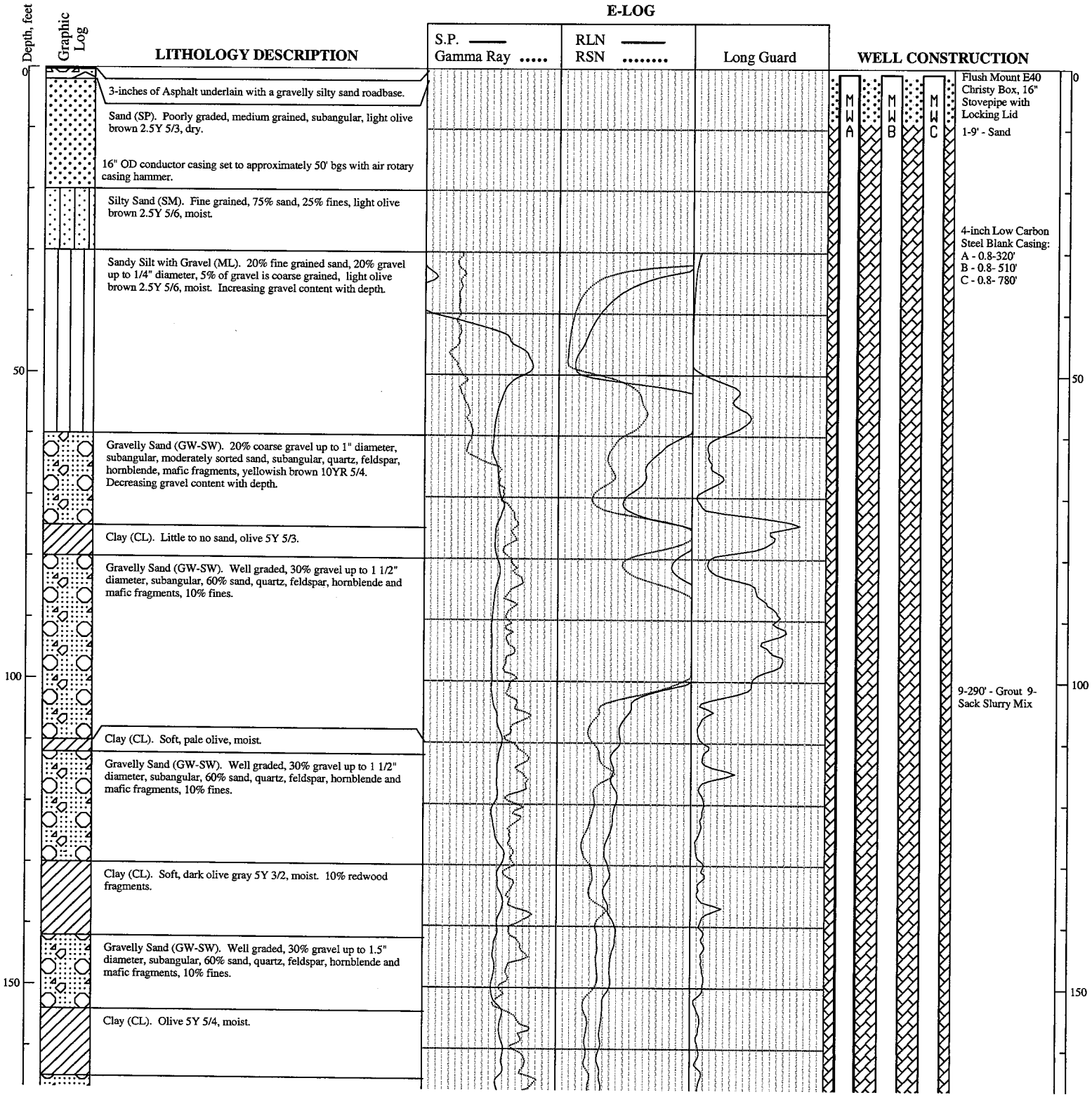
Project: Muscoy RA

Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-137A, MW-137B, MW-137C

Dates Drilled: 2/4/02 - 2/13/02	Total Depth Drilled: 912 feet	Logged By: V. Elarth, P. Crispell
Drilling Contractor: Water Development Corp	Borehole Diameter: 14 1/2-inch	Checked By: DLB
Drill Rig Type Dresser T70W	Well Construction Dates: 2/14/02 - 2/20/02	Screen Slot Size: 0.020-inch
Drilling Method: Reverse Circulation Mud Rotary	Well Diameter: 4-inch	
Drill Bit: 10 5/8 and 14 1/2-inch Mill Bit	Well Casing: Low Carbon and Stainless Steel	
Comments:		



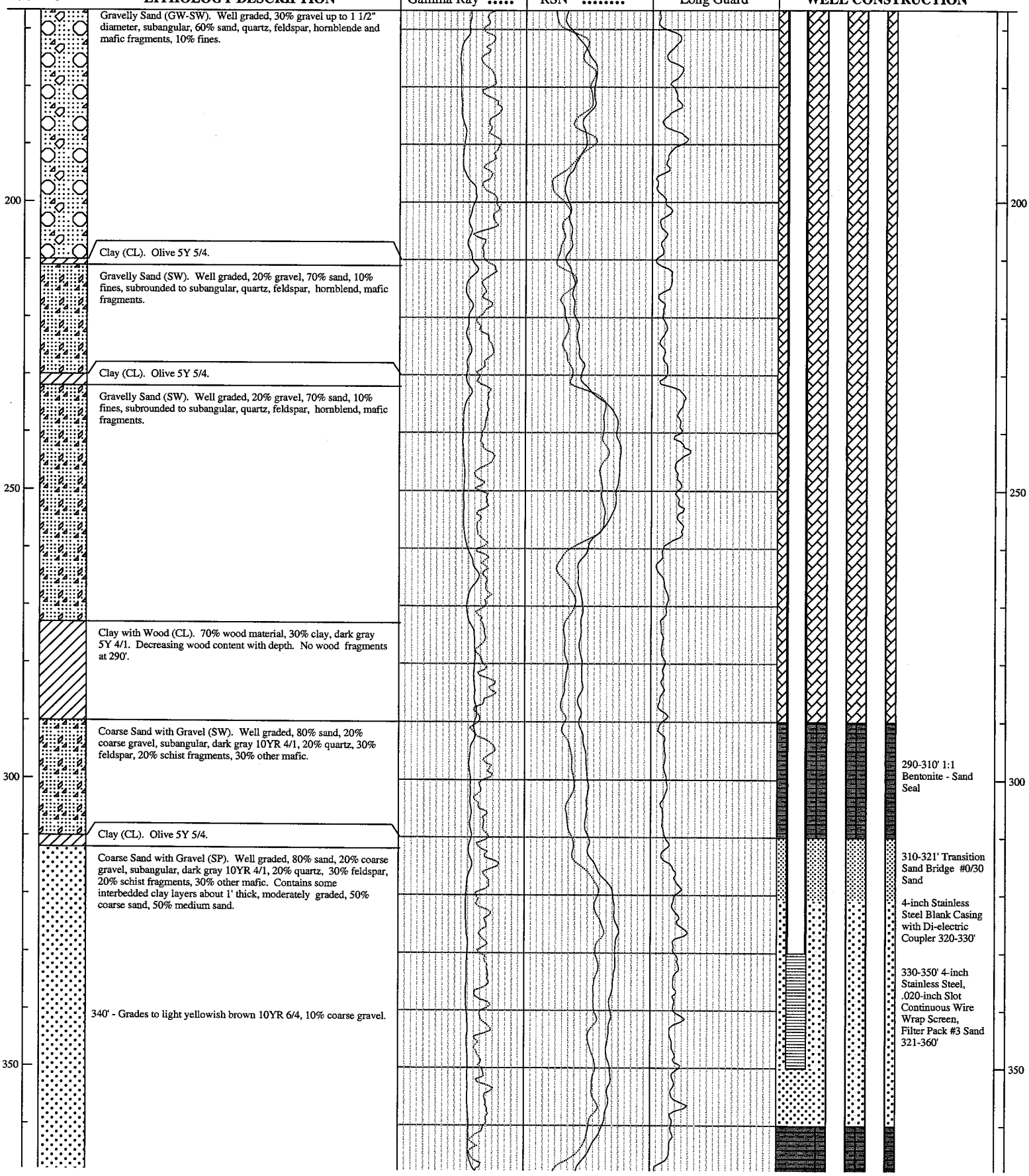
URS
2870 Gateway Oaks Dr., Ste 300
Sacramento, CA 95833
916-679-2000

Project: Muscoy RA

Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-137A, MW-137B, MW-137C

Depth, feet | Graphic Log | LITHOLOGY DESCRIPTION | E-LOG | WELL CONSTRUCTION



Gravelly Sand (GW-SW). Well graded, 30% gravel up to 1 1/2" diameter, subangular, 60% sand, quartz, feldspar, hornblende and mafic fragments, 10% fines.

Clay (CL). Olive 5Y 5/4.

Gravelly Sand (SW). Well graded, 20% gravel, 70% sand, 10% fines, subrounded to subangular, quartz, feldspar, hornblend, mafic fragments.

Clay (CL). Olive 5Y 5/4.

Gravelly Sand (SW). Well graded, 20% gravel, 70% sand, 10% fines, subrounded to subangular, quartz, feldspar, hornblend, mafic fragments.

Clay with Wood (CL). 70% wood material, 30% clay, dark gray 5Y 4/1. Decreasing wood content with depth. No wood fragments at 290'.

Coarse Sand with Gravel (SW). Well graded, 80% sand, 20% coarse gravel, subangular, dark gray 10YR 4/1, 20% quartz, 30% feldspar, 20% schist fragments, 30% other mafic.

Clay (CL). Olive 5Y 5/4.

Coarse Sand with Gravel (SP). Well graded, 80% sand, 20% coarse gravel, subangular, dark gray 10YR 4/1, 20% quartz, 30% feldspar, 20% schist fragments, 30% other mafic. Contains some interbedded clay layers about 1' thick, moderately graded, 50% coarse sand, 50% medium sand.

340' - Grades to light yellowish brown 10YR 6/4, 10% coarse gravel.

URS
2870 Gateway Oaks Dr., Ste 300
Sacramento, CA 95833
916-679-2000

Project: Muscoy RA

Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-137A, MW-137B, MW-137C

Depth, feet | Graphic Log | LITHOLOGY DESCRIPTION | E-LOG | WELL CONSTRUCTION

E-LOG: S.P. ——— Gamma Ray ..... | RLN ——— RSN ..... | Long Guard

380' - Reduction in gravel content to 5%.

Clay (CL). Gray 5Y 5/1.

Sandy Clay (CL). 30% coarse, subangular sand, light olive brown 2.5Y 5/3.

Coarse Sand with 5% Gravel (SP). Well graded, 95% sand, 5% coarse gravel, subangular, dark gray 10YR 4/1, 20% quartz, 25% feldspar, 25% schist fragments, 30% other mafic.

Clay (CL). Gray 5Y 5/1.

Coarse Sand with 5% Gravel (SP). Poorly graded, subangular, olive yellow 5Y 6/6, some small clay layers .25' thick interbedded, 50% quartz, 20% feldspar, 10% hornblend, 20% mafic fragments, gravel up to 1/2" diameter.

Clay (CL). Gray 5Y 5/1.

Coarse Sand with 5% Gravel (SP). Poorly graded, subangular, olive yellow 5Y 6/6, some small clay layers .25' thick interbedded, 50% quartz, 20% feldspar, 10% hornblende, 20% mafic fragments, gravel up to 1/2" diameter.

Clay with Sand (CL). 5% fine to medium grained, subangular sand, very firm, black 5Y 2.5/2.

Coarse Sand with 5% Gravel (SP). Poorly graded, subangular, olive yellow 5Y 6/6, some small clay layers .25' thick interbedded, 50% quartz, 20% feldspar, 10% hornblende, 20% mafic fragments, gravel up to 1/2" diameter.

WELL CONSTRUCTION:

360-376' 1:1 Bentonite - Sand Seal

376-489' - Grout 9-Sack Slurry Mix

489-504.5' 1:1 Bentonite - Sand Seal

504.5-509' Transition Sand Bridge #0/30 Sand

4-inch Stainless Steel Blank Casing with Di-electric Coupler 510-520'

520-540' 4-inch Stainless Steel, .020-inch Slot Continuous Wire Wrap Screen, Filter Pack #3 Sand 509-551'

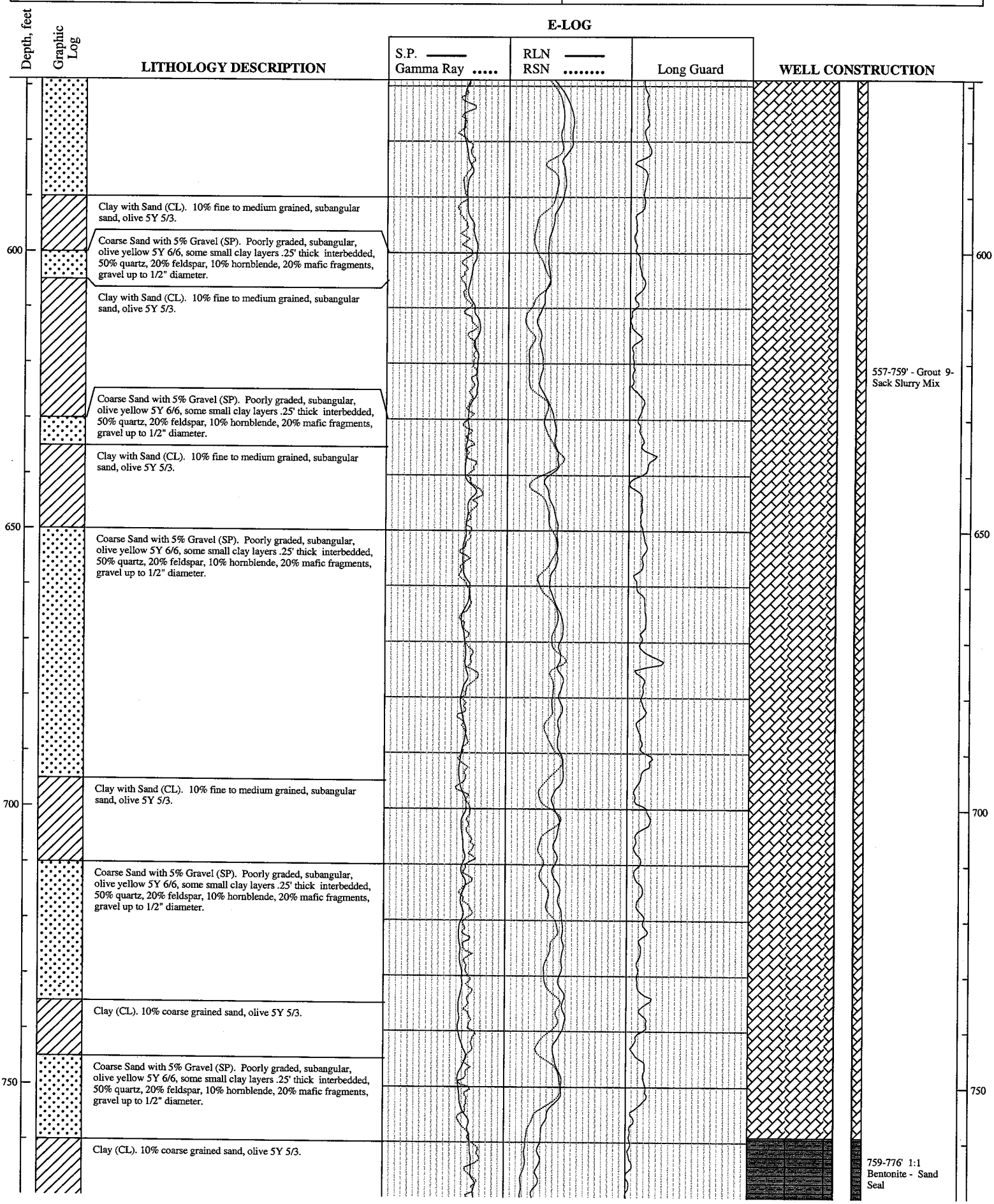
551-557' 1:1 Bentonite - Sand Seal

URS
2870 Gateway Oaks Dr., Ste 300
Sacramento, CA 95833
916-679-2000

Project: Muscoy RA

Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-137A, MW-137B, MW-137C

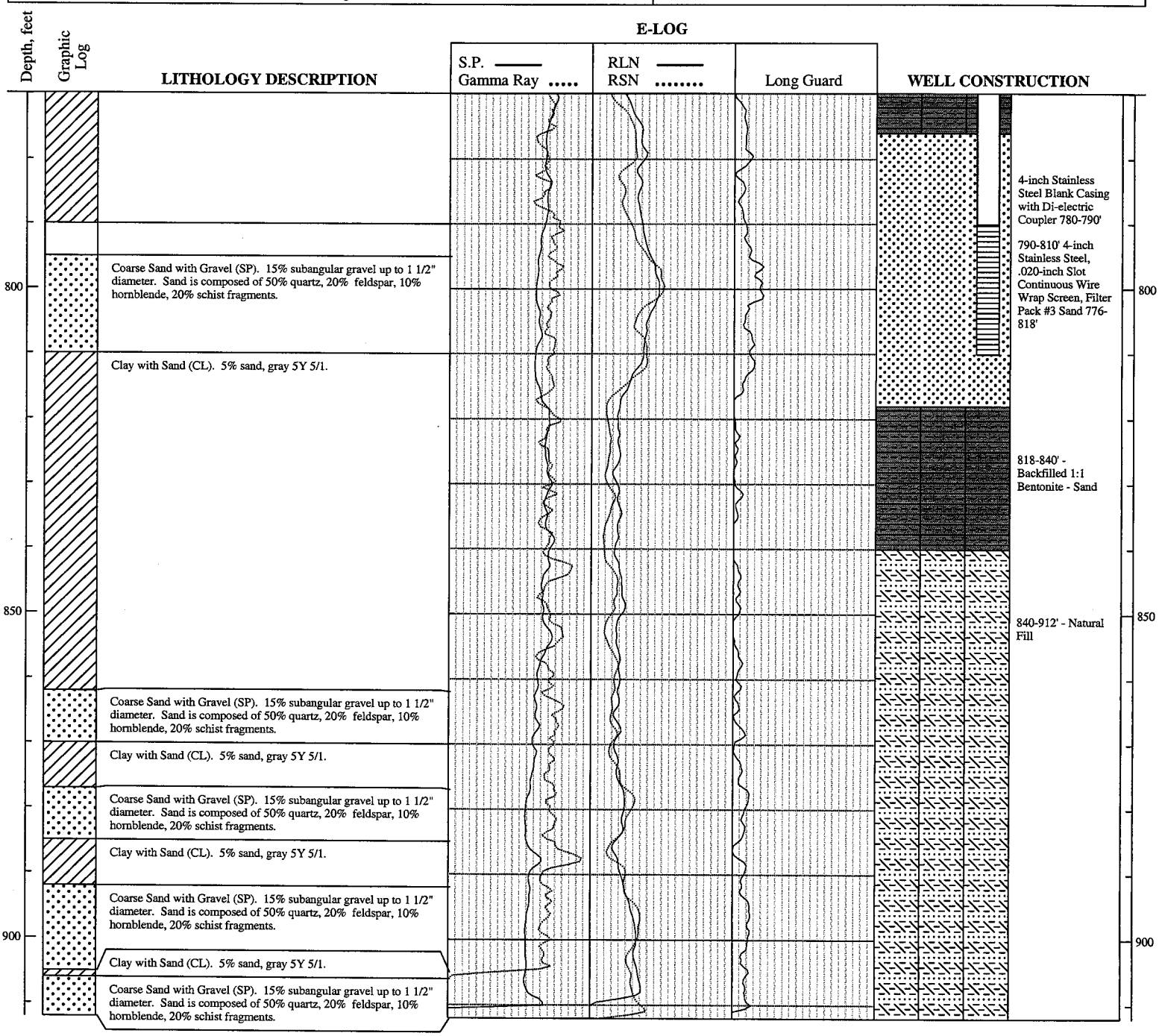


URS
2870 Gateway Oaks Dr., Ste 300
Sacramento, CA 95833
916-679-2000

Project: Muscoy RA

Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-137A, MW-137B, MW-137C



URS
2870 Gateway Oaks Dr., Ste 300
Sacramento, CA 95833
916-679-2000