Project: Muscoy RA

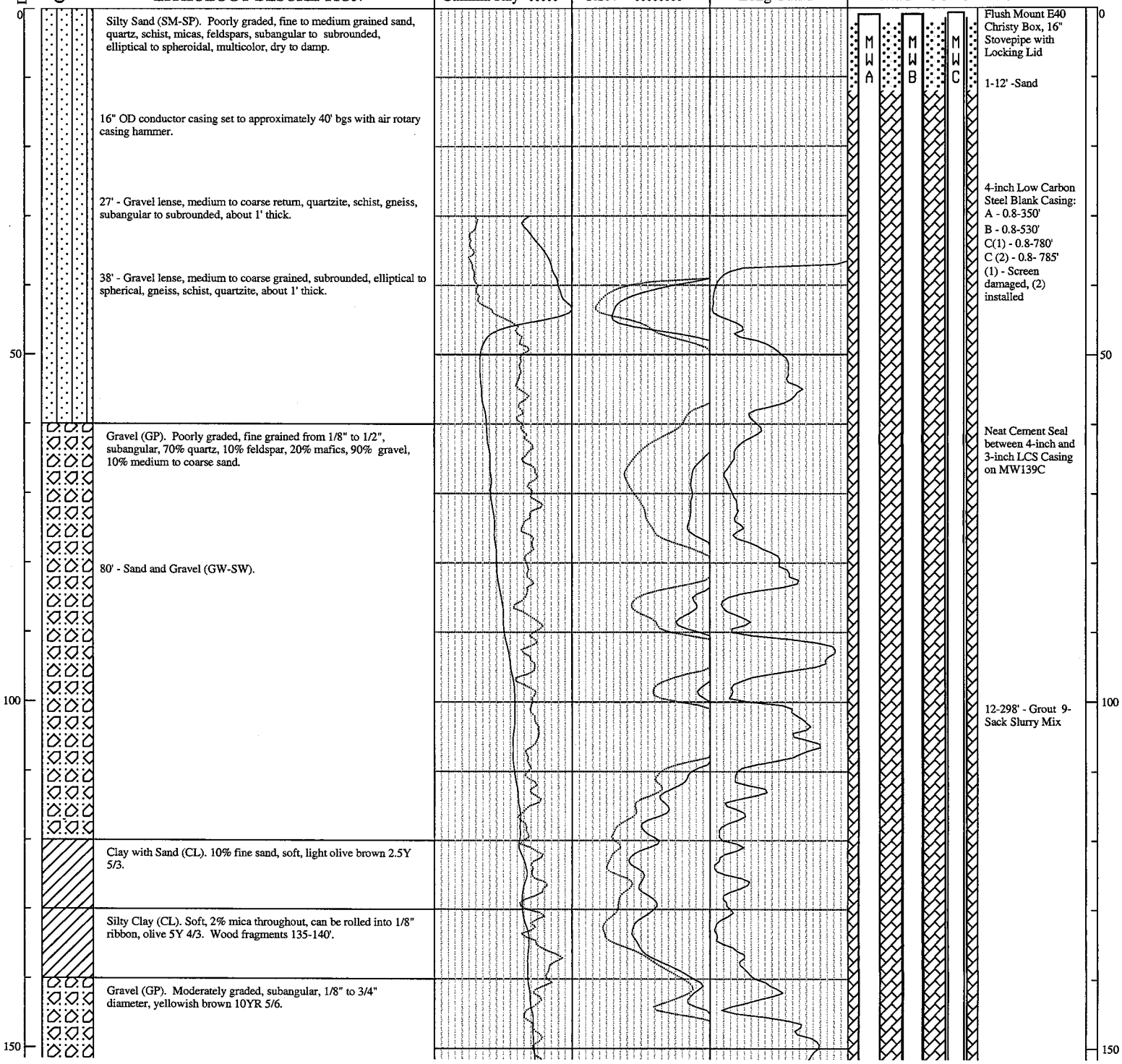
Location: San Bernardino, CA **Project Number: 18600069.06010**

Log of Monitoring Wells: MW-139A, MW-139B, MW-139C

Dates Drilled: 3/26/02 - 4/4/02	Total Depth Drilled: 855 feet	Logged By: T. Gere, P. Crispell, V. Elarth
Drilling Contractor: Water Development	Borehole Diameter: 14 1/2-inch	Checked By:
Drill Rig Type Dresser T70W	Well Construction Dates: 4/7/02 - 4/9/02	Screen Slot Size: A&B- 0.020-inch; C- 0.010-inch
Drilling Method: Reverse Circulation Mud Rotary	Well Diameter: A & B- 4-inch; C- 3-inch	
Drill Bit: 10 5/8 and 14 1/2-inch Mill Bit	Well Casing: Low Carbon and Stainless Steel	

Comments: MW-139C was reconstructed on 5/30 due to a torn screen.

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



LITHOLOGY DESCRIPTION

Silty Sand (SM-SP). Poorly graded, fine to medium grained sand, quartz, schist, micas, feldspars, subangular to subrounded, elliptical to spheroidal, multicolor, dry to damp.

16" OD conductor casing set to approximately 40' bgs with air rotary casing hammer.

27' - Gravel lense, medium to coarse return, quartzite, schist, gneiss, subangular to subrounded, about 1' thick.

38' - Gravel lense, medium to coarse grained, subrounded, elliptical to spherical, gneiss, schist, quartzite, about 1' thick.

Gravel (GP). Poorly graded, fine grained from 1/8" to 1/2", subangular, 70% quartz, 10% feldspar, 20% mafics, 90% gravel, 10% medium to coarse sand.

80' - Sand and Gravel (GW-SW).

Clay with Sand (CL). 10% fine sand, soft, light olive brown 2.5Y 5/3.

Silty Clay (CL). Soft, 2% mica throughout, can be rolled into 1/8" ribbon, olive 5Y 4/3. Wood fragments 135-140'.

Gravel (GP). Moderately graded, subangular, 1/8" to 3/4" diameter, yellowish brown 10YR 5/6.

WELL CONSTRUCTION

Flush Mount E40 Christy Box, 16" Stovepipe with Locking Lid

1-12' -Sand

4-inch Low Carbon Steel Blank Casing:
A - 0.8-350'
B - 0.8-530'
C(1) - 0.8-780'
C (2) - 0.8- 785'
(1) - Screen damaged, (2) installed

Neat Cement Seal between 4-inch and 3-inch LCS Casing on MW139C

12-298' - Grout 9-Sack Slurry Mix

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916-679-2000

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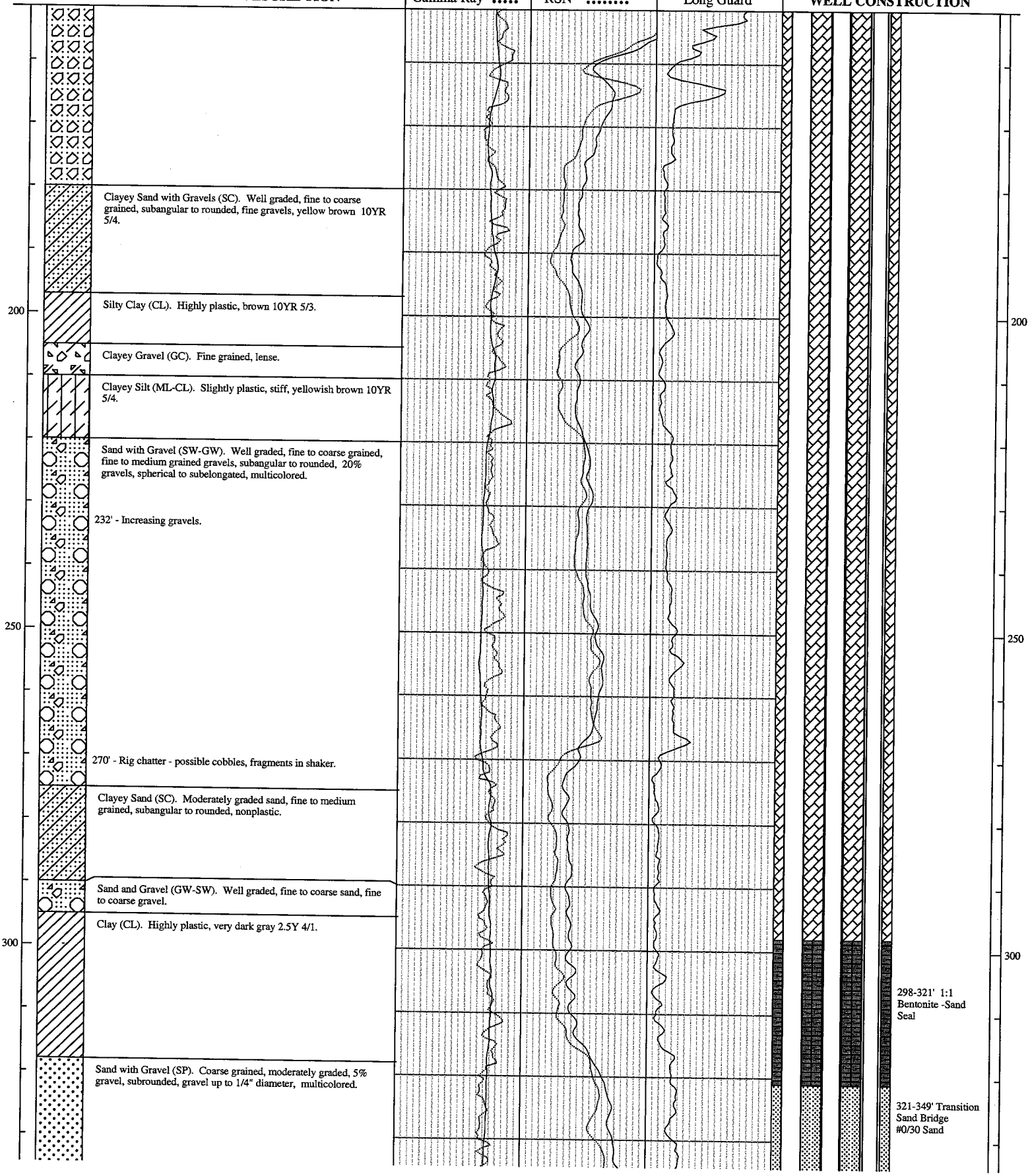
Depth, feet | Graphic Log | LITHOLOGY DESCRIPTION | E-LOG | WELL CONSTRUCTION

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



Clayey Sand with Gravels (SC). Well graded, fine to coarse grained, subangular to rounded, fine gravels, yellow brown 10YR 5/4.

Silty Clay (CL). Highly plastic, brown 10YR 5/3.

Clayey Gravel (GC). Fine grained, lense.

Clayey Silt (ML-CL). Slightly plastic, stiff, yellowish brown 10YR 5/4.

Sand with Gravel (SW-GW). Well graded, fine to coarse grained, fine to medium grained gravels, subangular to rounded, 20% gravels, spherical to subelongated, multicolored.

232' - Increasing gravels.

270' - Rig chatter - possible cobbles, fragments in shaker.

Clayey Sand (SC). Moderately graded sand, fine to medium grained, subangular to rounded, nonplastic.

Sand and Gravel (GW-SW). Well graded, fine to coarse sand, fine to coarse gravel.

Clay (CL). Highly plastic, very dark gray 2.5Y 4/1.

Sand with Gravel (SP). Coarse grained, moderately graded, 5% gravel, subrounded, gravel up to 1/4" diameter, multicolored.

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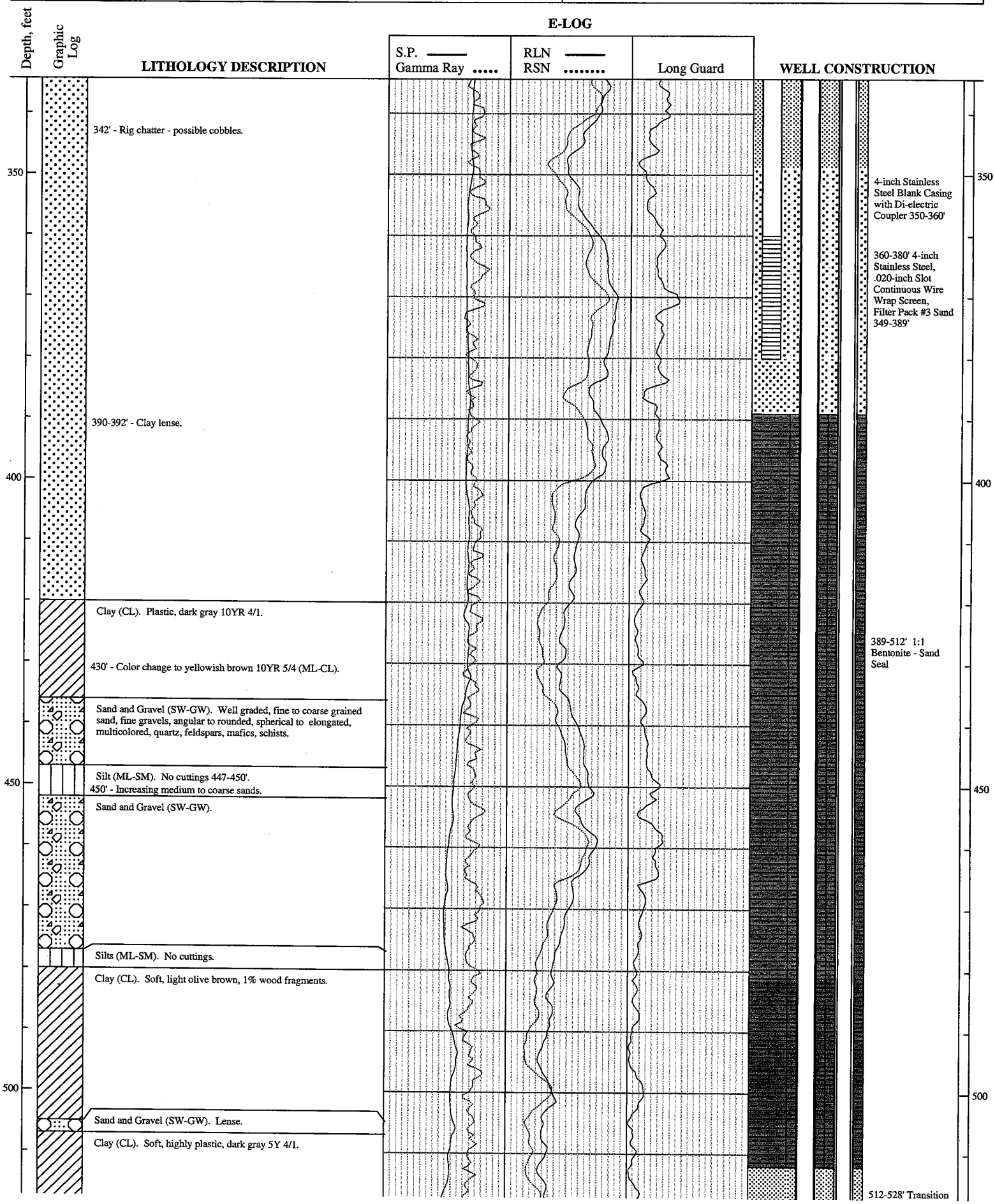

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Depth, feet | Graphic Log | LITHOLOGY DESCRIPTION | E-LOG (S.P. / Gamma Ray; RLN / RSN; Long Guard) | WELL CONSTRUCTION

550

Sand and Gravel (GP). Poorly graded.

Clay (CL). Soft, highly plastic, dark gray 5Y 4/1.

Sand with Gravel (SW-GW). Poorly graded, coarse grained, 5% gravel up to 1/2" diameter, subangular, olive 5Y 5/3.

Clay (CL).

Sandy Clay (SC). Slightly plastic, fine to medium grained, coating micaceous, silty clay inside, very dark gray 7.5Y 3/1.

Sand lense (SP).

600

Clay (CL). Stiff, highly plastic, dark gray 2.5Y 4/1, dry to moist. Intermixed lenses (1-2') of sands and clay from 575-612'.

Sand (SW). Well graded, fine to coarse grained.

Clay (CL).

Sand (SW).

Clay (CL).

650

Sand (SP). Poorly graded, fine to medium grained.

Clay (CL). Lense.

Sand (SW). Lense.

Clayey Silt (ML-CL). Slightly plastic, medium stiff, yellowish brown 10YR 5/4.

Sand (SP). Poorly graded.

Sand (SW). Increasing coarseness.

Silty Sand (SM-SP). Decreasing grain size and amount of cuttings with depth.

Sand Bridge #0/30 Sand

4-inch Stainless Steel Blank Casing with Di-electric Coupler 530-540'

540-560' 4-inch Stainless Steel, .020-inch Slot Continuous Wire Wrap Screen, Filter Pack #3 Sand 528-570'

570-575' 1:1 Bentonite - Sand Seal

575-760' - Grout 9-Sack Slurry Mix

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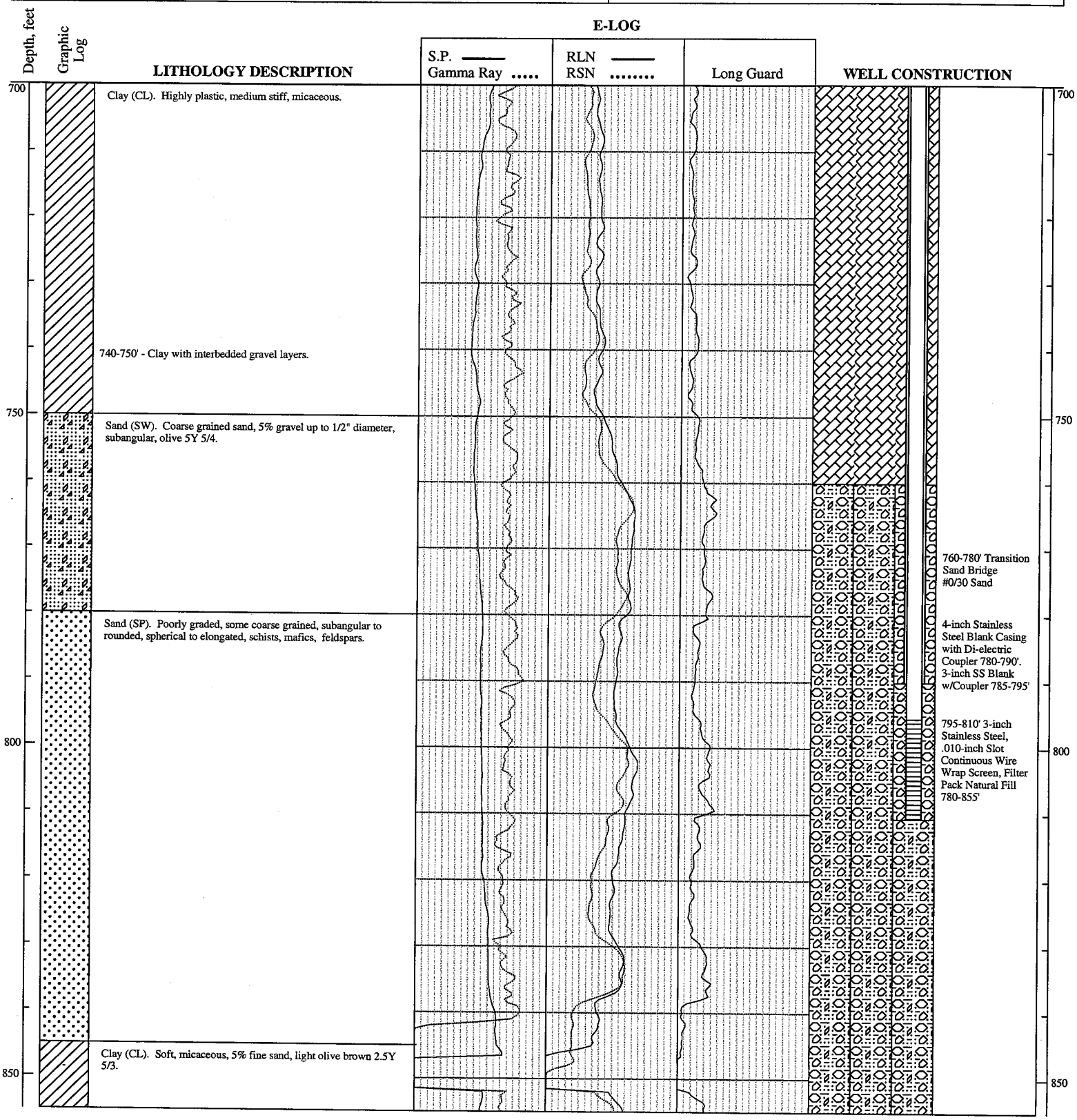

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