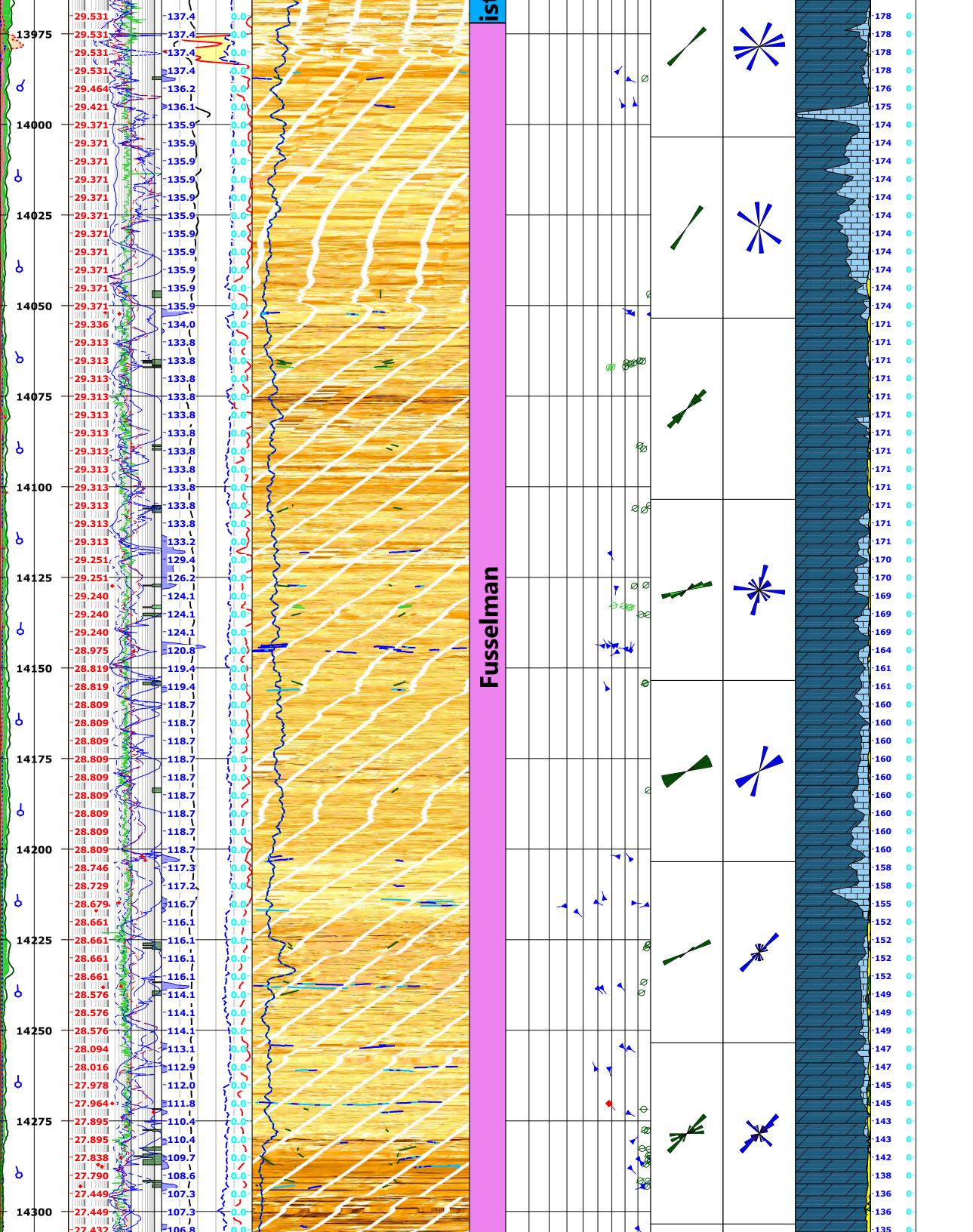
Interpretation

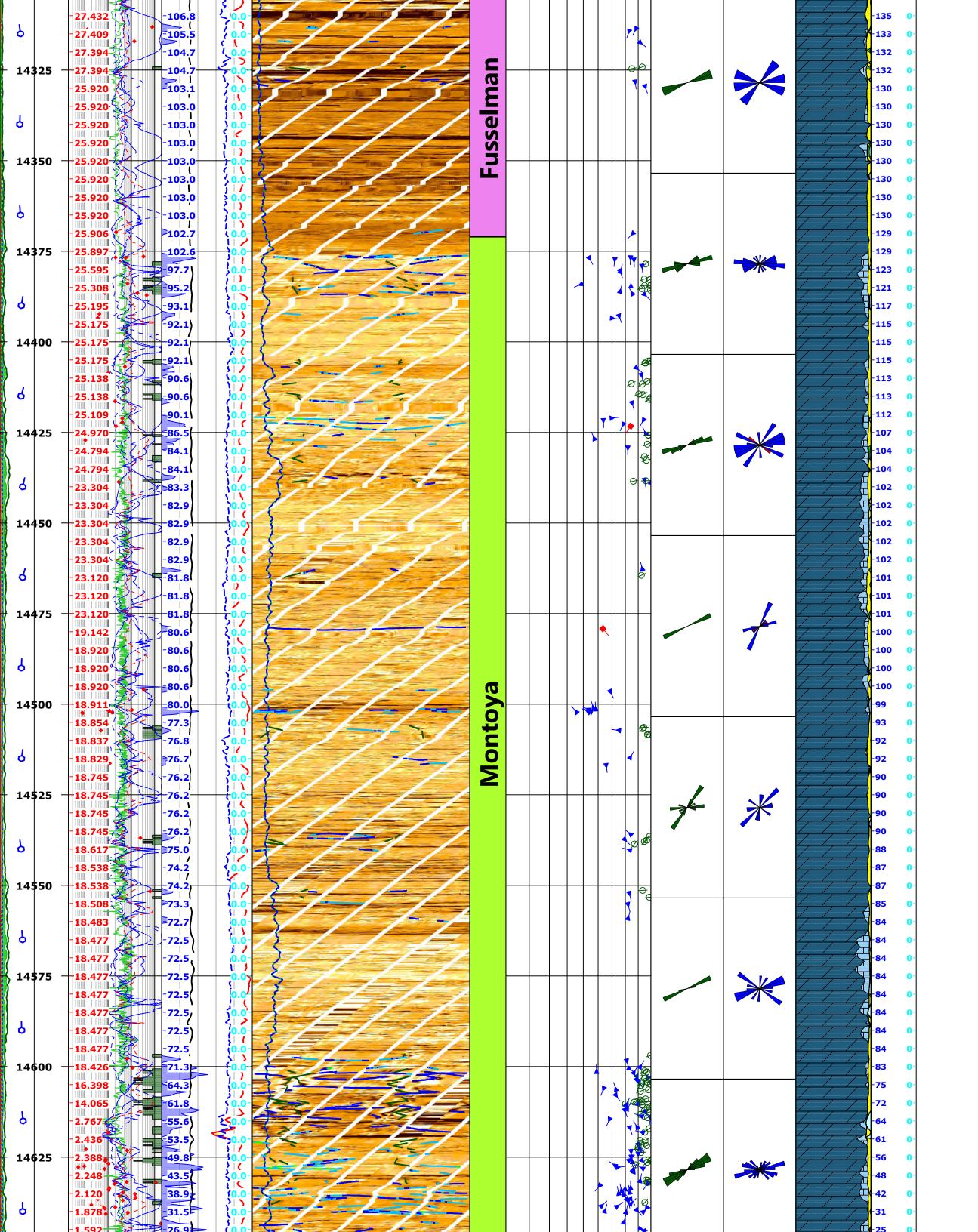


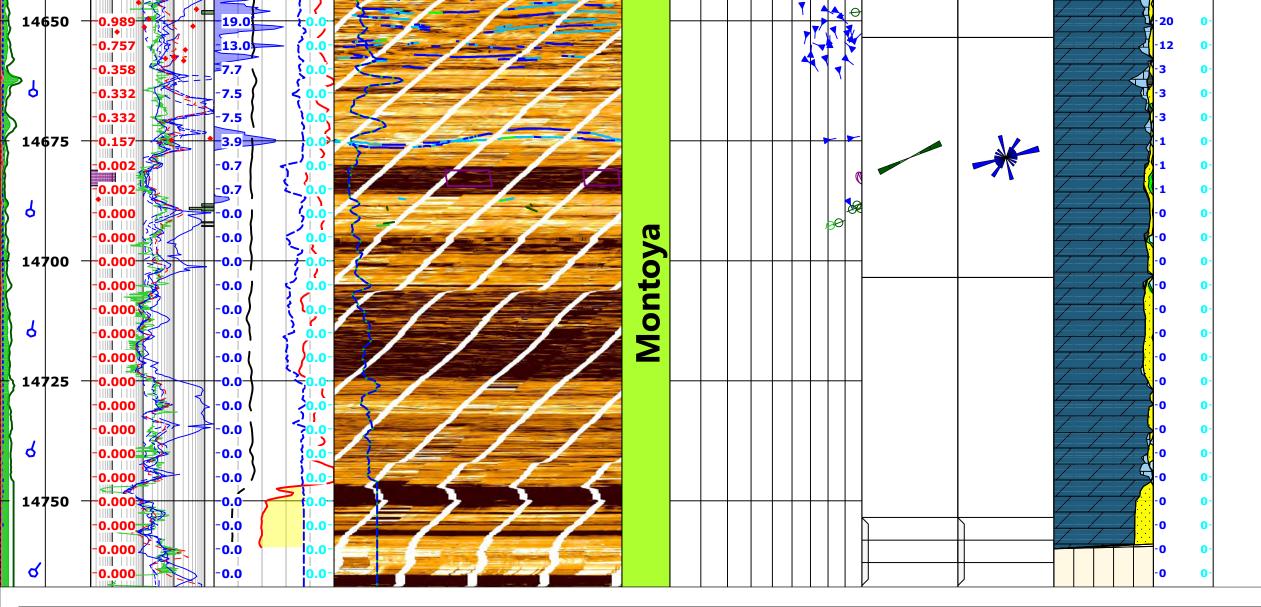












COMPANY: DCP Midstream LP

WELL: Zia AGI D2

FIELD: AGI Devonian Exploration

COUNTY Lea

STATE: New Mexico

COUNTRY: USA

API No.: 30-025-42207 Date Processed: 01/12/2017

Schlumberger