



Las Vegas Valley Water District  
Exploration Well 78E  
Borehole Lithology

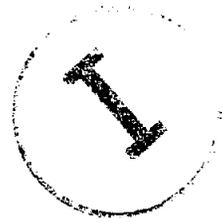
Lithologic Summary



Depth (feet below land surface)	Lithologic Description
0-9	Gravelly sand with silt (SW). Olive gray to light gray to light brown, well graded, weak consolidation, subround to round, no plasticity, no to strong acid reaction. Coarse fraction 40%. Fine fraction 60%.
10-69	Sandy gravel with a trace of silt (GW). Olive gray to light gray to brown, well graded, moderate consolidation, subround to subangular, no to low plasticity, no to strong acid reaction. Coarse fraction 80%. Fine fraction 20%.
70-213	Gravel and sand with silt (GM). Medium gray to pinkish gray to dark gray, poor to moderate grading, weak to moderate to strong consolidation, subangular to subround, no plasticity, weak to moderate acid reaction. Coarse fraction 70% to 80%. Fine fraction 20% to 30%.
214-521	Sandy gravel with minor traces of clay (GW). White to light gray to gray to olive gray to greenish gray to dark gray, moderate to well graded, weak to moderate consolidation, subangular to subround, weak to medium plasticity, no to moderate acid reaction. Coarse fraction 60% to 75%. Fine fraction 25% to 40%. Sandy clay (10%) with medium plasticity from 400 feet to 419 feet, a moderate plasticity clay (2%) from 497 feet to 506 feet, and a brown sticky high plasticity clay (5%) from 507 feet to 508 feet.
522-584	Sandy Gravel (GW). Light gray to gray to light brown, well graded, weak consolidation, subround with trace subangular, no plasticity, weak to moderate acid reaction. Coarse fraction 70%. Fine fraction 30%.
585-602	Gravel and sand (GW and SP). Light gray, olive gray, yellow orange, grayish orange pink, poor to well graded, weak consolidation, subround to subangular, no plasticity, no to weak acid reaction. Coarse fraction 50%. Fine fraction 50%. Sandstone lenses one foot thick at 593 feet and 601 feet. Lenses are yellow orange and red, poorly cemented, poorly graded, fine grained quartz arenite.

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603-908	Sandy gravel with minor traces of clay and sand lenses (GW). Light gray to gray to olive gray to greenish gray to dark gray to black to red, moderate to well graded, weak consolidation, round to angular, no plasticity, no to moderate acid reaction. Coarse fraction 60% to 80%. Fine fraction 20% to 40%. Trace of thin sand lens at the following depths (in feet): 653, 654, 656, 659, 660, 686, 687, 700, 762, and 800.
909-945	Sand (SP). Reddish tan to tan, poor grading, no to weak consolidation, subround to round, no plasticity, weak to strong acid reaction. Coarse fraction 1%. Fine fraction 99% fine grain quartz with carbonate cementation.
946-1,184	Sandstone (SP), presumed Aztec Sandstone. Red to buff red, poor grading, weak to moderate to strong consolidation, subround to round, no plasticity, weak to strong acid reaction. Coarse fraction 0%. Fine fraction 100%: 95% fine to medium grain and 5% coarse grain quartz. Rock type: quartz arenite. Trace of clay for one foot at 1,170 feet.
1,185-1,189	Sand with clay (SP and SC), presumed Aztec Sandstone. Red to buff red, moderate grading, weak consolidation, subround to round, medium plasticity, weak to strong acid reaction. Coarse fraction 0%. Fine fraction 100%: 70% fine grain, 10% medium grain, and 10% coarse grain quartz. Ten (10) percent of total is an orange pink medium plasticity clay. Clay possible fracture fill (?).
1,190-1,646	Sandstone (SP), presumed Aztec Sandstone. Red to buff red to red-brown with a trace of white and pink, poor grading, moderate to strong consolidation, subround to round, no plasticity, weak to strong acid reaction. Coarse fraction 0%. Fine fraction 100%: 95% fine grain and 5% medium grain quartz. Rock type: quartz arenite. Traces of pinkish tan, high plasticity clay from 1,346 feet to 1,436 feet.
1,647-1,799	Silty sand (SM), presumed Aztec Sandstone. Reddish brown with trace of white and gray, moderate grading, strong consolidation, subround, no plasticity, weak acid reaction. Coarse fraction: trace. Fine fraction 100%: 10% silt, 80% fine grain, and 10% medium grain quartz.

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1,800-1,950	Sandstone (SP), presumed Aztec Sandstone. Reddish brown with trace of pinkish tan and tan, poor grading, weak to moderate consolidation, subround to round, no plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: 90% fine grain and 10% medium grain quartz. Rock type: quartz arenite. Traces of pinkish tan to buff tan indurated interbedded siltstone.
1,951-2,033	Silty sand (SM), presumed Aztec Sandstone. Reddish brown with a trace of pinkish tan, moderate grading, strong consolidation, subround, no plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: 20% silt, 60% fine grain, and 20% medium grain quartz. Traces of high plasticity sandy clay.
2,034-2,129	Sandstone (SP), presumed Aztec Sandstone. Reddish brown with trace of pinkish tan and orange tan, poor to moderate grading, moderate to strong consolidation, subround, no plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: 1% - 5% silt, 60% to 90% fine grain, and 10% to 35% medium grain quartz sand.
2,130-2,232	Sandstone and silty clay (SC), presumed Aztec Sandstone. Reddish brown to pinkish tan to tan, poor to moderate grading, moderate to strong consolidation, subround, medium plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: 10% to 50% silty clay, 50% to 95% fine grain, and 5% to 10% medium grain quartz sand. Fifty (50) percent silty clay from 2,130 feet to 2,139 feet.
2,233-2,248	Sandstone (SP), presumed Aztec Sandstone. Pale reddish brown, moderate grading, strong consolidation, subround to round, no plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: trace of silt, 5% very fine grain, 70% fine grain, 25% medium grain, and a trace of coarse quartz sand.
2,249-2,414	Silty sand (SM), presumed Aztec Sandstone. Light brown, moderate grading, moderate consolidation, subround, no plasticity, weak acid reaction. Coarse fraction 0%. Fine fraction 100%: none to 10% silt, 5% to 10% very fine grain, 60 to 90% fine grain, 20% to 30% medium grain, and a trace to 10% coarse quartz sand. No silt from 2,330 feet to 2,243 feet.

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Depth  
(feet below  
land surface)

Lithologic Description

2,415-2,513.5

Sandstone (SP), presumed Aztec Sandstone. Pale red to pinkish tan, poor to moderate grading, weak to moderate consolidation, subround, no plasticity, no to weak acid reaction. Coarse fraction 0%. Fine fraction 100%: 60% to 90% fine grain, 5% to 10% medium grain. Gypsum cuttings comprising 30% of the sample from 2,460 feet to 2,468 feet and 2,482 feet to 2,491 feet. Two (2) percent gypsum cuttings from 2,468 feet to 2482 feet and 2,491 feet to 2,513.50 feet (total depth).

2,513.50  
TOTAL DEPTH

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