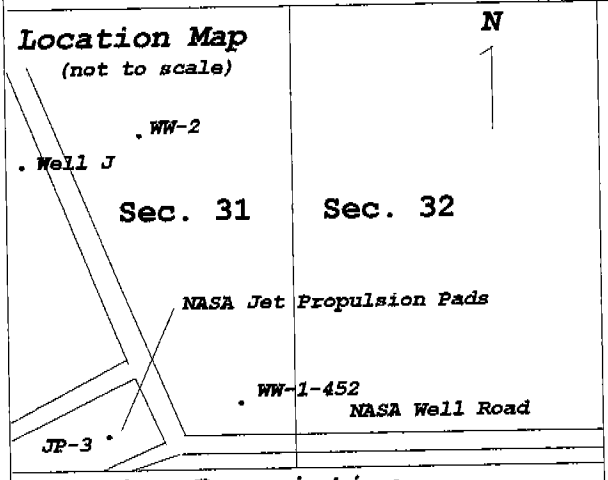
WSTF We.. Borehole Lithologic/Geop..ysical log

Location Map
(not to scale)



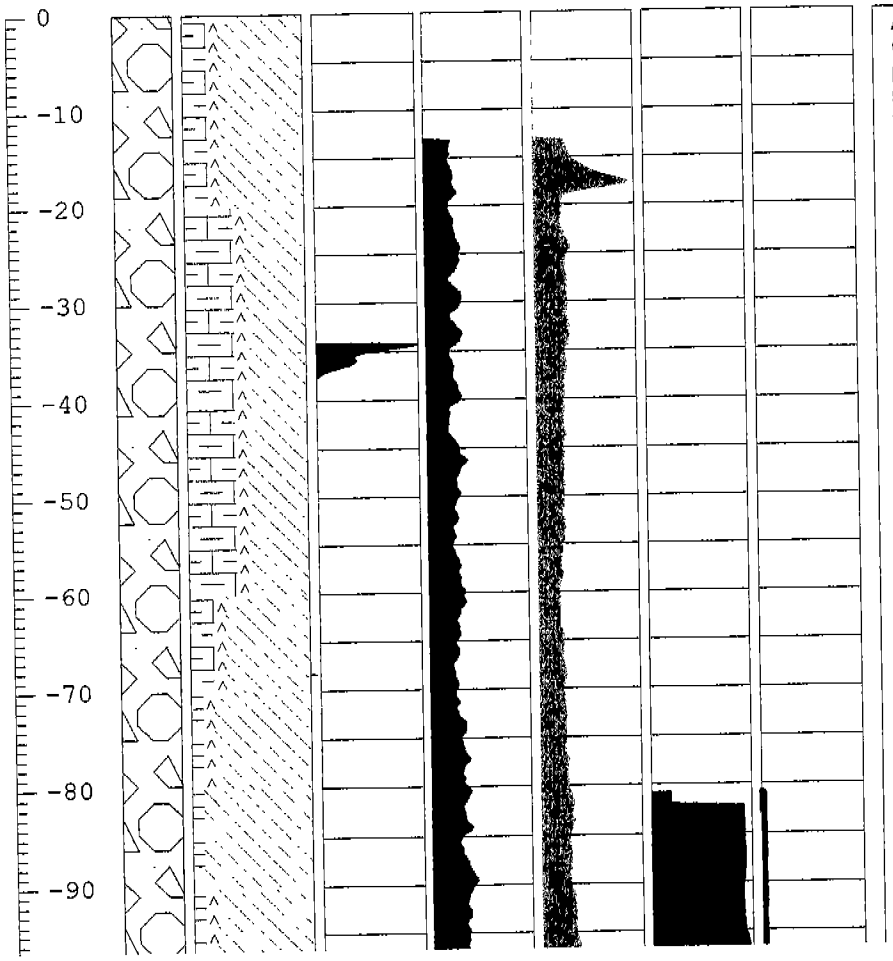
Site I.D: NASA-WSTF Location I.D: WW-2
County and State: Dona Ana County, New Mexico
Site Coordinates: N-231398.12 E-397055.09
Ground Elevation: 4436.45'
Total Depth of Borehole: 1,030'
Depth to Bedrock and Type: Not intercepted.
Depth to Groundwater from Geophysics: 330'
Drilling Method(s): Mud Rotary, reamed 17.5" to 105'. Set 14" OD surface casing to 100'. Drilled 12.25" to 1,030'.
Drilling Contractor: Stewart Brothers Drilling Co.
Geophysical Survey Contractor: Southwest Geophysical, Inc.
ATSC Field Representative(s): M. Canavan, G. Giles, L. Hunnicutt, M. McClure, J. Pearson and M. Rivera.
Dates Drilling Started and Completed: 1/8/99 to 1/21/99.
Comments: Retrofit Westbay well inside 4.5" OD stainless steel casing with four sampling zones. 14" OD surface casing set to 100'. Lithologic samples collected every 10'.

Location Description

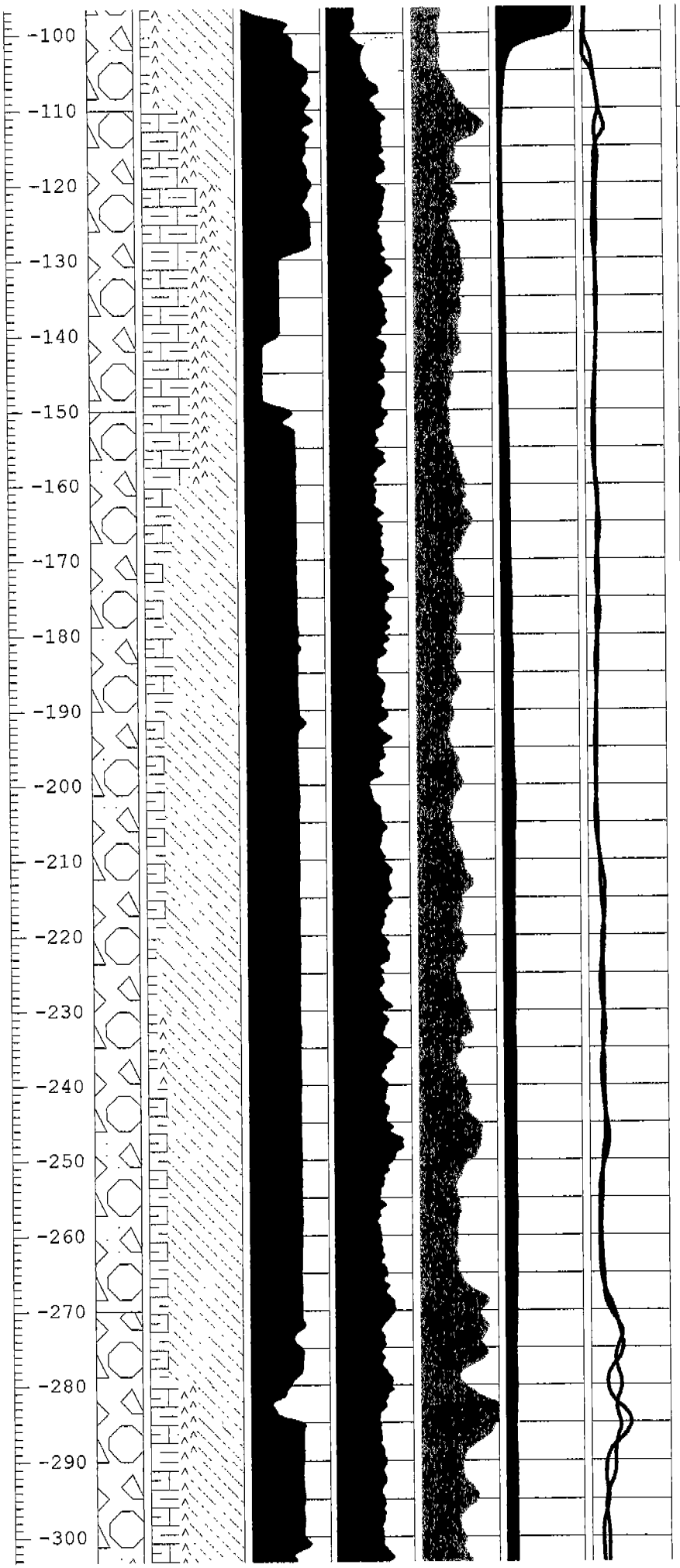
Quarter 1: NW 1/4 Section: 31
Quarter 2: SE 1/4 Township: 20 S
Quarter 3: NE 1/4 Range: 3 E

Location Description: WW-2 is located approximately 4 miles northwest of the WSTF 100 Area and 0.4 miles northeast of the NASA well road.

Depth (Feet)	Lith-ology	Visual Percent	Sonic Porosity (Msec./ft.)	Gamma API	Neutron API	SP (Mili-volts)	Resis-tivity (OHM-M) 64"-green 16"-red	Lithologic Description
		0 100	0 130	0 260	0 950	-70 300	0 120	



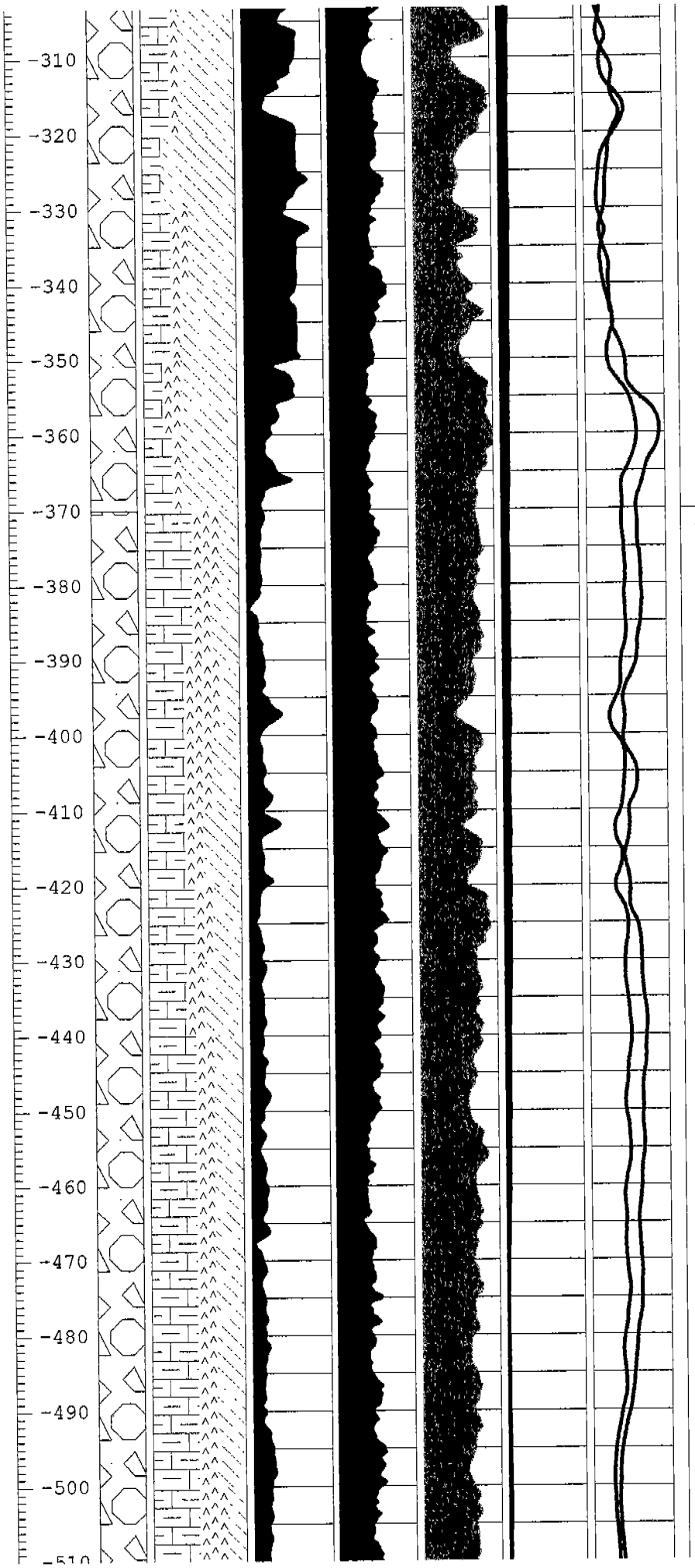
ALLUVIUM: Santa Fe Group (0-1,030 feet): The Santa Fe Group Alluvium is a poorly to moderately sorted polygenetic pebble conglomerate that consists predominantly of limestone and igneous clasts derived from the nearby San Andres Mountains and generally comprise 30-60% of the lithologic samples. The following clast types were observed within the Santa Fe Alluvium: 1) 10-60% limestone clasts that are light gray (N6) to dark gray (N3), micritic, rounded to subangular, and display abundant hairline calcite-filled fractures, 2) 10-60% igneous clasts (both intrusive and extrusive) including moderate reddish brown (10R 4/6) to grayish red (5R 4/2) rhyolite, very light gray (N8) andesite to andesite porphyry, grayish orange (10YR 7/4) to very pale orange (10YR 8/2) rhyolite porphyry, moderate pink (5R 7/4) to grayish orange pink (10R 8/2) granite, grayish red (10R 4/2) to dark reddish brown (10R 3/4) quartzite and very light gray (N8) to medium light gray (N6) vitric lithic tuff, and 3) 10-60% dark reddish brown siltstone and clay. Siltstone and clay layers may be the result of in situ breakdown of volcanic clasts or may represent the muddy distal fan portion of alluvial fans. Note: the percent of volcanic clasts increases with depth.



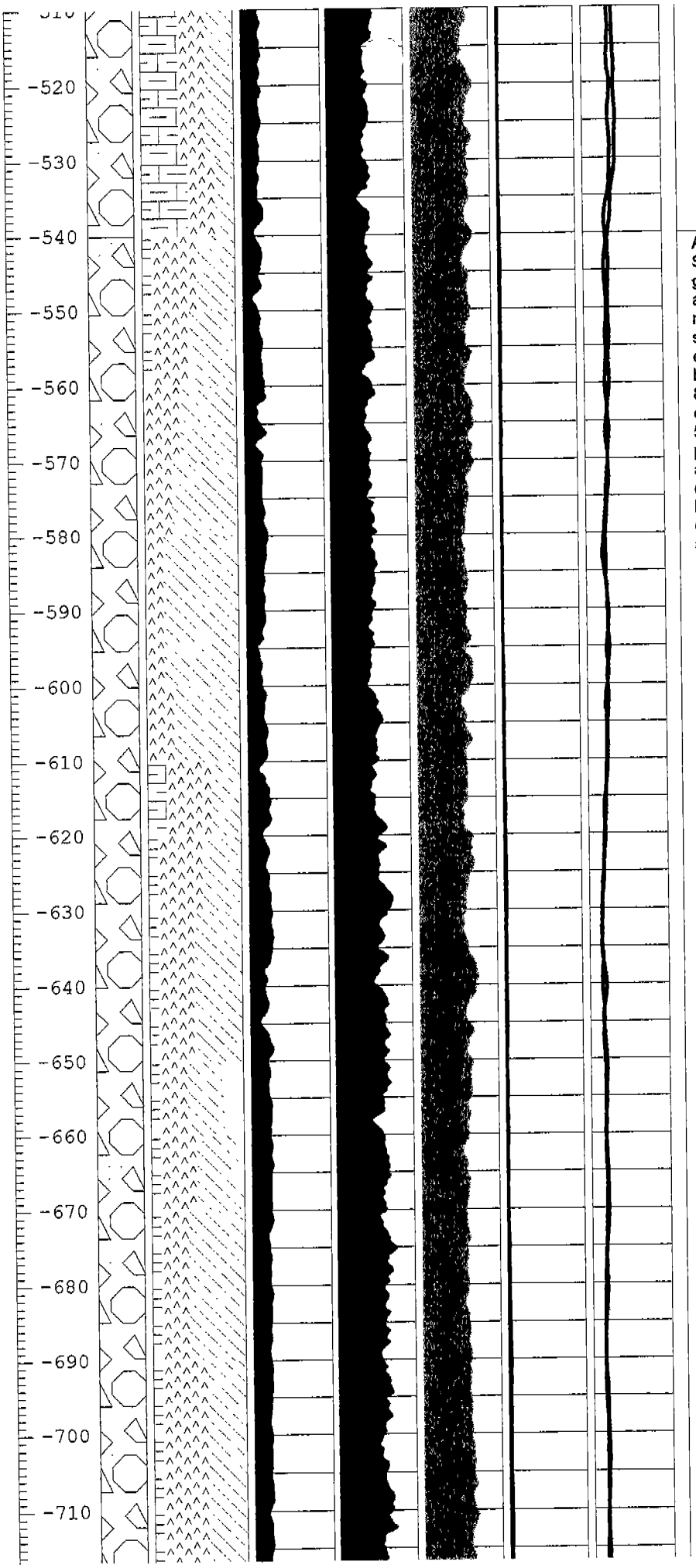
ALLUVIUM: (110-150 feet): Decrease in percent of clay to 10-30%.

ALLUVIUM: (150-270 feet): Increase in clay percent to 70-90%.

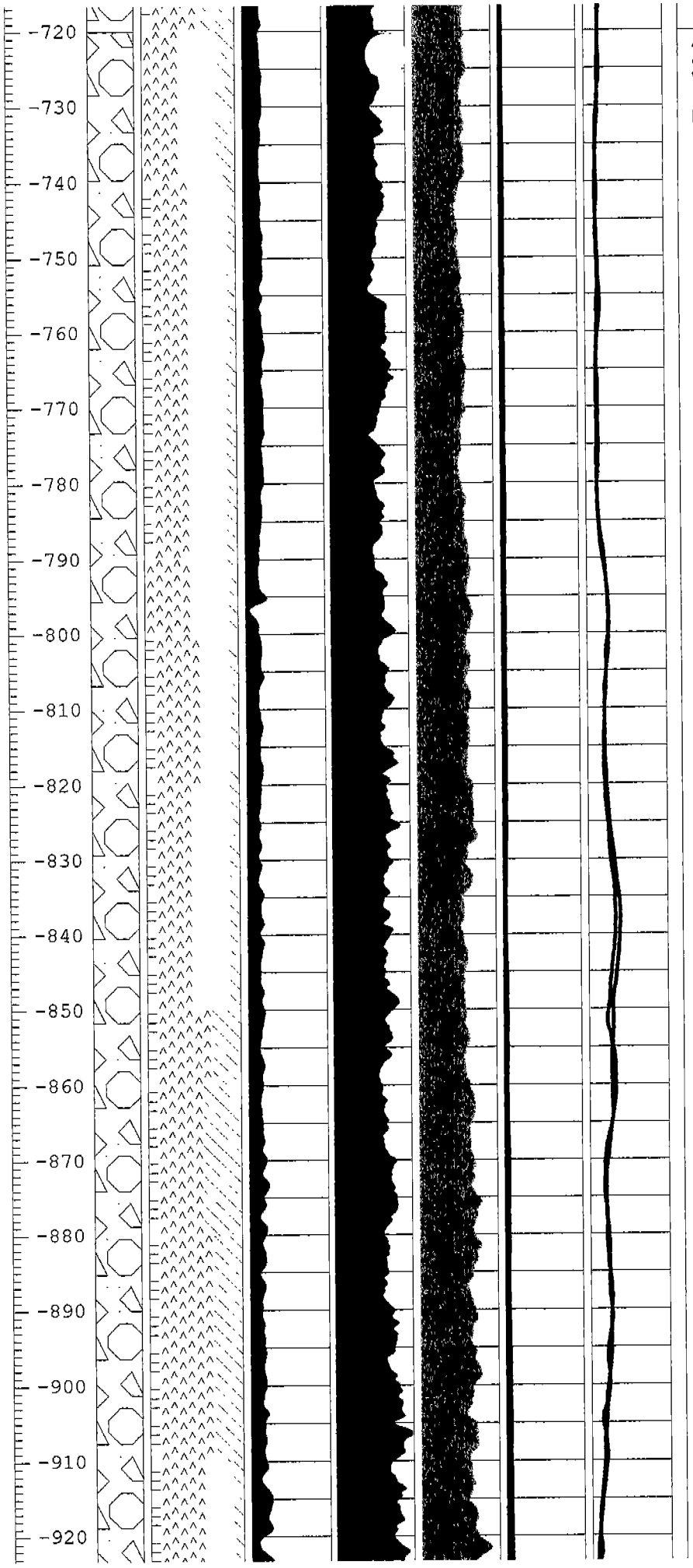
ALLUVIUM: (270-370 feet): Clay decreases to 50-90%.



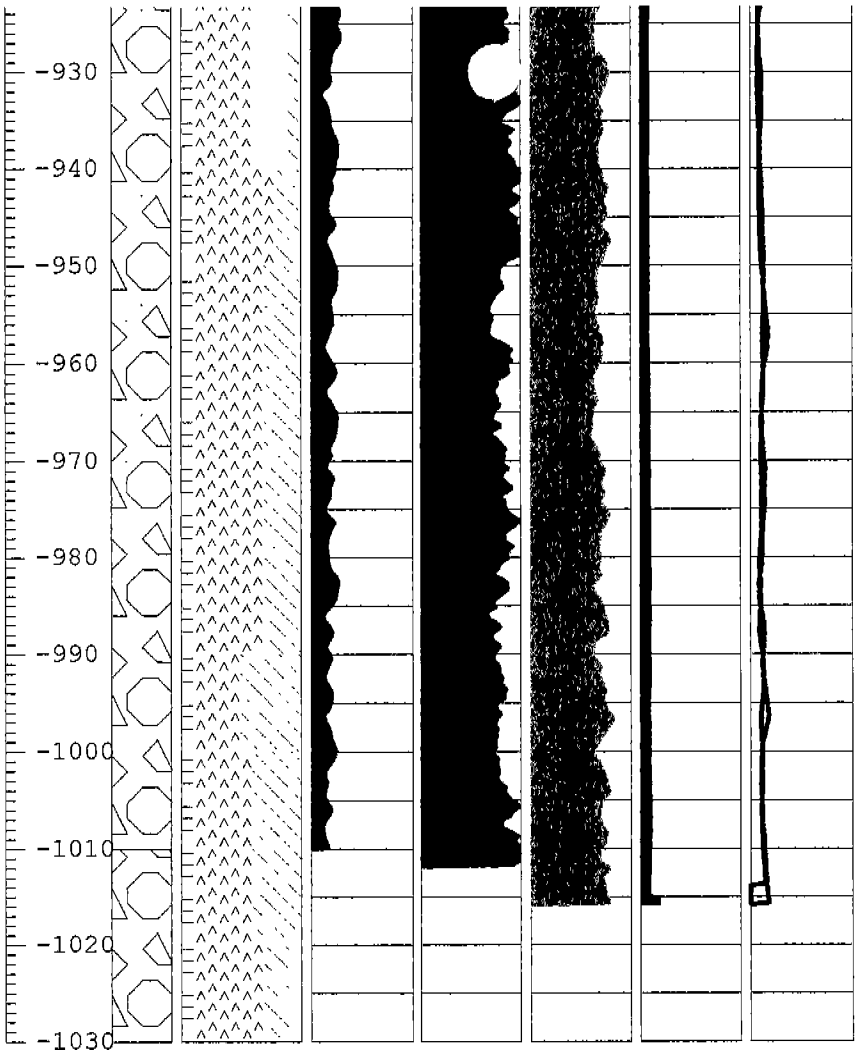
ALLUVIUM: (370-540 feet): Decrease in clay percent to 10-40%; clast supported.



ALLUVIUM: (540-1,030 feet): Volcanic-Rich Alluvium. Samples of the Santa Fe Group Alluvium consist of sand to gravel-sized clasts of volcanic and intrusive igneous rocks and limestone within a (20-80%) matrix of moderate reddish brown (10R 4/6) clay and silt derived from the in situ breakdown of volcanic clasts. The clay forms mm to cm-sized nodules that make the overall sample color pale brown (5YR 5/2) when wet and very pale orange (6YR 8/2) to yellowish gray (5Y 8/1) when dry. Volcanic grains consist of very pale orange (6YR 8/2) light brown (5YR 5/6) to moderate red brown (10YR 4/6) rhyolite to rhyolite porphyry, very light gray (N8) to medium gray (N5) andesite, moderate pink (5R 7/4) to grayish orange pink (10R 8/2) granite, grayish red (10R 4/2) to dark reddish brown (10R 3/4) quartzite, and white (N9) to light gray (N7) crystal lithic tuffs. Quartz feldspar sands and mafic alteration products are also present in minor amounts. Limestone clasts are dark gray (N6) and argillaceous.



ALLUVIUM (1,010 feet): Clay occurs as 0.6-2.5 cm diameter no s. Nodules comprise ~40% of the sample. Volcanic clasts comprise 30-50% of the lithologic samples. Clay nodules are grayish orange pink (5YR 7/2) to pale brown (5YR 5/2).



ALLUVIUM: (1,010-1,030 feet): Clay decreases to 20%. Alluvium is clast supported and volcanic-rich. Overall sample color is grayish red purple (5RP 4/2).