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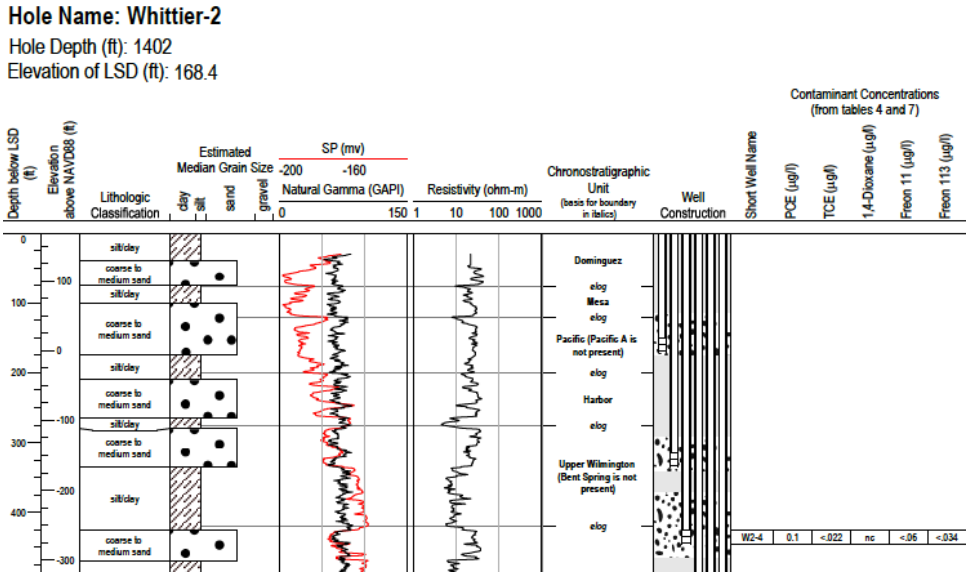
Interpretive Borehole Logs for Holes Located Along the Study Cross Section or Used for Stratigraphic Control, Central Basin Groundwater Contamination Study, Los Angeles County, California

By Daniel J. Ponti, Brian J. Wagner, Michael Land, and Matthew K. Landon



Open-File Report 2014–1087, Appendix A

U.S. Department of the Interior
U.S. Geological Survey

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Introduction

The following pages contain logs of geological and geophysical data compiled from information obtained on boreholes drilled within the Santa Fe Springs–Whittier–Norwalk area. The logs were used to constrain the stratigraphic model developed for this study, and (or) displayed on the study cross section (pl. 1). More information about the borehole sites and well construction can be found in table 1; contaminant data summarized in the logs are further detailed in tables 4 and 7. The logs are listed in order from north to south.

The lithologic classifications and estimated median grain sizes shown here were interpreted from original borehole log descriptions obtained from the reporting agencies shown on table 1. Most of these logs are in the public domain (Ferguson and others, 1996; EPA, 2010; Regional Water Quality Control Board, 2011; CH2M HILL, 2012), but others have not been publicly released or are proprietary. For logs that use the Unified Soil Classification System (USCS) for soil descriptions (ASTM, 1985), the classifications follow the USCS group names reported directly in the original logs or inferred from the descriptions provided. For boreholes that describe materials in other ways, log descriptions are divided into the following 5-class system

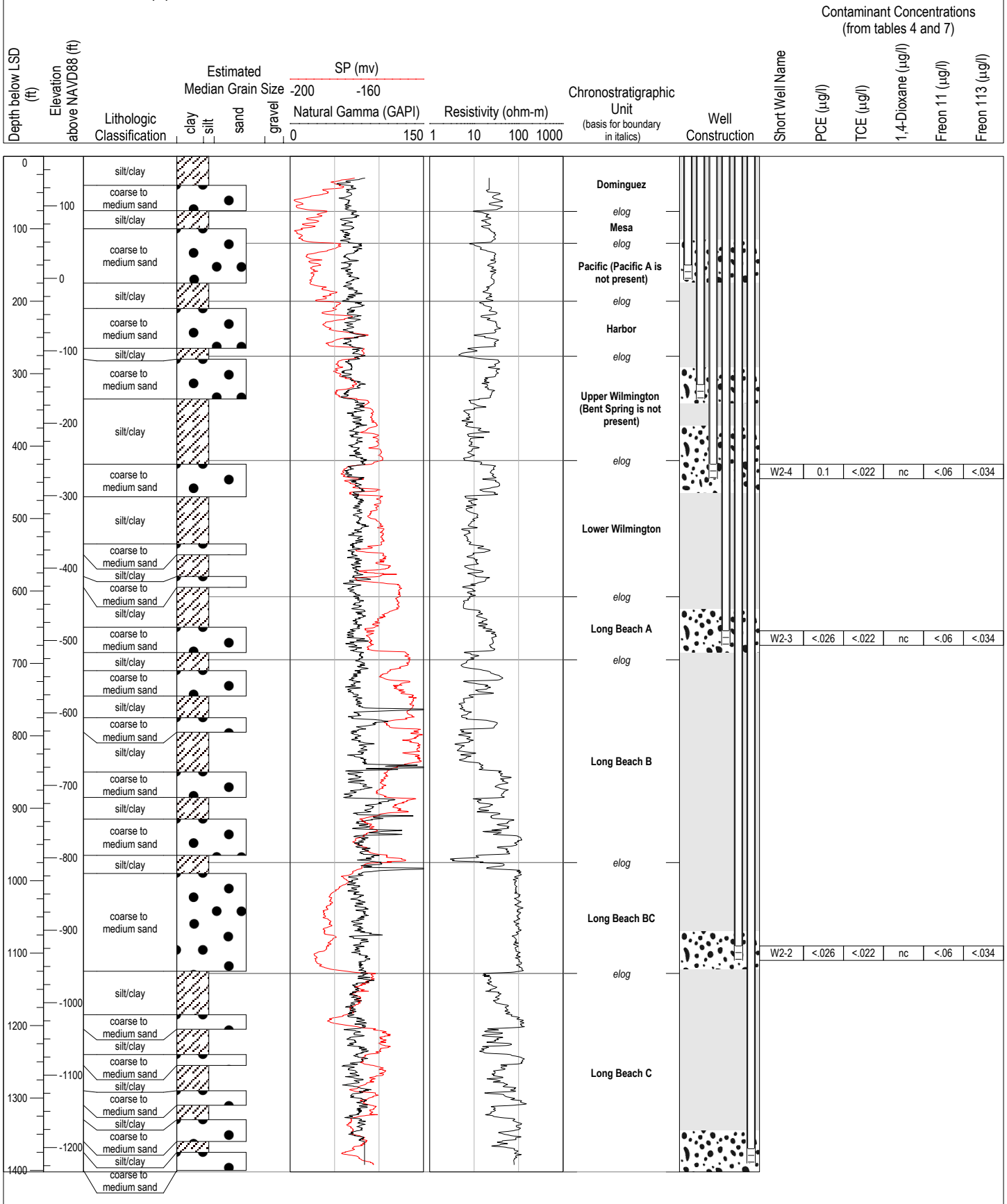
1. gravelly sediment – contains gravel as a substantial component of the material being described,
2. coarse to medium sand – sand is the dominant component of the material being described, including the presence of coarse- and medium-grained sand or the presence of gravel,
3. very fine to medium sand – sand is the dominant component of the material being described, with no indication of coarse sand or gravel,
4. silty sand to sandy silt – sandy materials with a considerable amount of fines (silt and clay present), or silts and clays with significant sand components. Includes such descriptions as silty sand, sandy silt, clayey sand, sandy clay, etc.,
5. silt/clay – materials that are dominantly fine-grained, either silt, clay, or a combination, with no more than a minor component of sand or gravel.

Geophysical-log traces shown are plotted directly from digital files provided by the reporting agencies or digitized from paper copies. Resistivity traces selected for display on these logs are those that provided the best bed-level delineation and resolution, usually laterolog or induction logs for recent logs, or short-normal resistivity for older logs.

Hole Name: Whittier-2

Hole Depth (ft): 1402

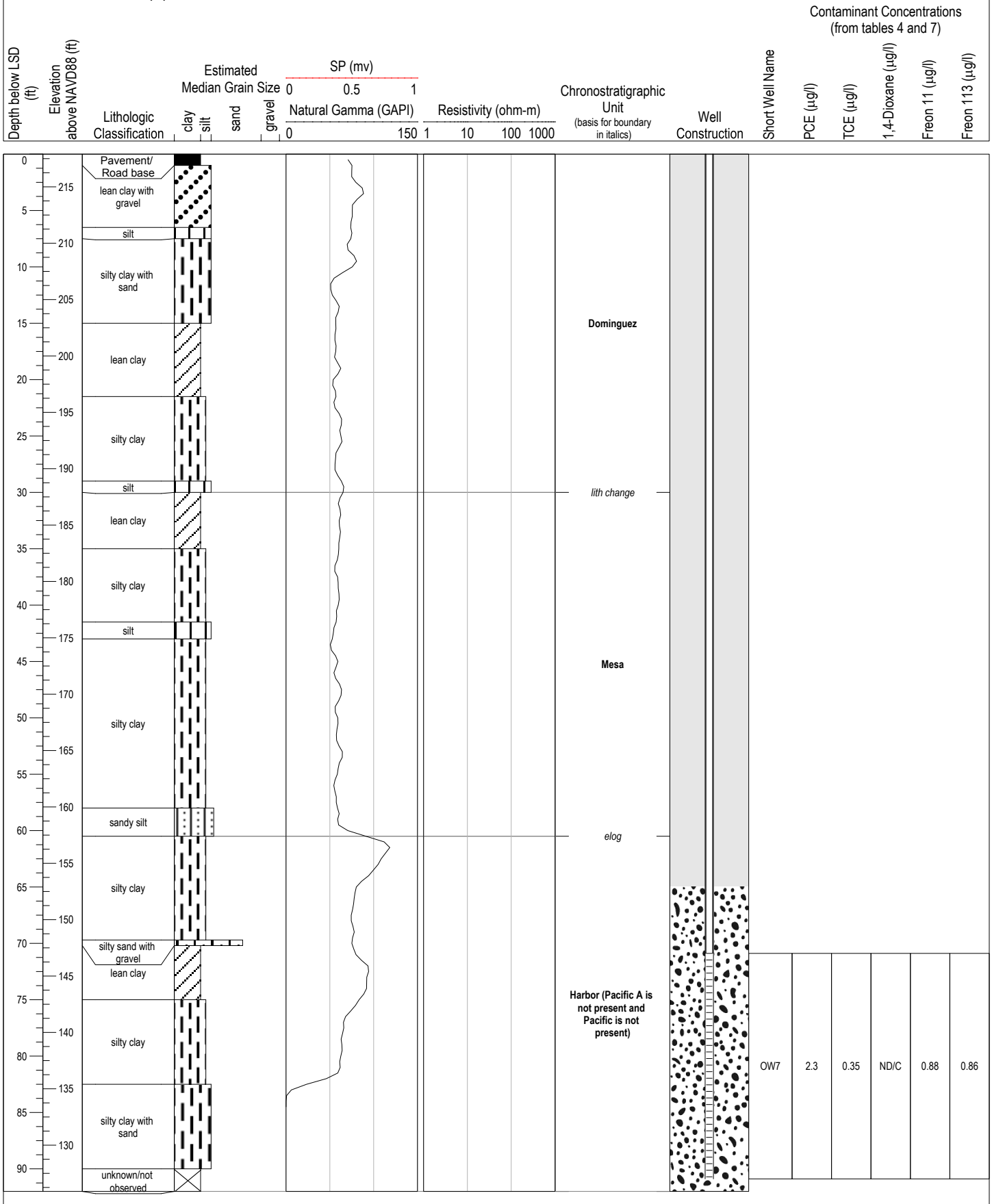
Elevation of LSD (ft): 168.4



Hole Name: OW7

Hole Depth (ft): 92

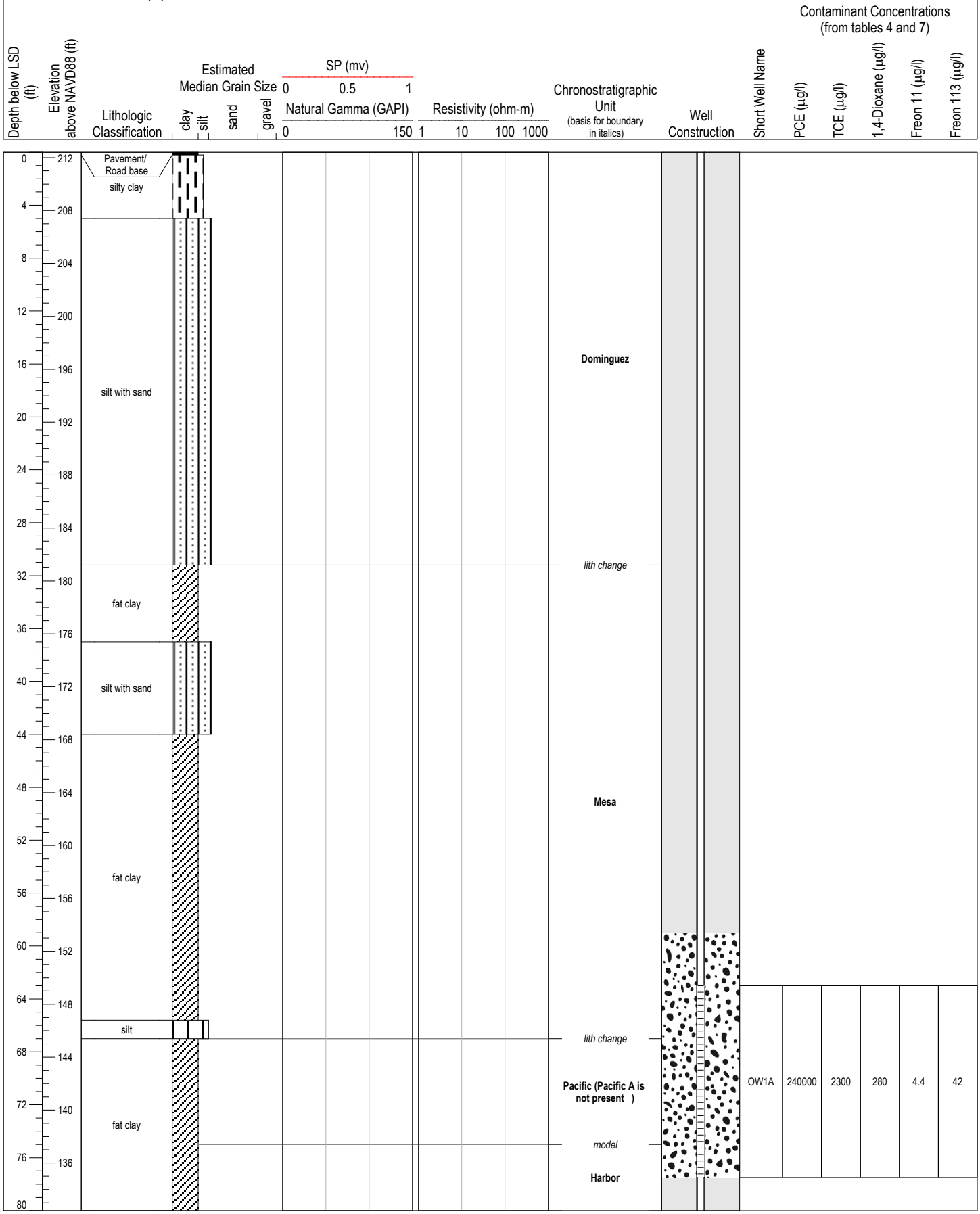
Elevation of LSD (ft): 217.9



Hole Name: OW1A

Hole Depth (ft): 80

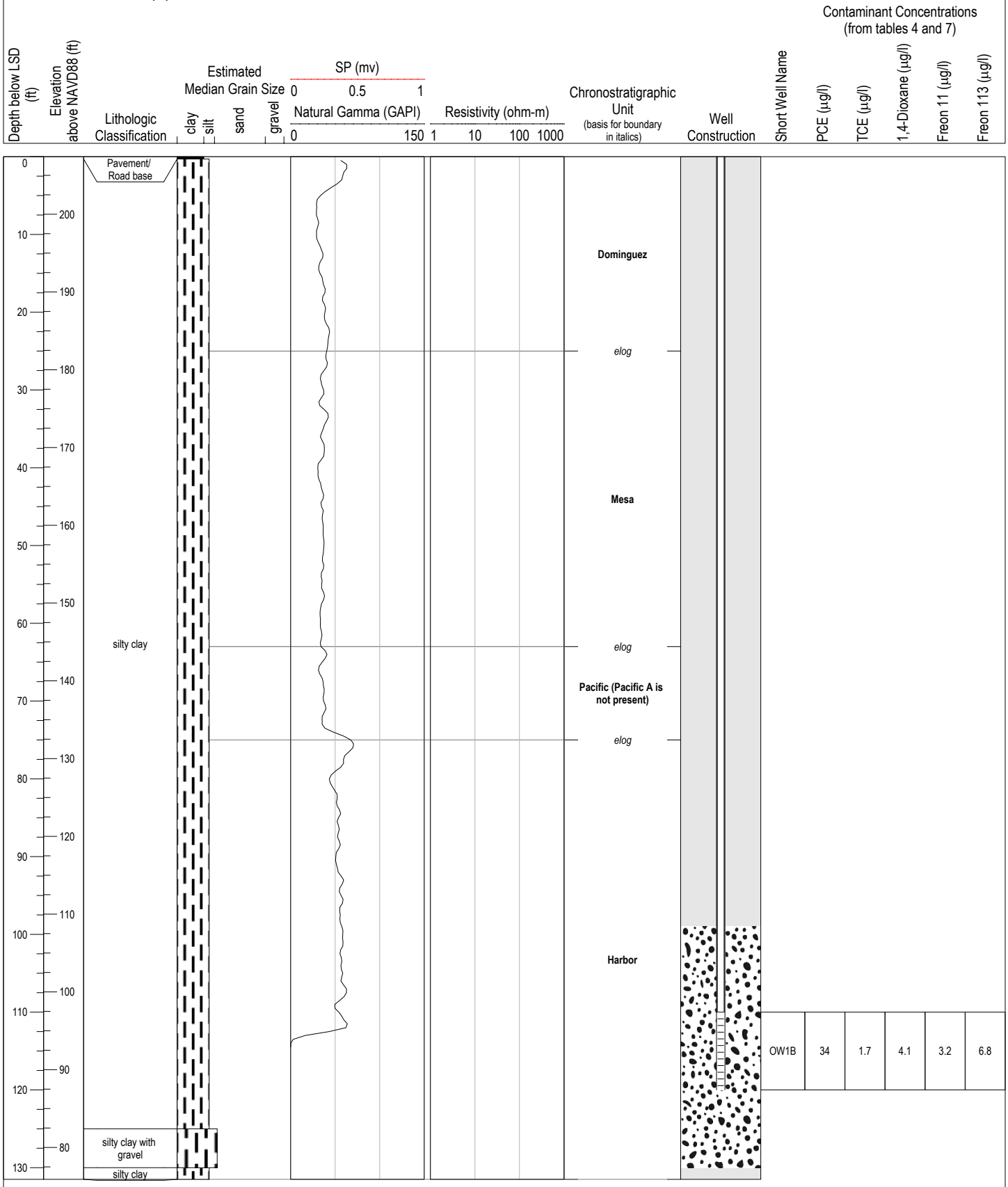
Elevation of LSD (ft): 212.4



Hole Name: OW1B

Hole Depth (ft): 131.5

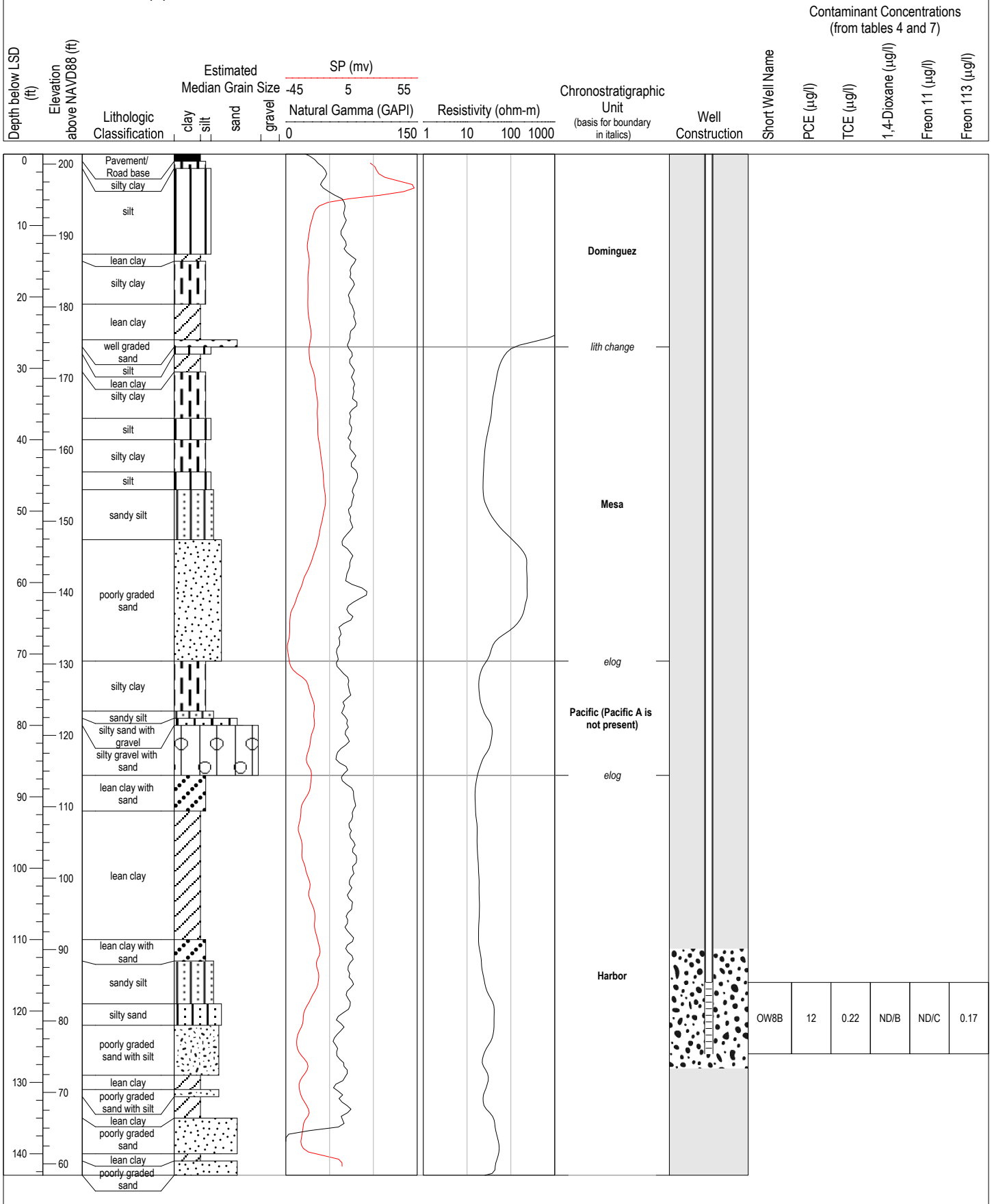
Elevation of LSD (ft): 207.4



Hole Name: OW8B

Hole Depth (ft): 143

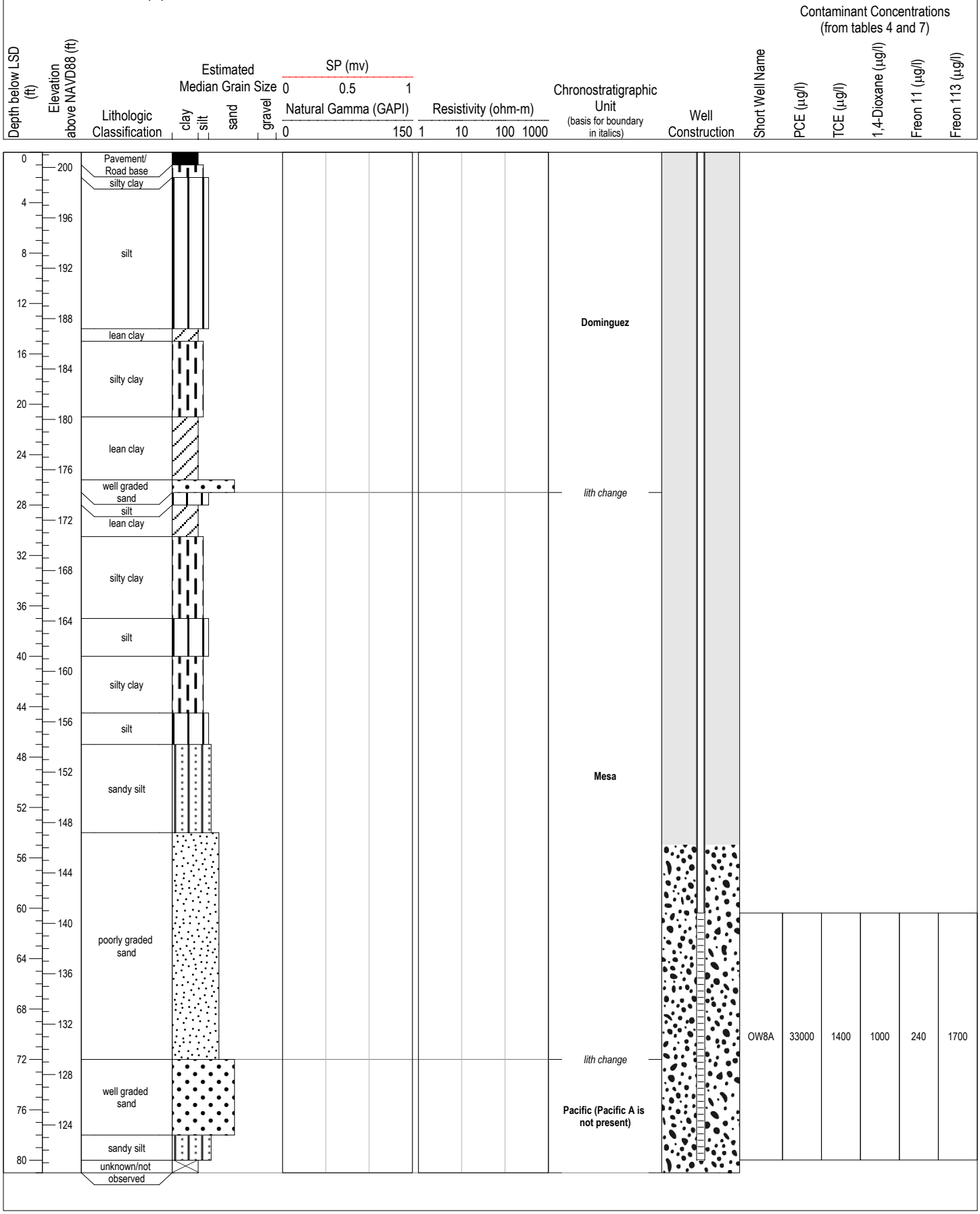
Elevation of LSD (ft): 201.4



Hole Name: OW8A

Hole Depth (ft): 81

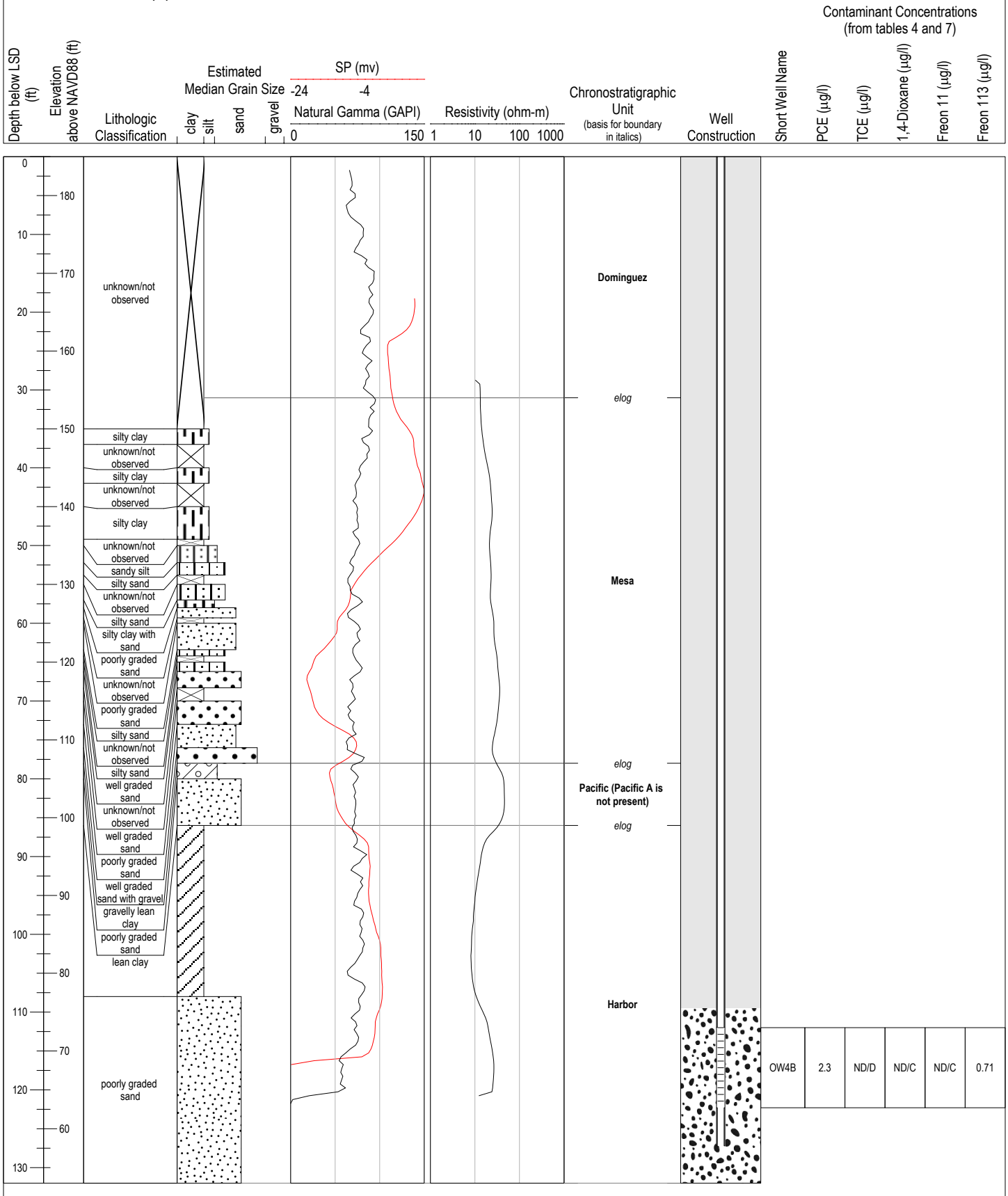
Elevation of LSD (ft): 201.2



Hole Name: OW4B

Hole Depth (ft): 132

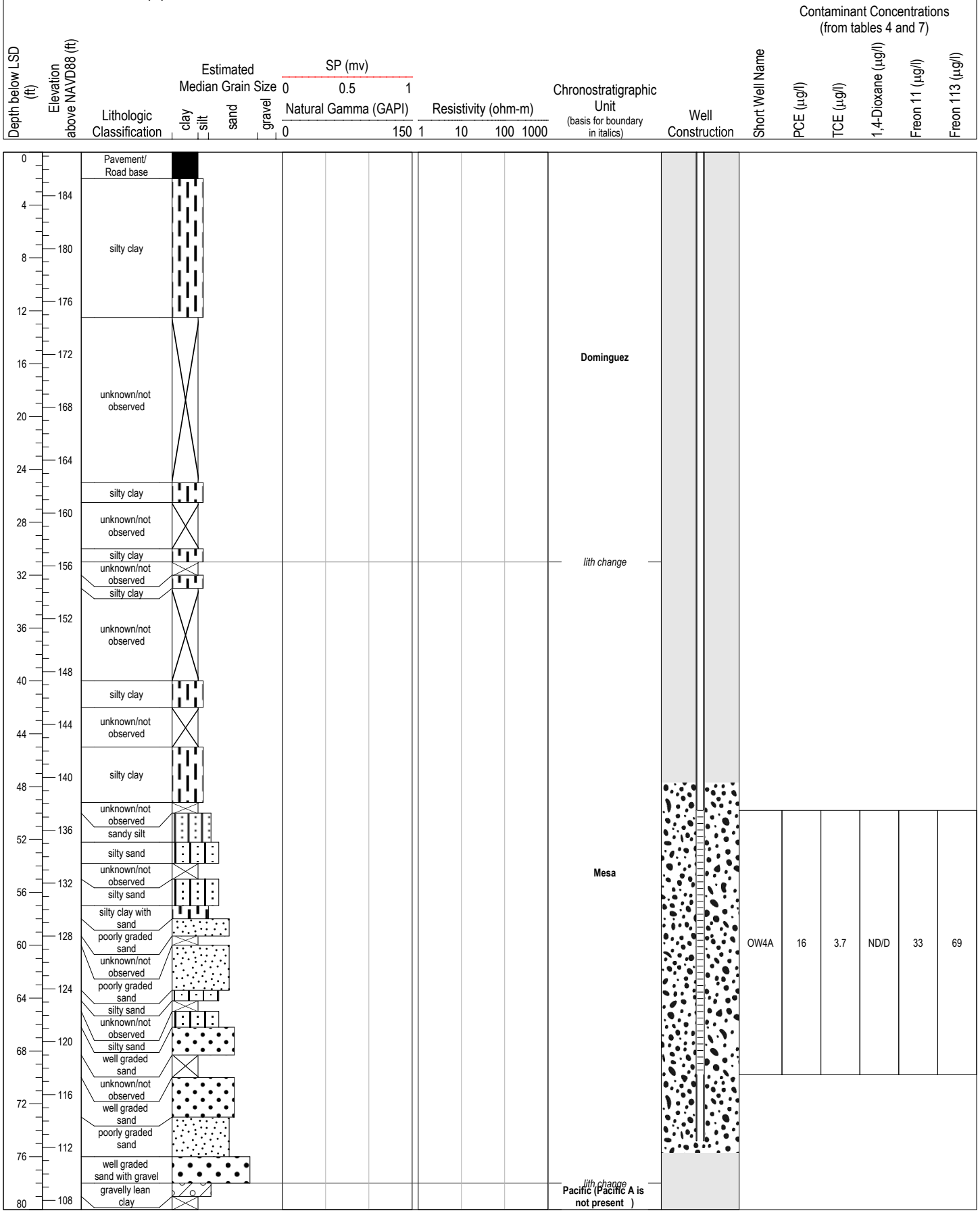
Elevation of LSD (ft): 185



Hole Name: OW4A

Hole Depth (ft): 80

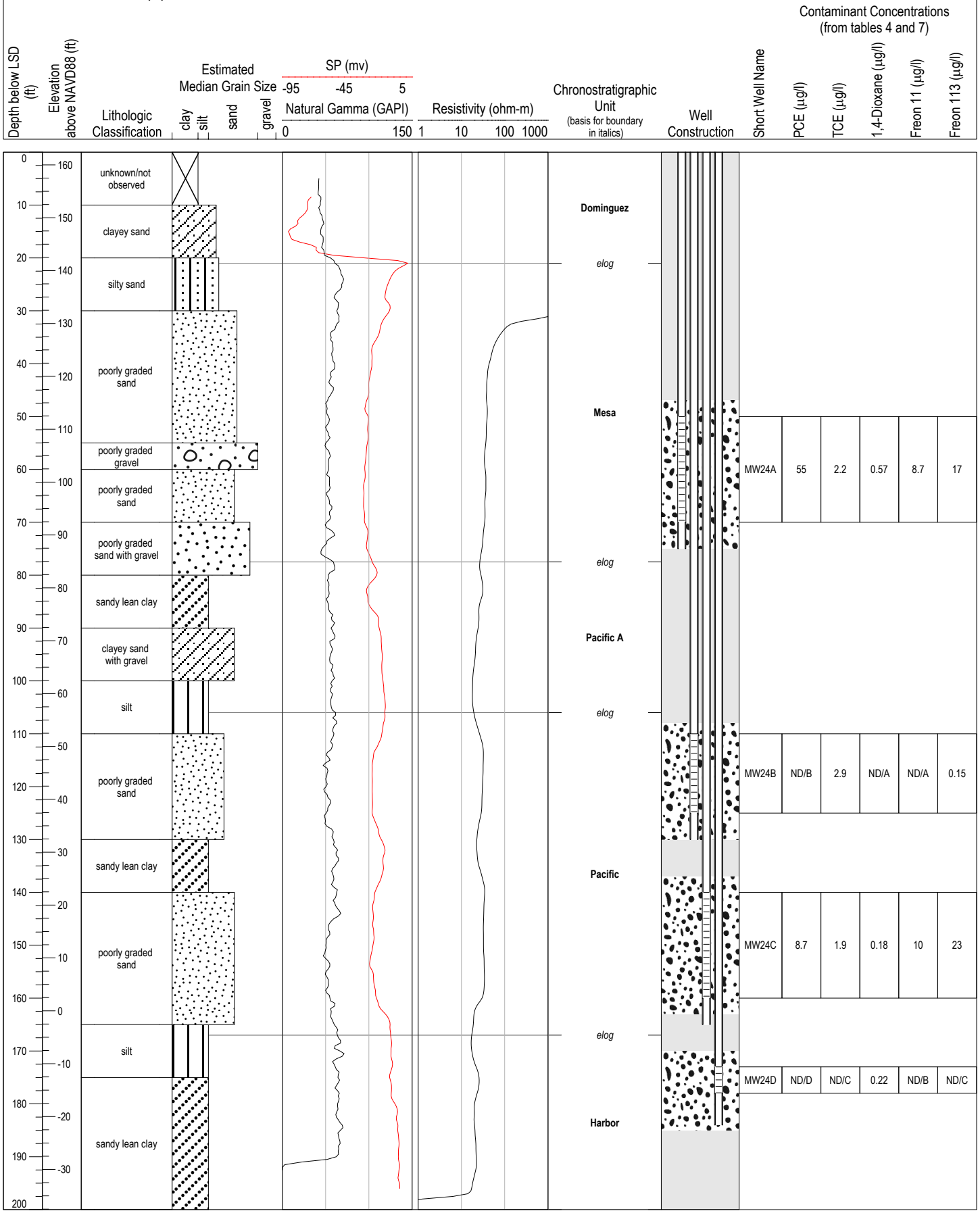
Elevation of LSD (ft): 187.3



Hole Name: MW24

Hole Depth (ft): 200

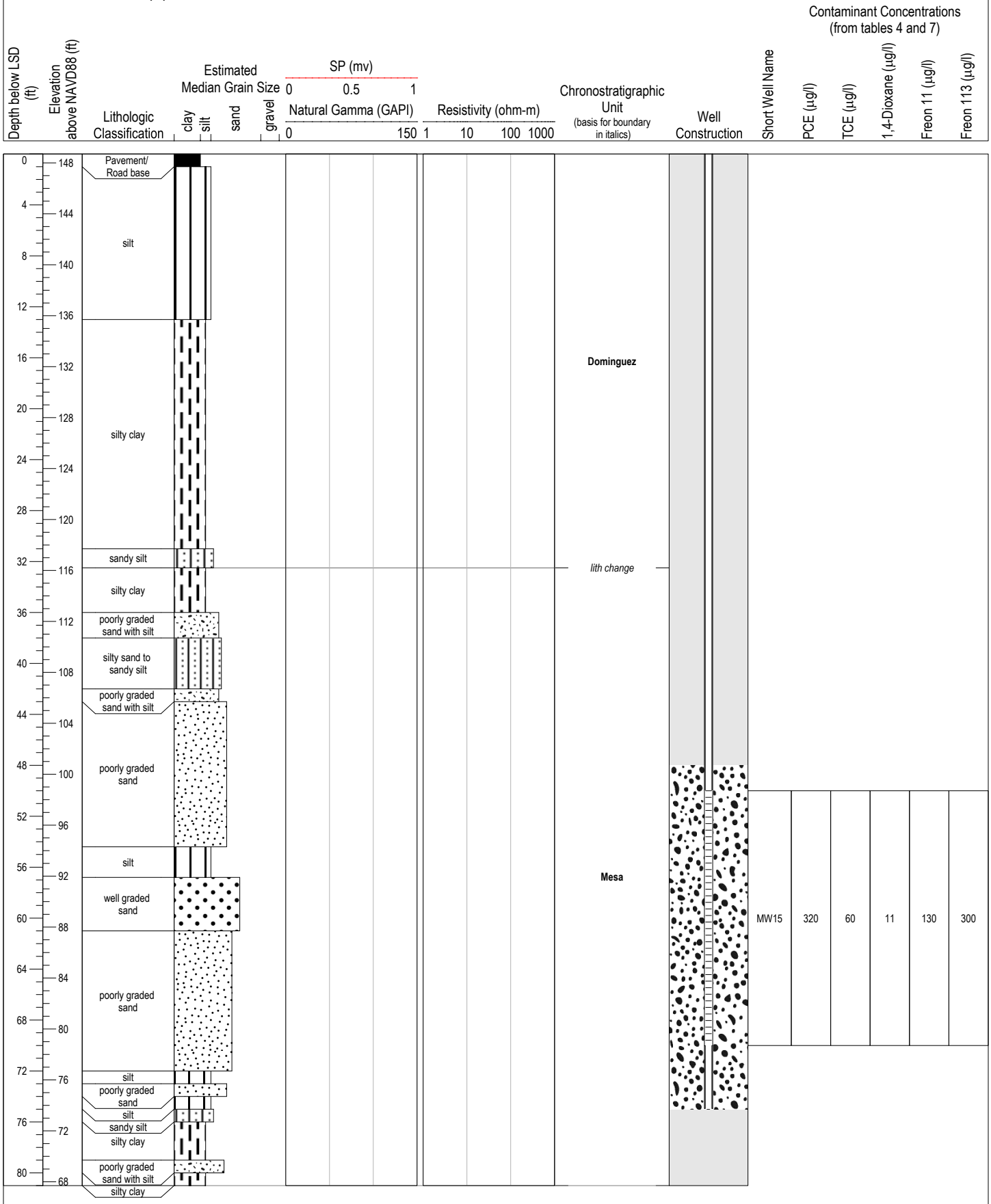
Elevation of LSD (ft): 162.4



Hole Name: MW15

Hole Depth (ft): 81

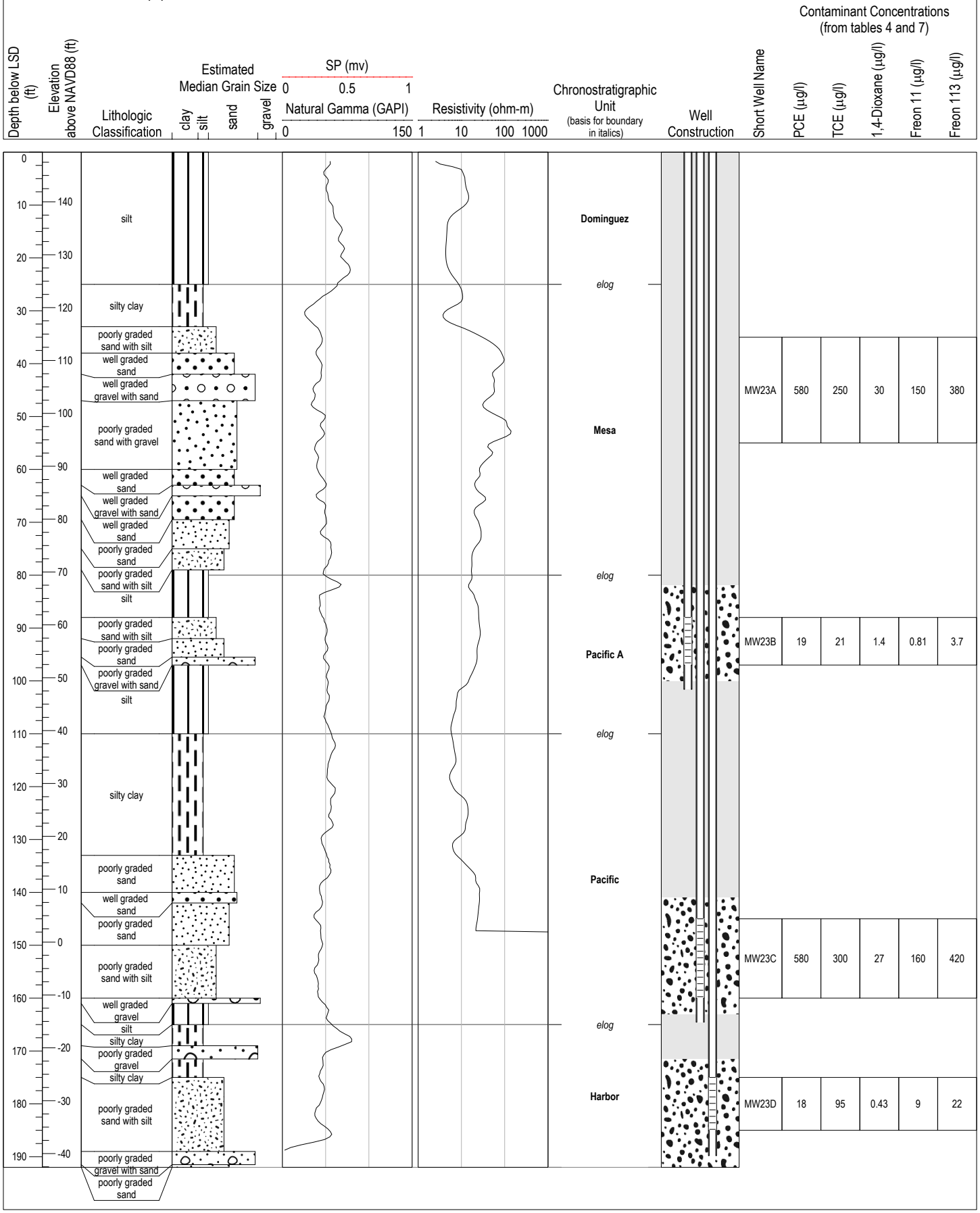
Elevation of LSD (ft): 148.7



Hole Name: MW23

Hole Depth (ft): 192

Elevation of LSD (ft): 149.4



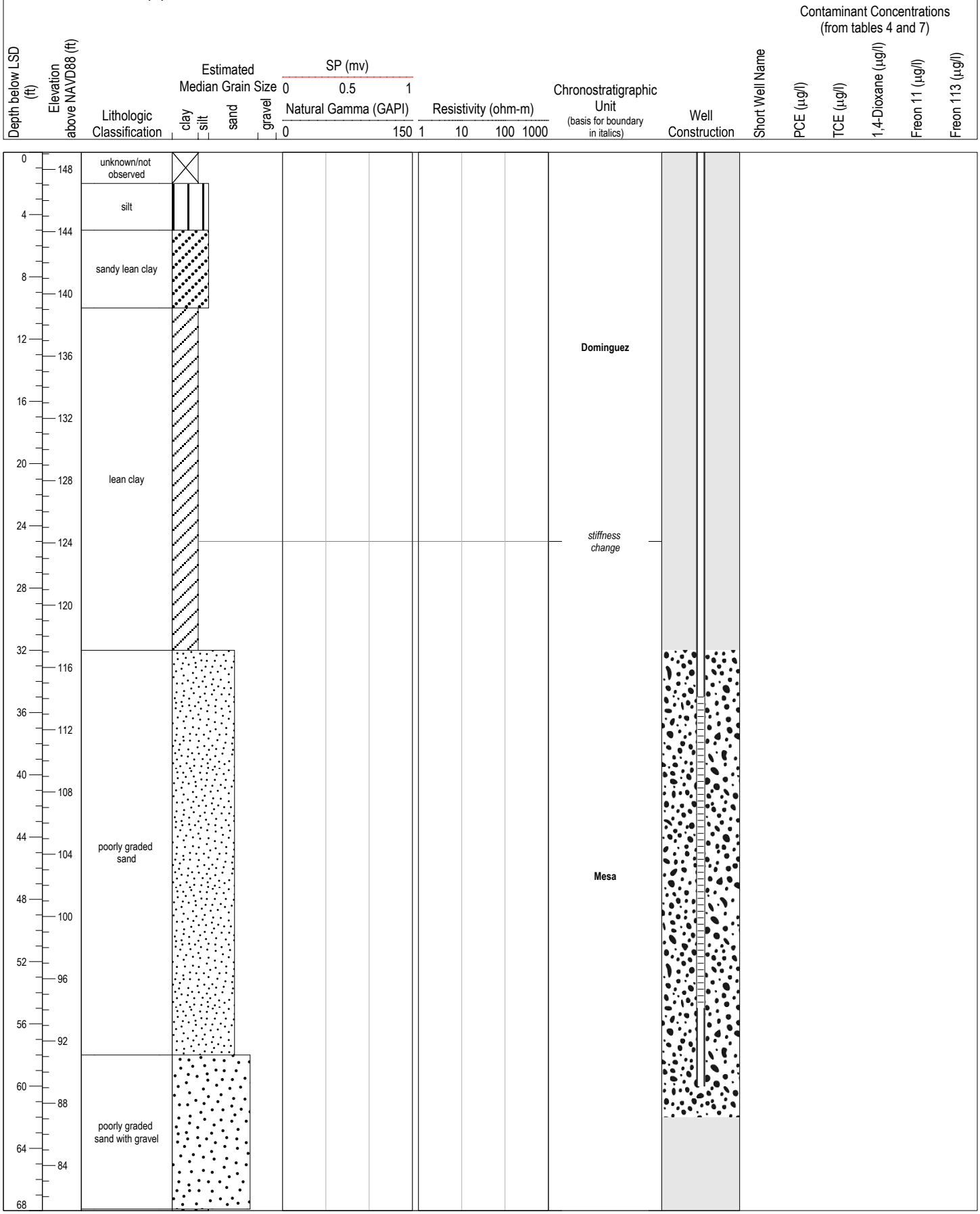
Contaminant Concentrations (from tables 4 and 7)

Short Well Name	PCE (µg/l)	TCE (µg/l)	1,4-Dioxane (µg/l)	Freon 11 (µg/l)	Freon 113 (µg/l)
MW23A	580	250	30	150	380
MW23B	19	21	1.4	0.81	3.7
MW23C	580	300	27	160	420
MW23D	18	95	0.43	9	22

Hole Name: MW23A

Hole Depth (ft): 68

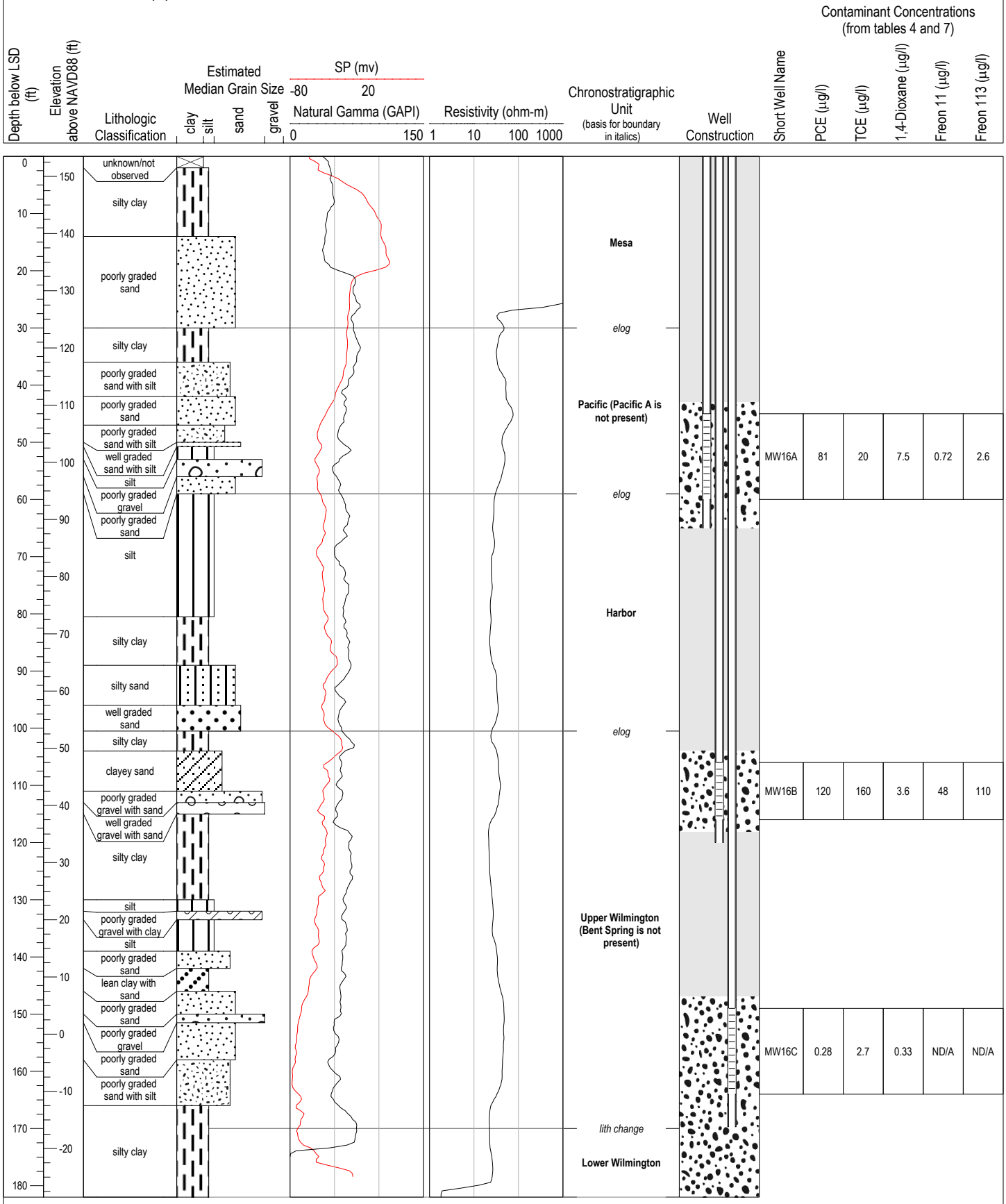
Elevation of LSD (ft): 149.1



Hole Name: MW16

Hole Depth (ft): 182

Elevation of LSD (ft): 153.5



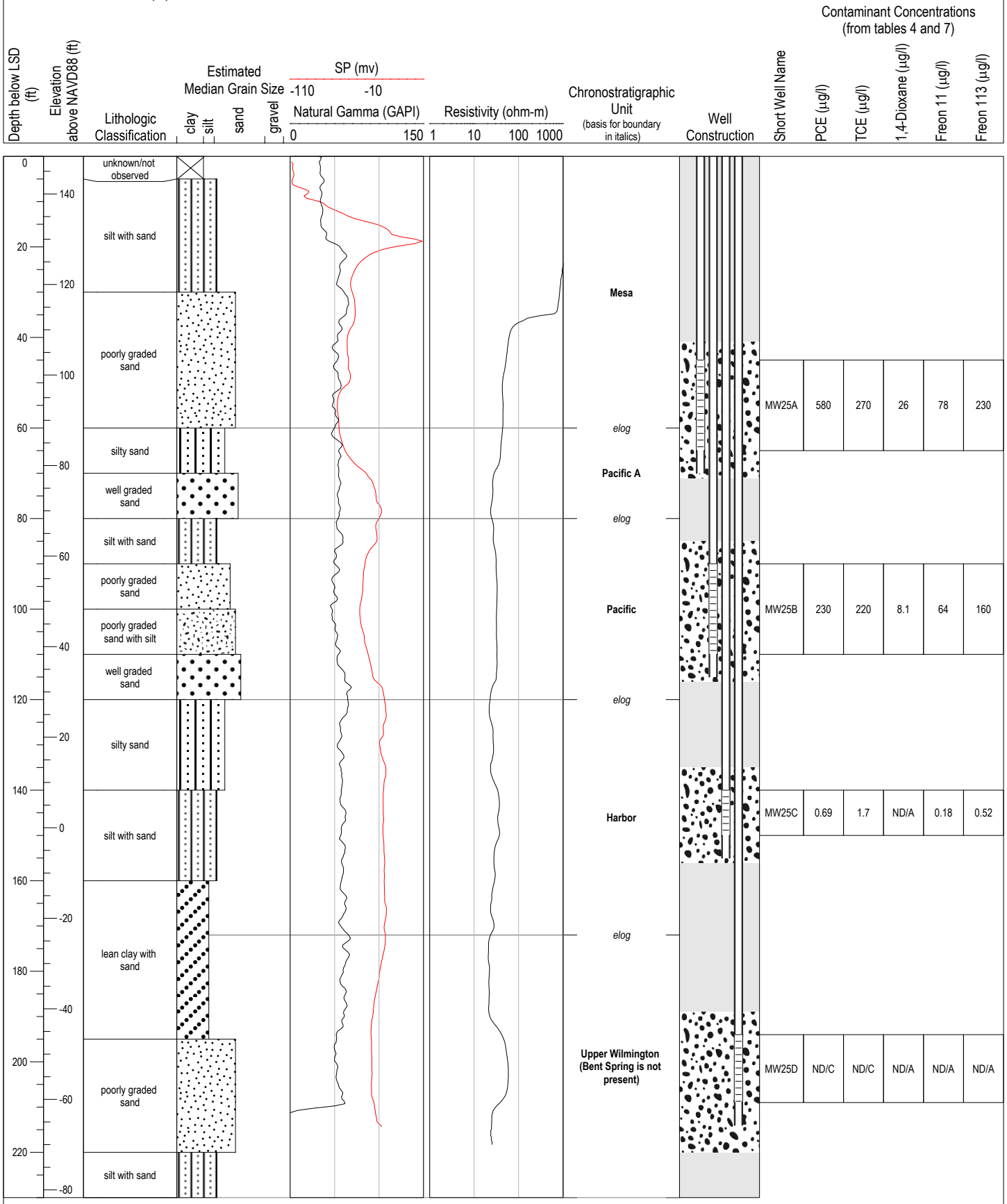
Contaminant Concentrations (from tables 4 and 7)

Short Well Name	PCE (µg/l)	TCE (µg/l)	1,4-Dioxane (µg/l)	Freon 11 (µg/l)	Freon 113 (µg/l)
MW16A	81	20	7.5	0.72	2.6
MW16B	120	160	3.6	48	110
MW16C	0.28	2.7	0.33	ND/A	ND/A

Hole Name: MW25

Hole Depth (ft): 230

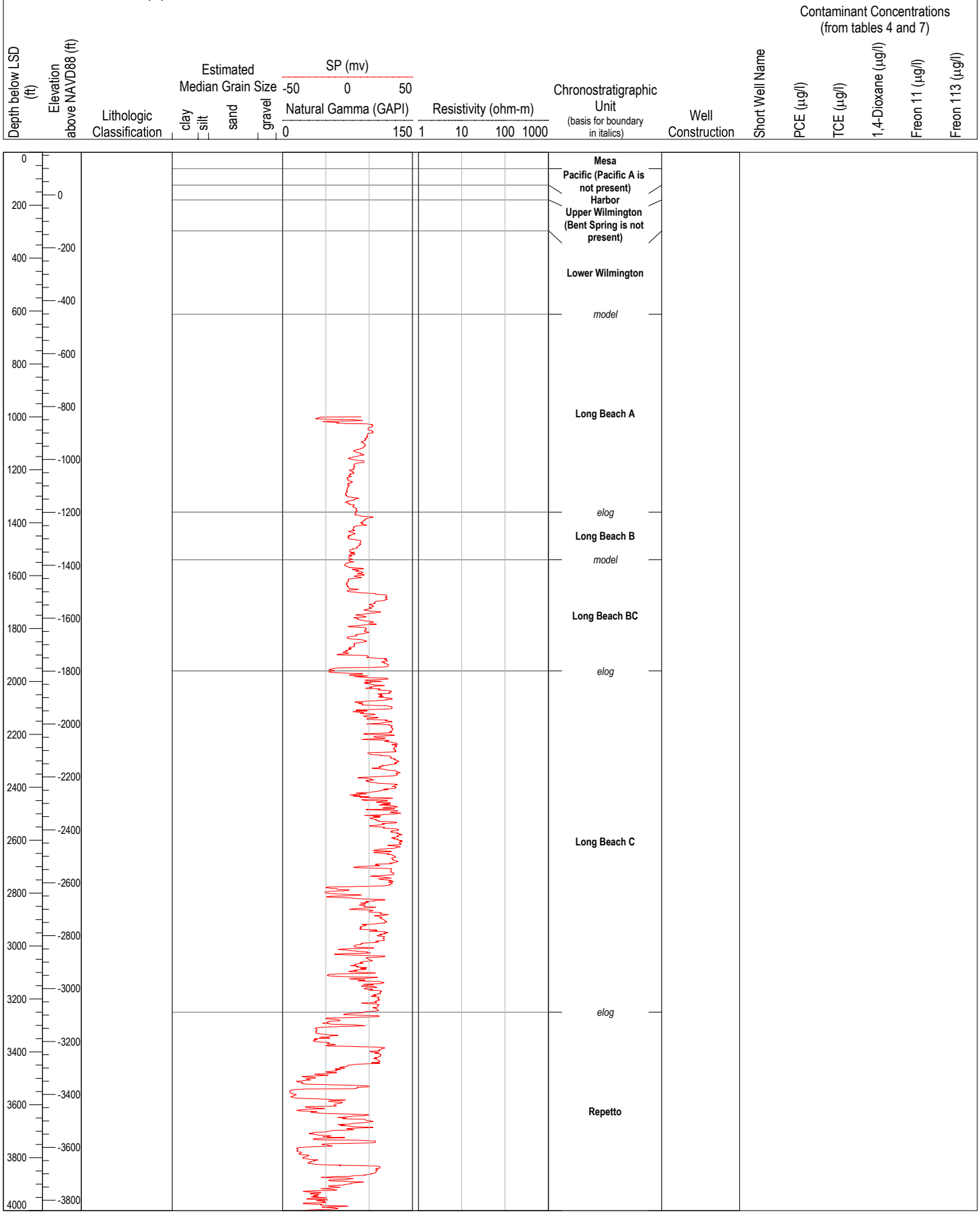
Elevation of LSD (ft): 148.3



Hole Name: CF_1

Hole Depth (ft): 4000

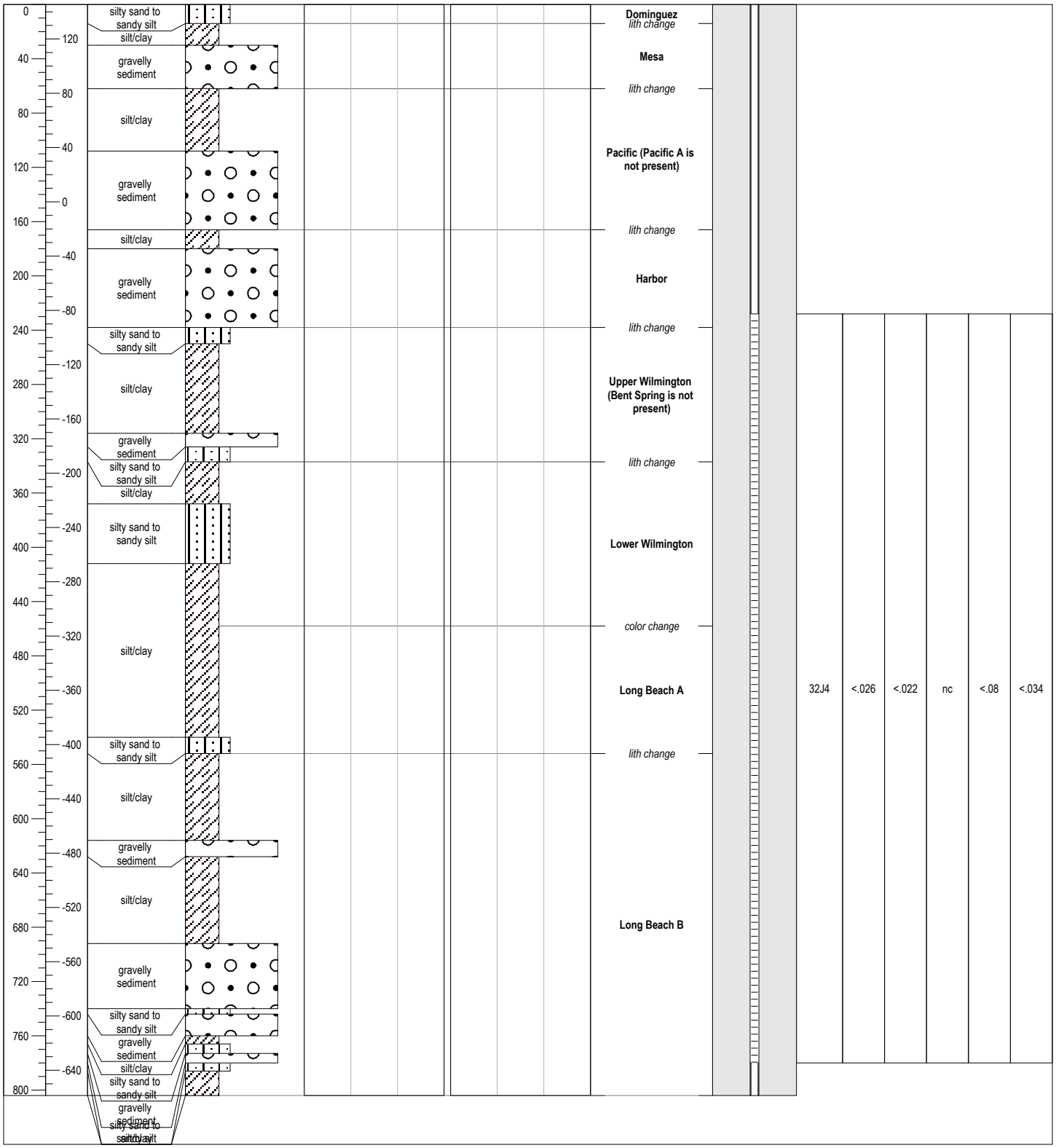
Elevation of LSD (ft): 160.9



Hole Name: 32J4

Hole Depth (ft): 804

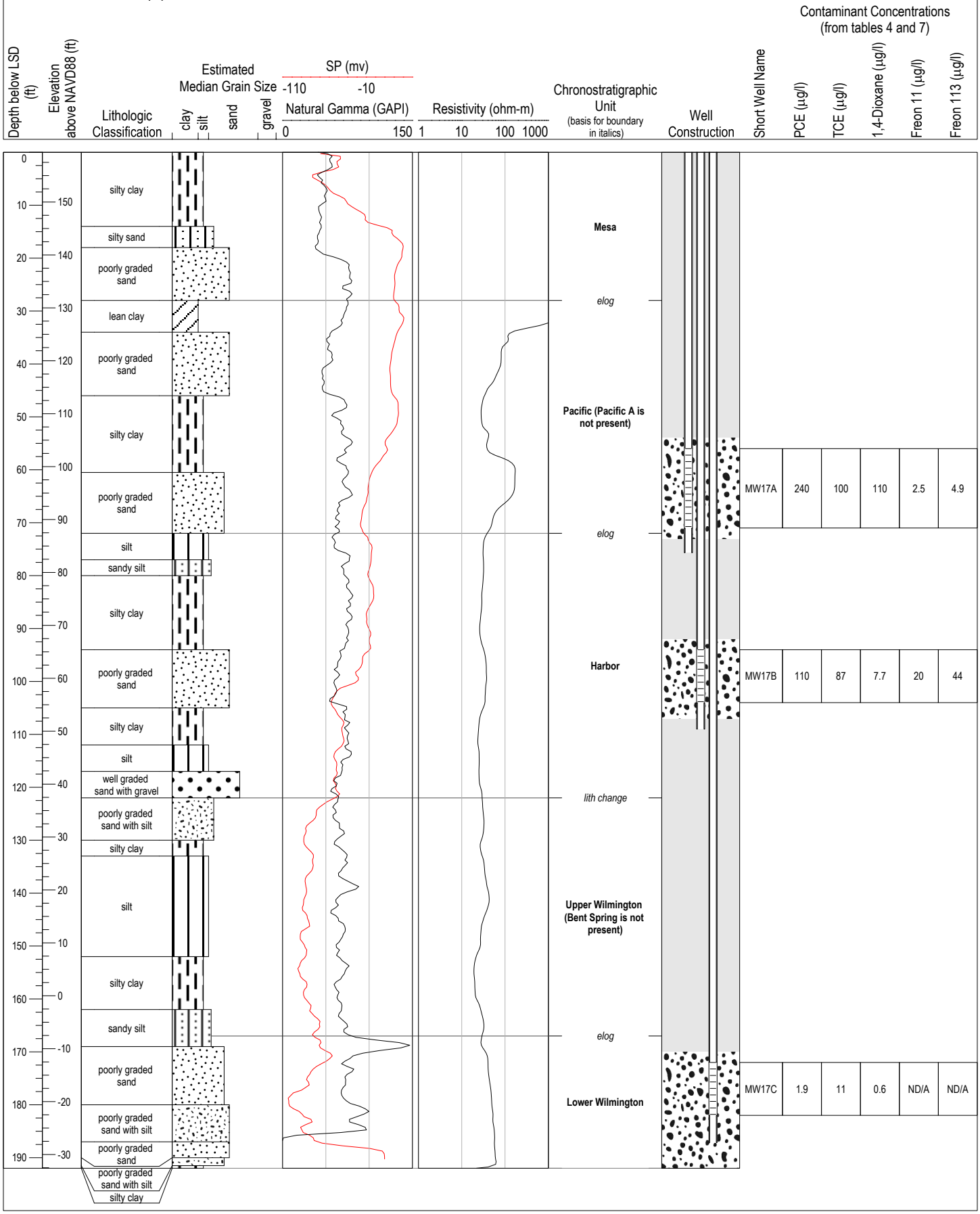
Elevation of LSD (ft): 145.4



Hole Name: MW17

Hole Depth (ft): 192

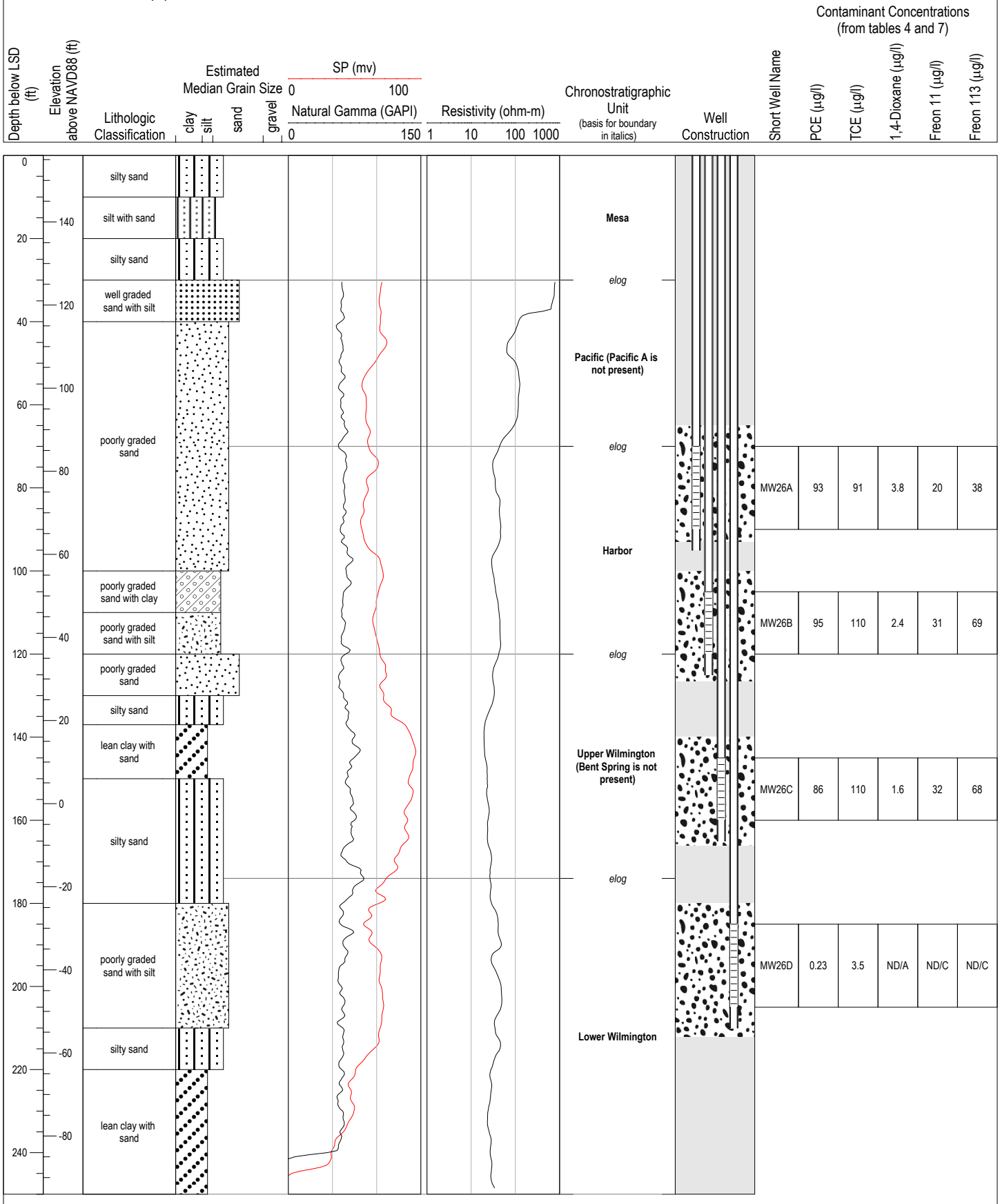
Elevation of LSD (ft): 159.4



Hole Name: MW26

Hole Depth (ft): 250

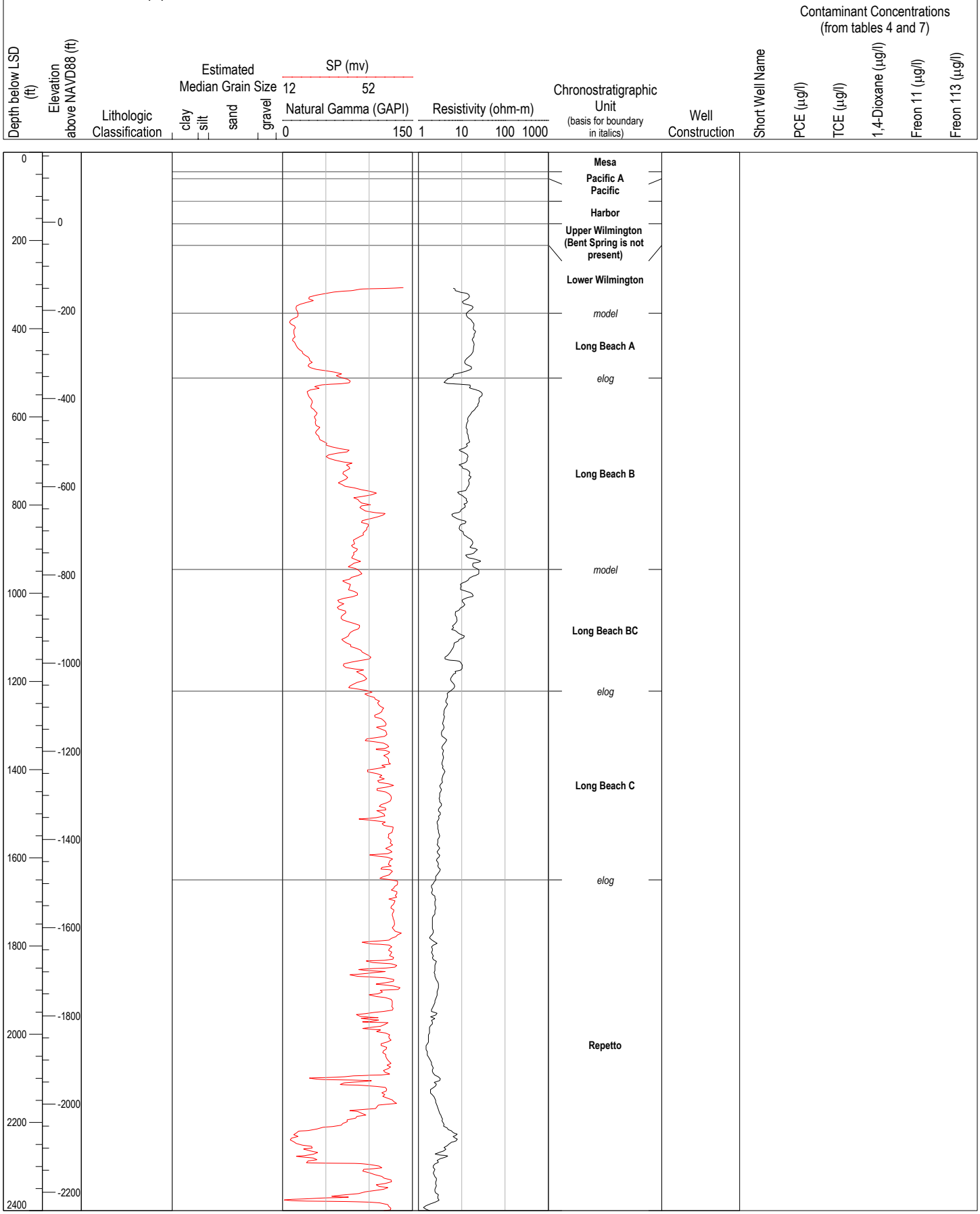
Elevation of LSD (ft): 156



Hole Name: T_364P

Hole Depth (ft): 2400

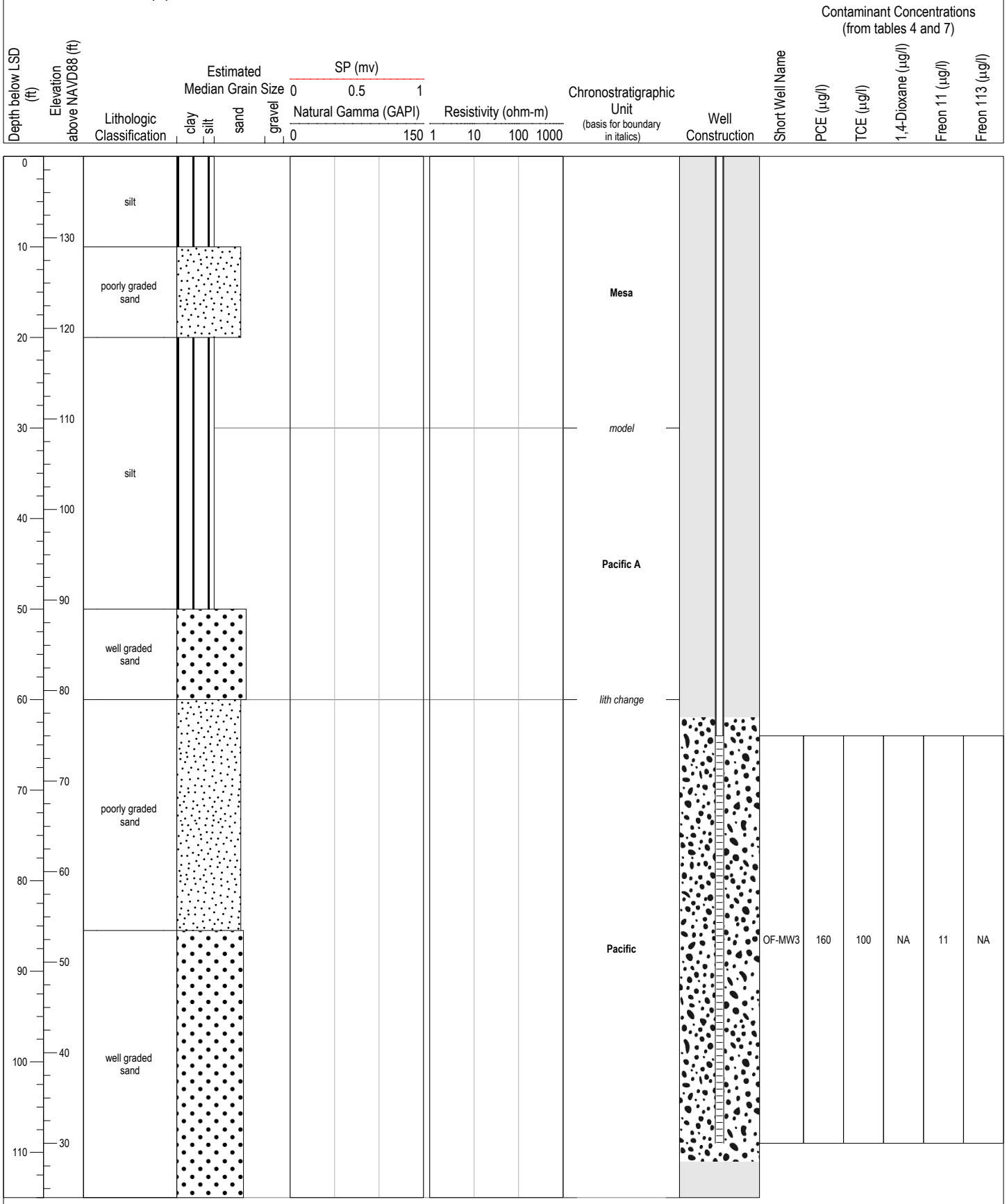
Elevation of LSD (ft): 158.4



Hole Name: OFRP-MW3

Hole Depth (ft): 115

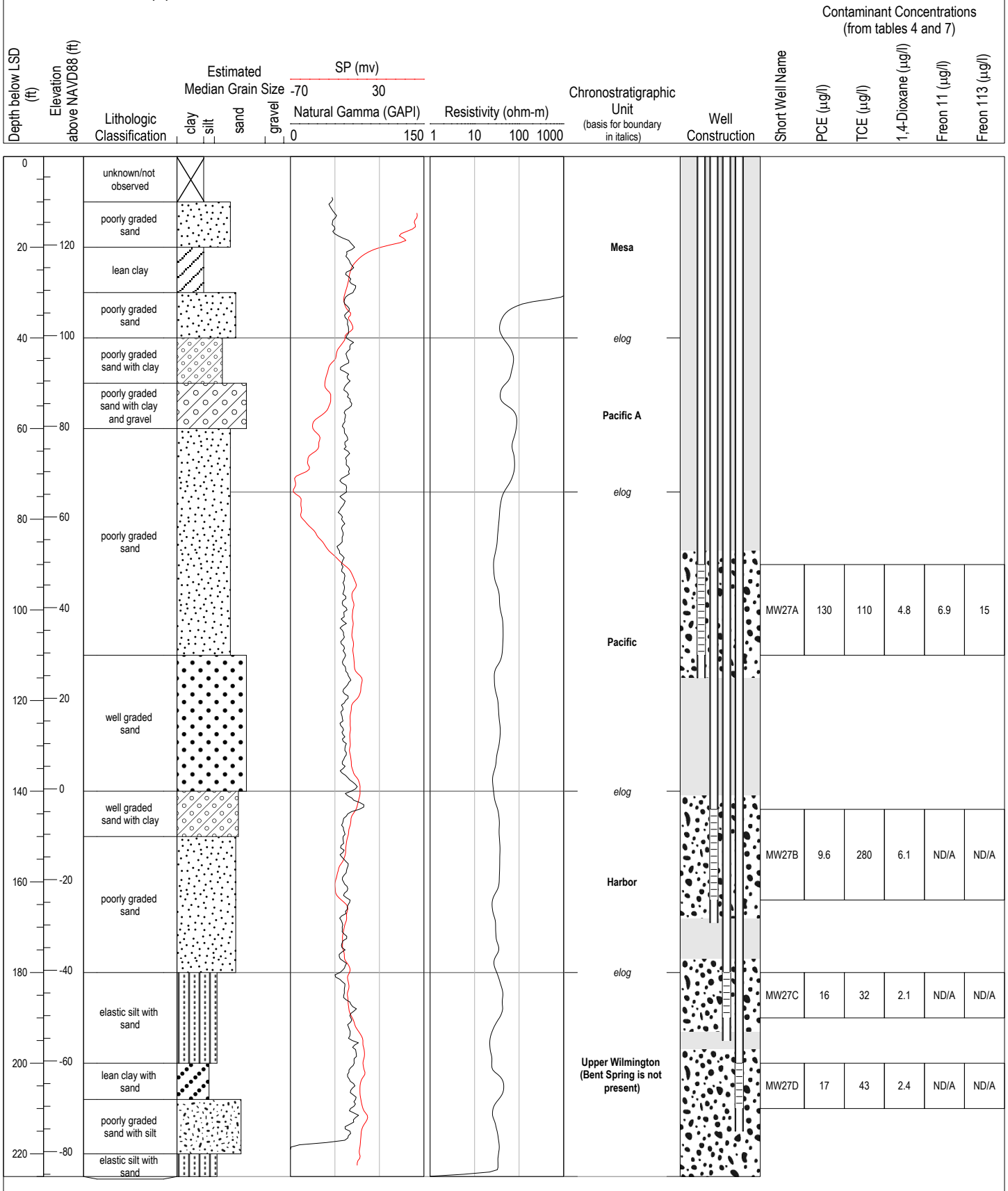
Elevation of LSD (ft): 139



Hole Name: MW27

Hole Depth (ft): 225

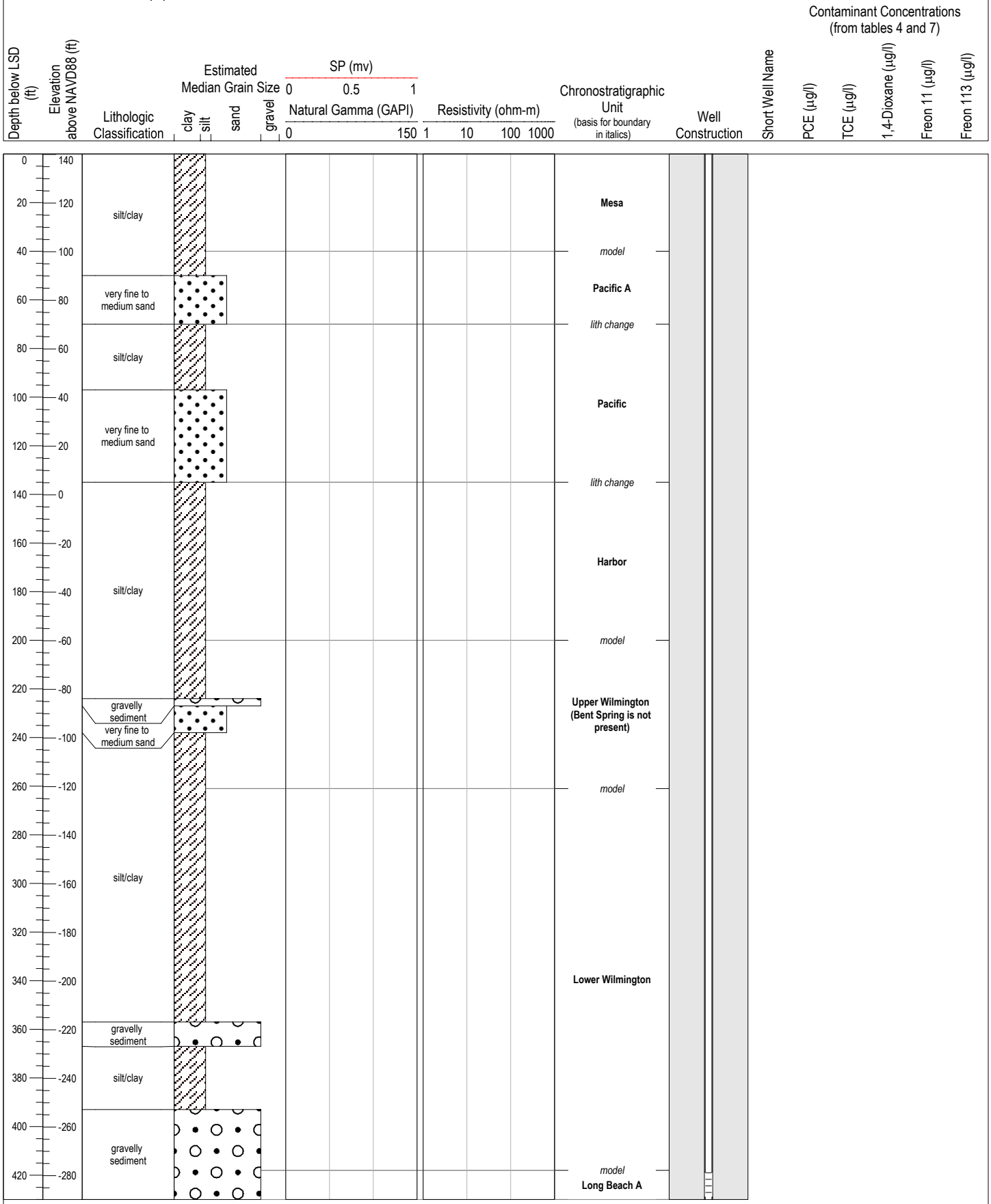
Elevation of LSD (ft): 139.5



Hole Name: 6K1

Hole Depth (ft): 430

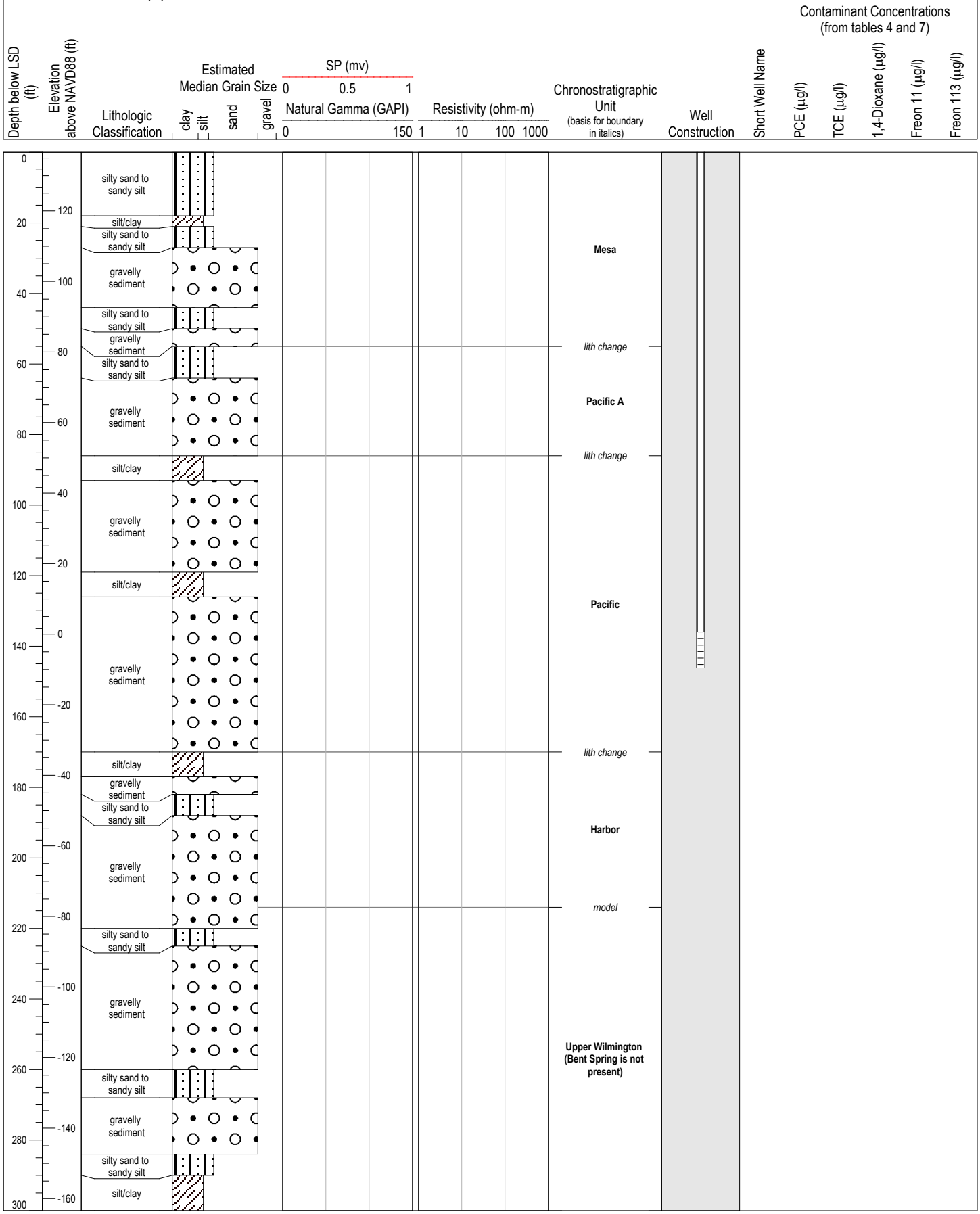
Elevation of LSD (ft): 140.2



Hole Name: C-26

Hole Depth (ft): 300

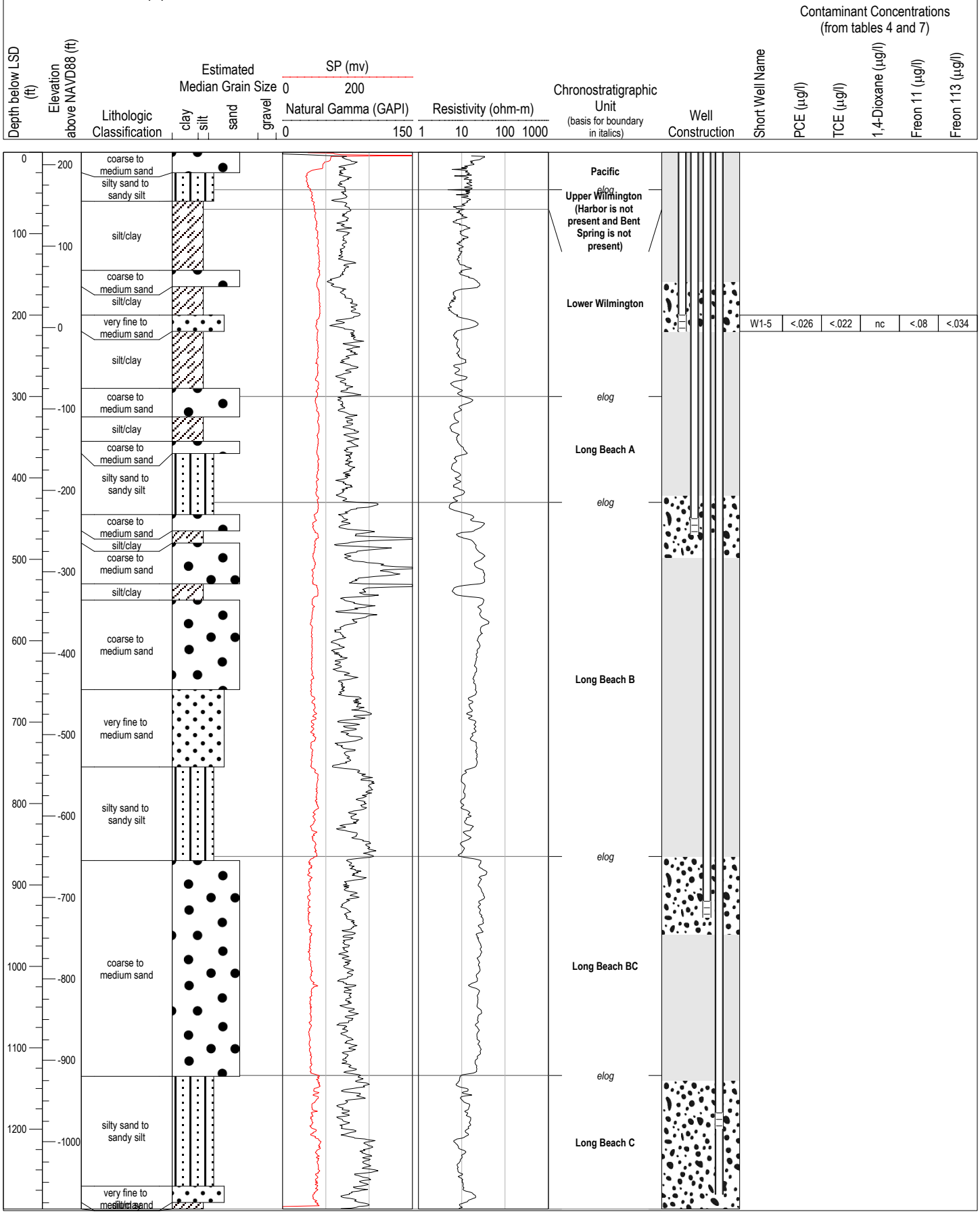
Elevation of LSD (ft): 136.6



Hole Name: Whittier-1

Hole Depth (ft): 1298

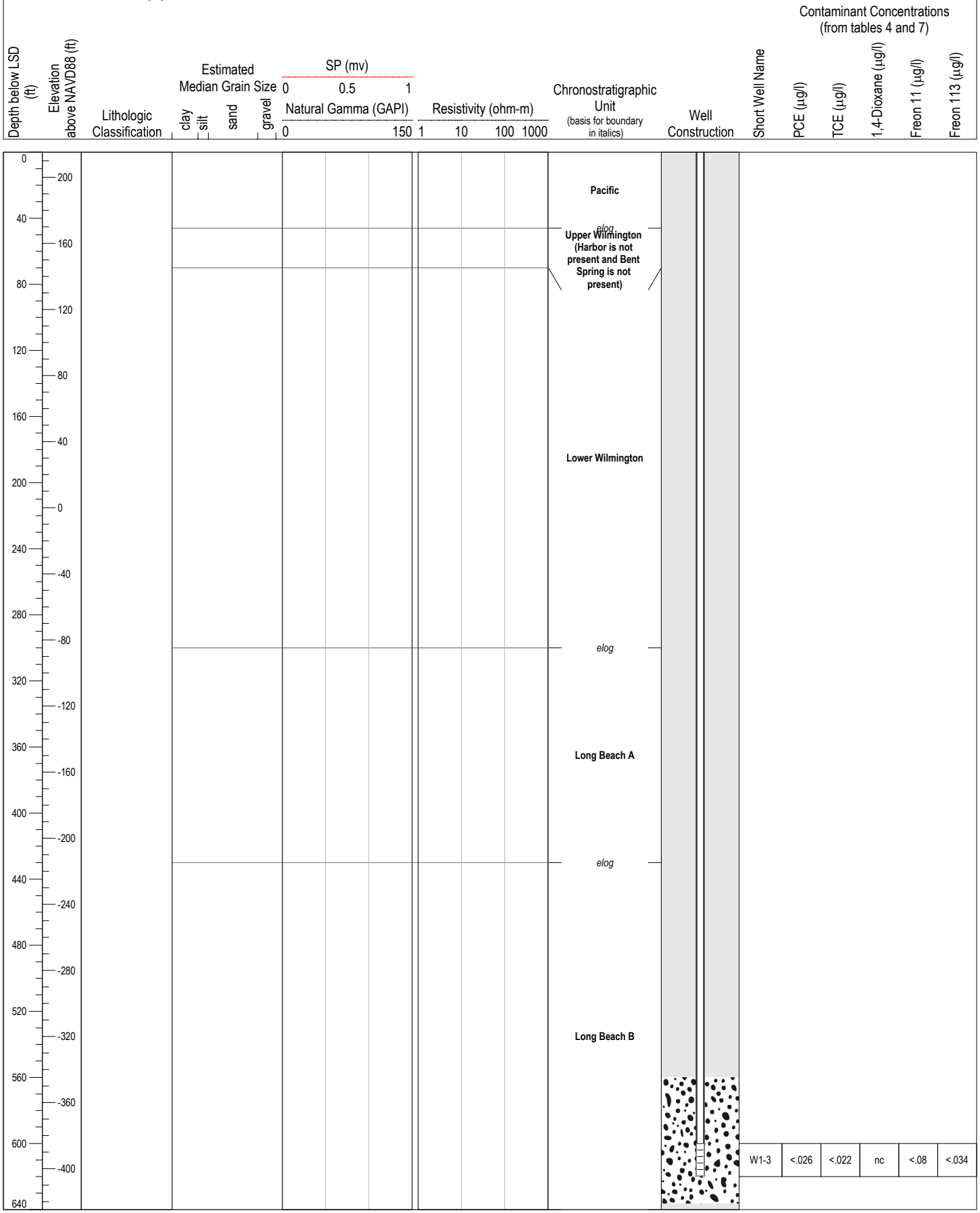
Elevation of LSD (ft): 215.3



Hole Name: Whittier-1 RD

Hole Depth (ft): 640

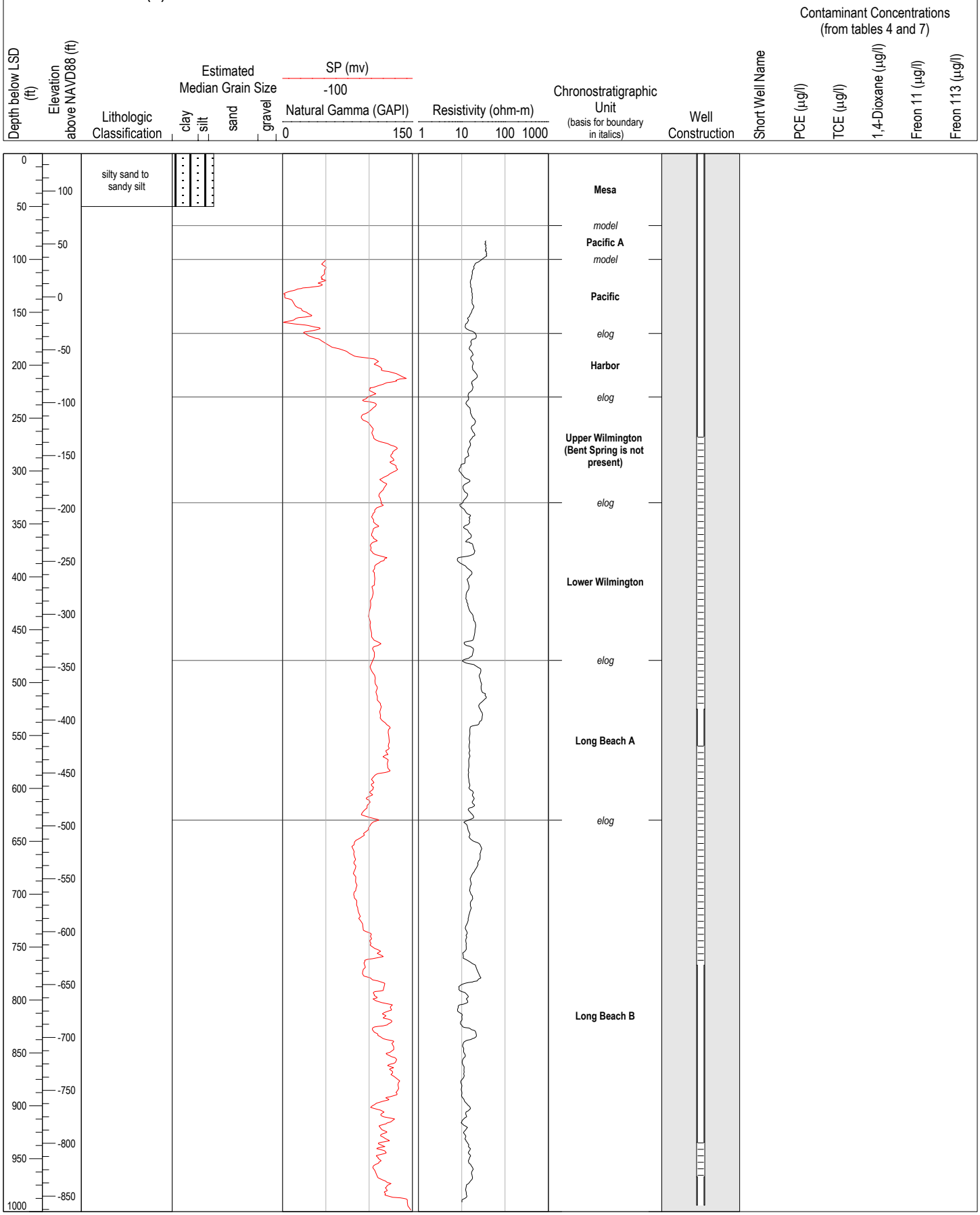
Elevation of LSD (ft): 215.2



Hole Name: 6Q4

Hole Depth (ft): 1000

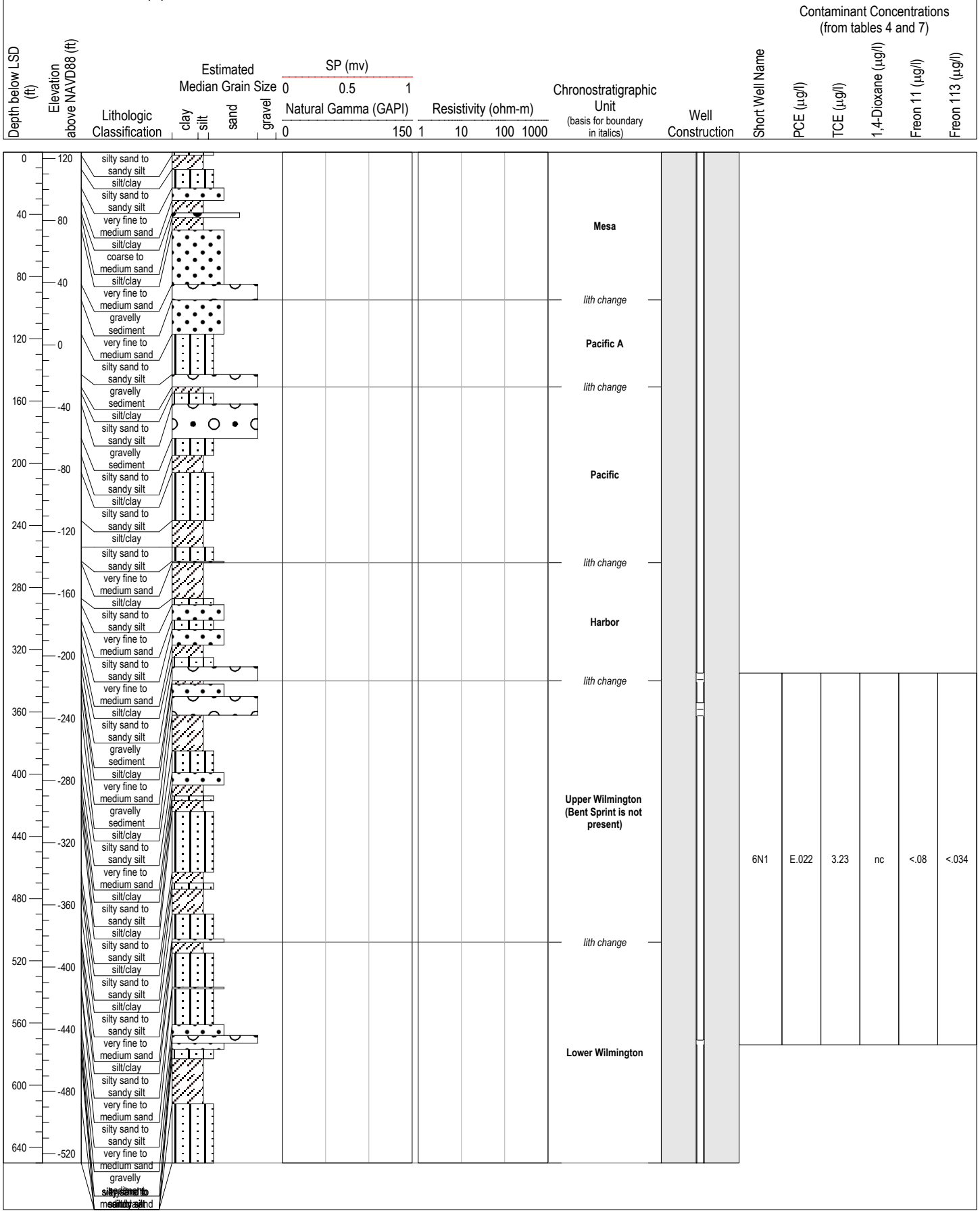
Elevation of LSD (ft): 135.4



Hole Name: 6N1

Hole Depth (ft): 650

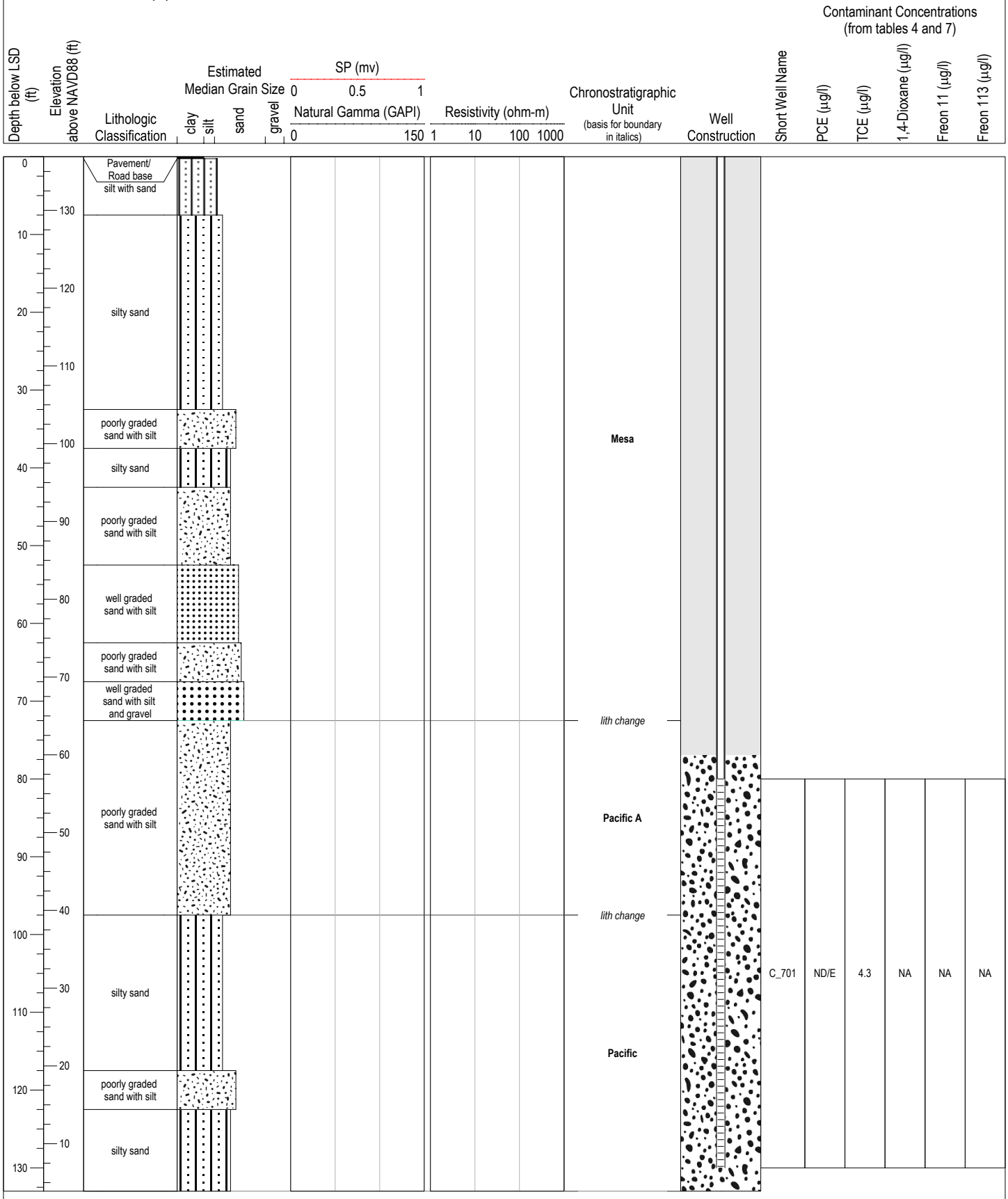
Elevation of LSD (ft): 124



Hole Name: C_701

Hole Depth (ft): 133

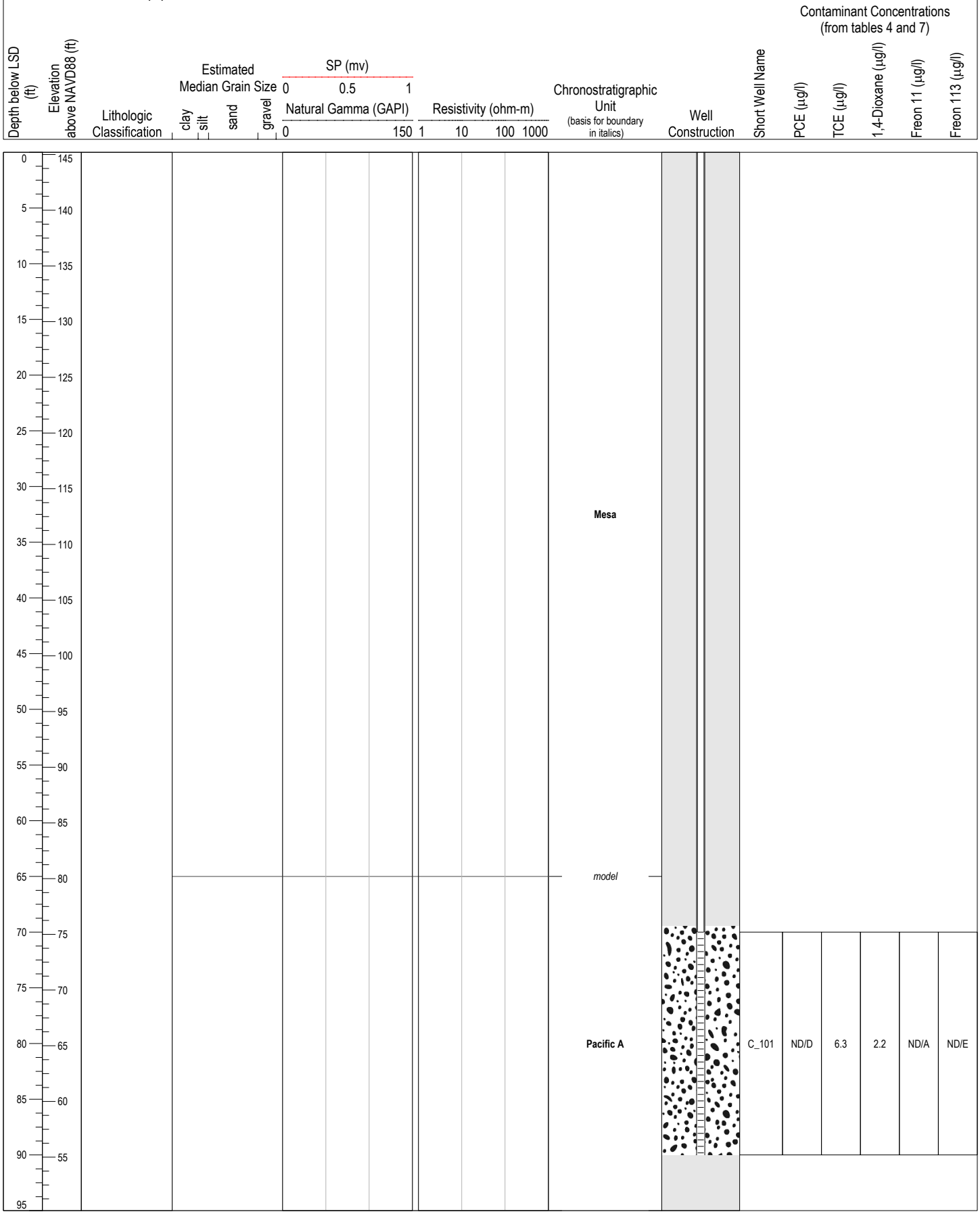
Elevation of LSD (ft): 136.9



Hole Name: C_101

Hole Depth (ft): 95

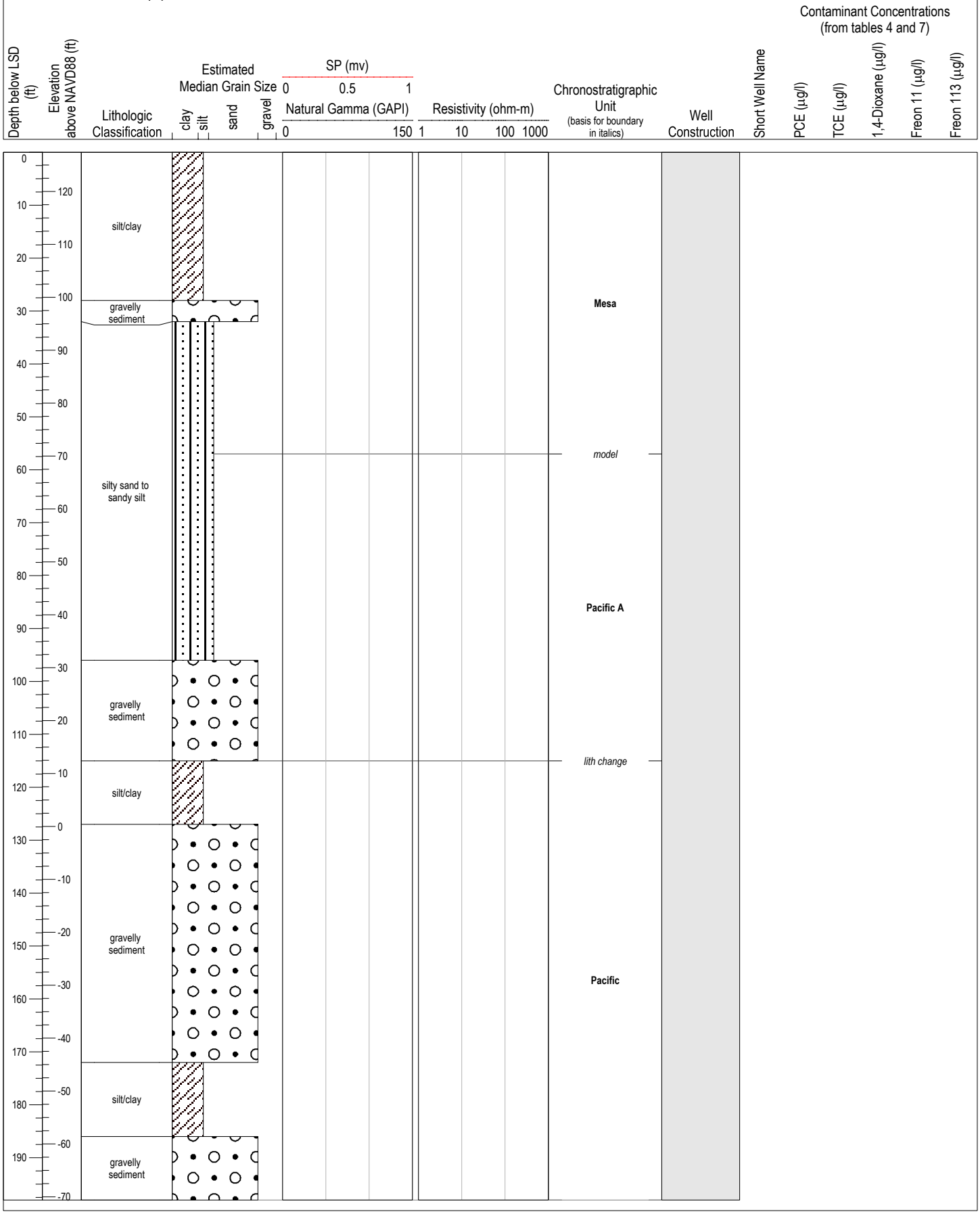
Elevation of LSD (ft): 145.2



Hole Name: 7B2

Hole Depth (ft): 198

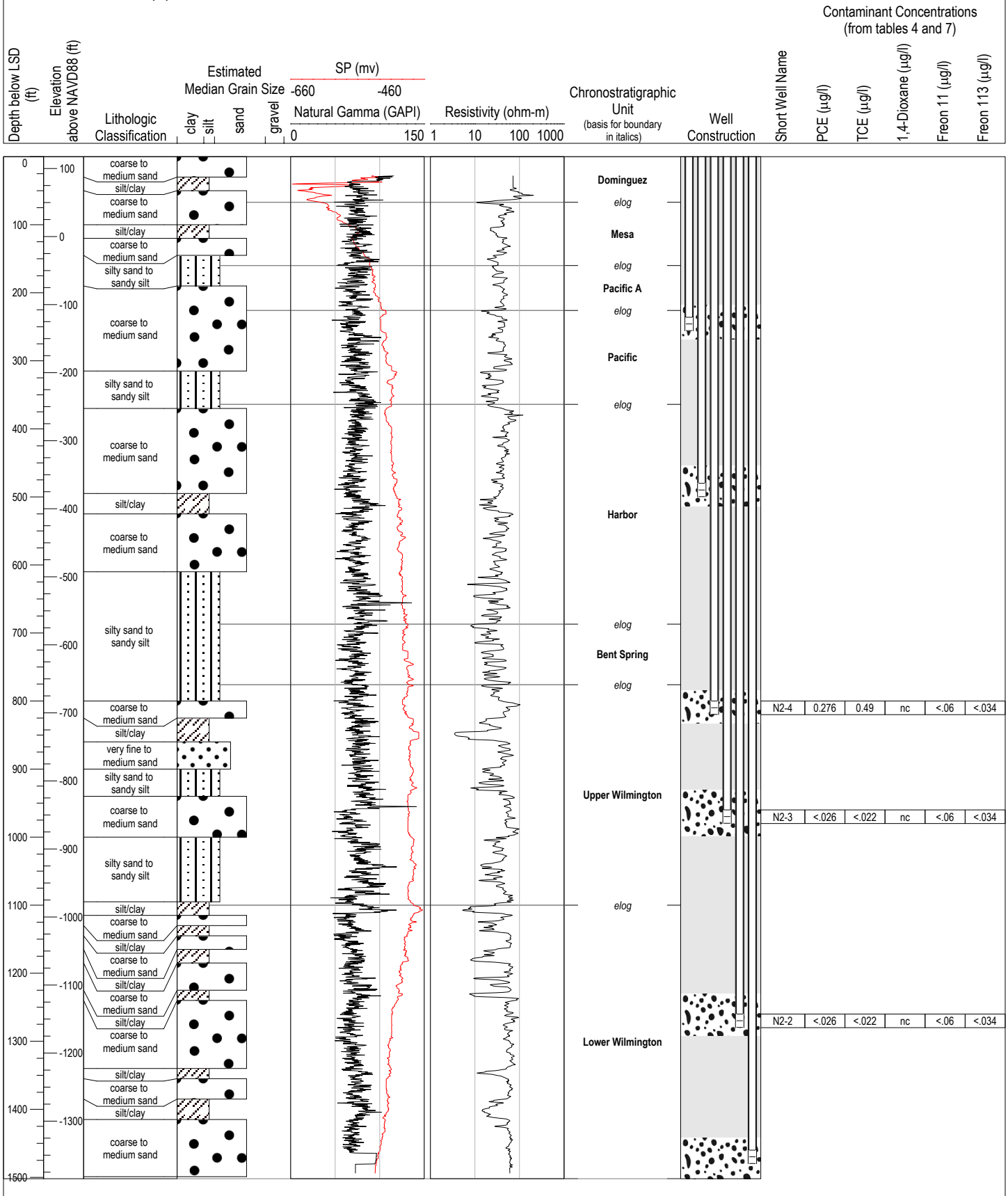
Elevation of LSD (ft): 127.4



Hole Name: Norwalk-2

Hole Depth (ft): 1502

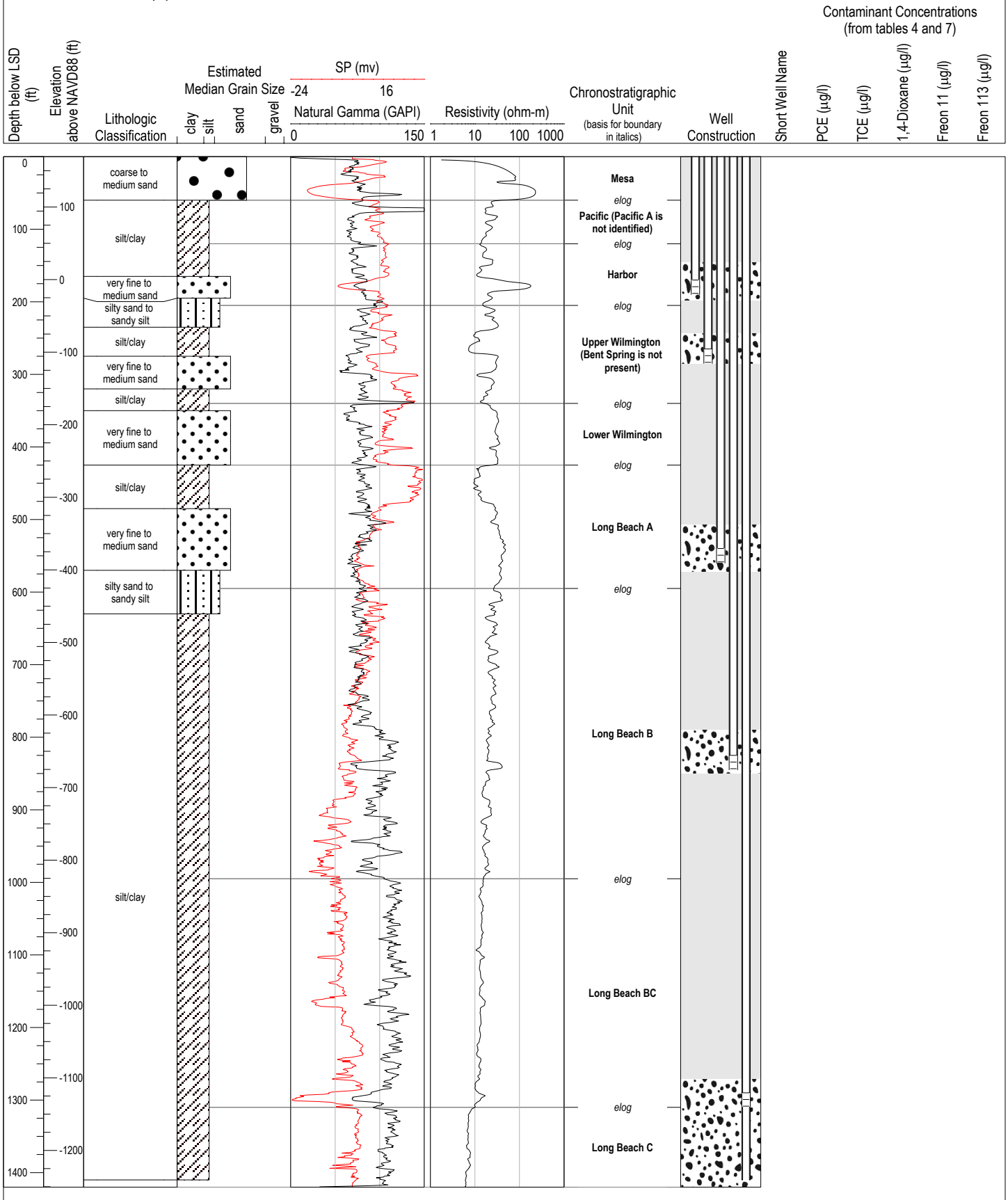
Elevation of LSD (ft): 117.4



Hole Name: Santa Fe Springs-1

Hole Depth (ft): 1420

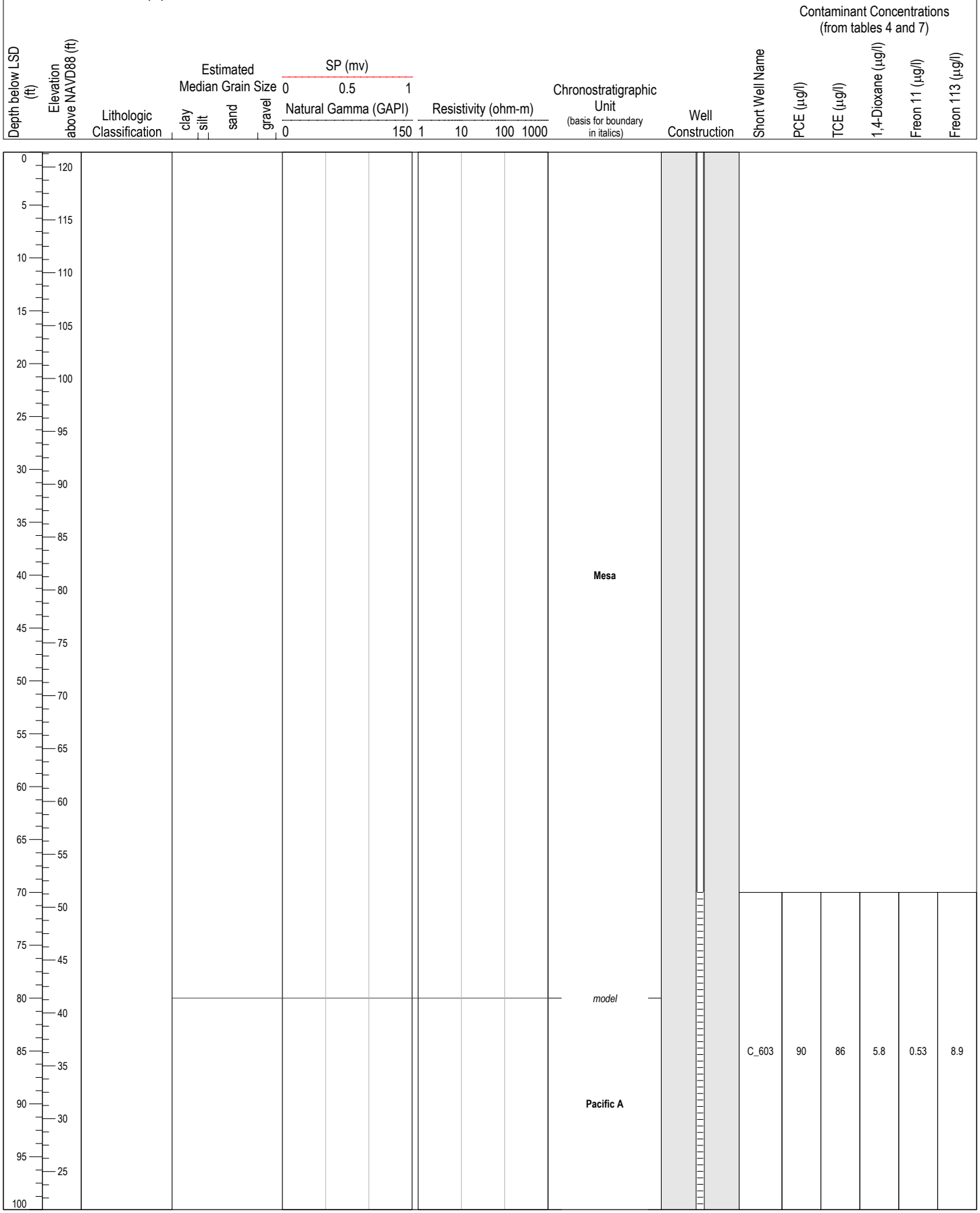
Elevation of LSD (ft): 169.4



Hole Name: C_603

Hole Depth (ft): 100

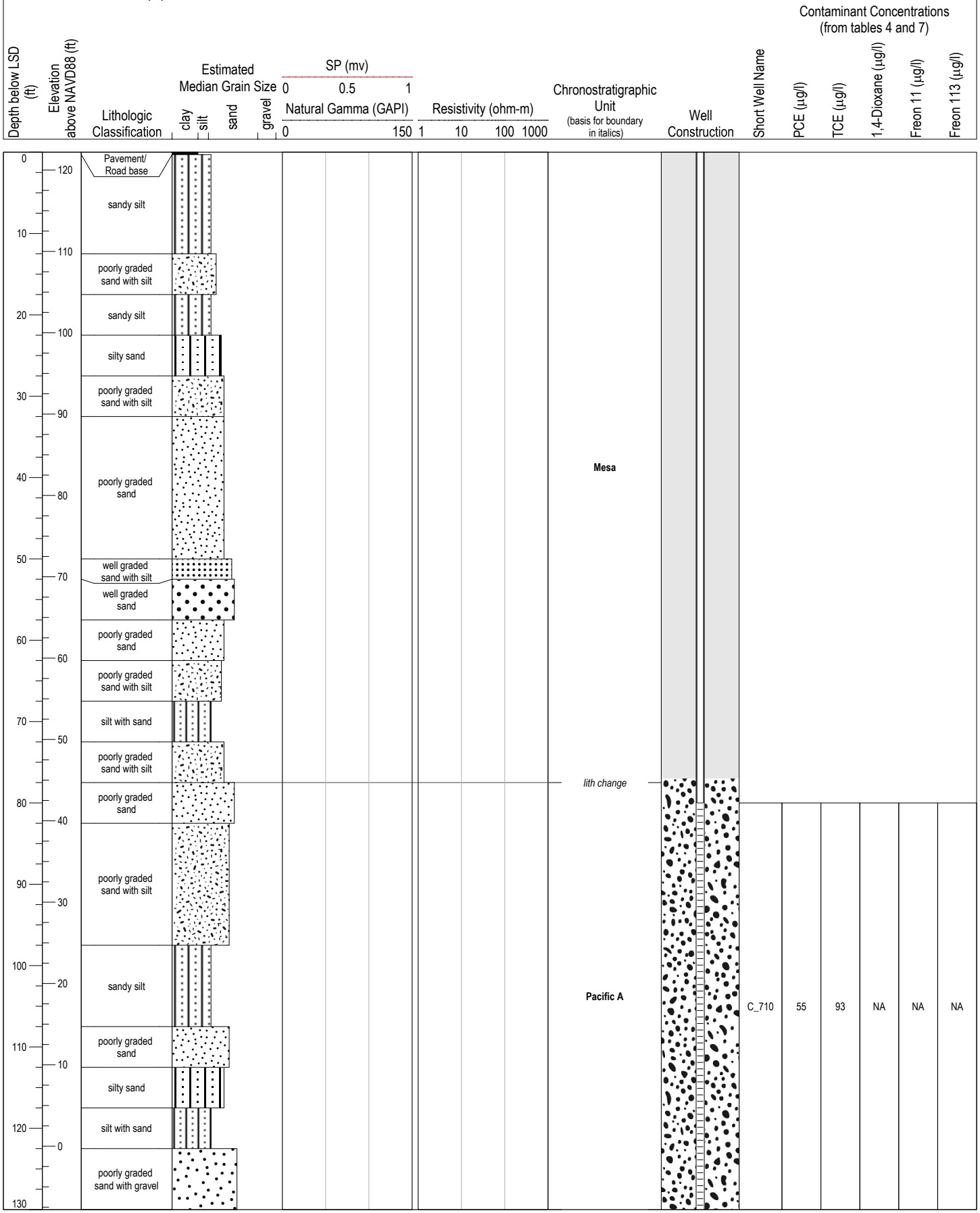
Elevation of LSD (ft): 121.4



Hole Name: C_710

Hole Depth (ft): 130

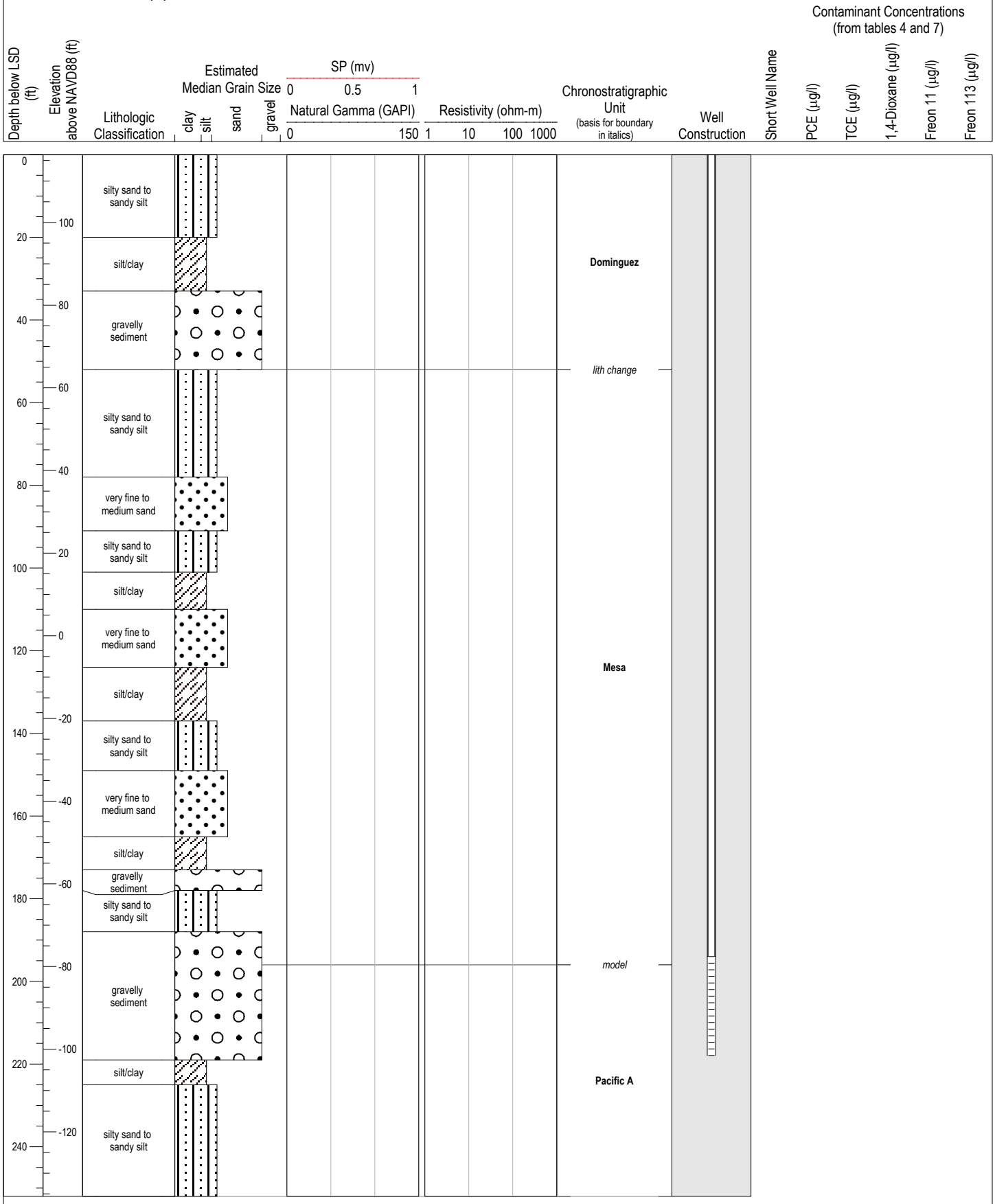
Elevation of LSD (ft): 122.2



Hole Name: 12A2

Hole Depth (ft): 252

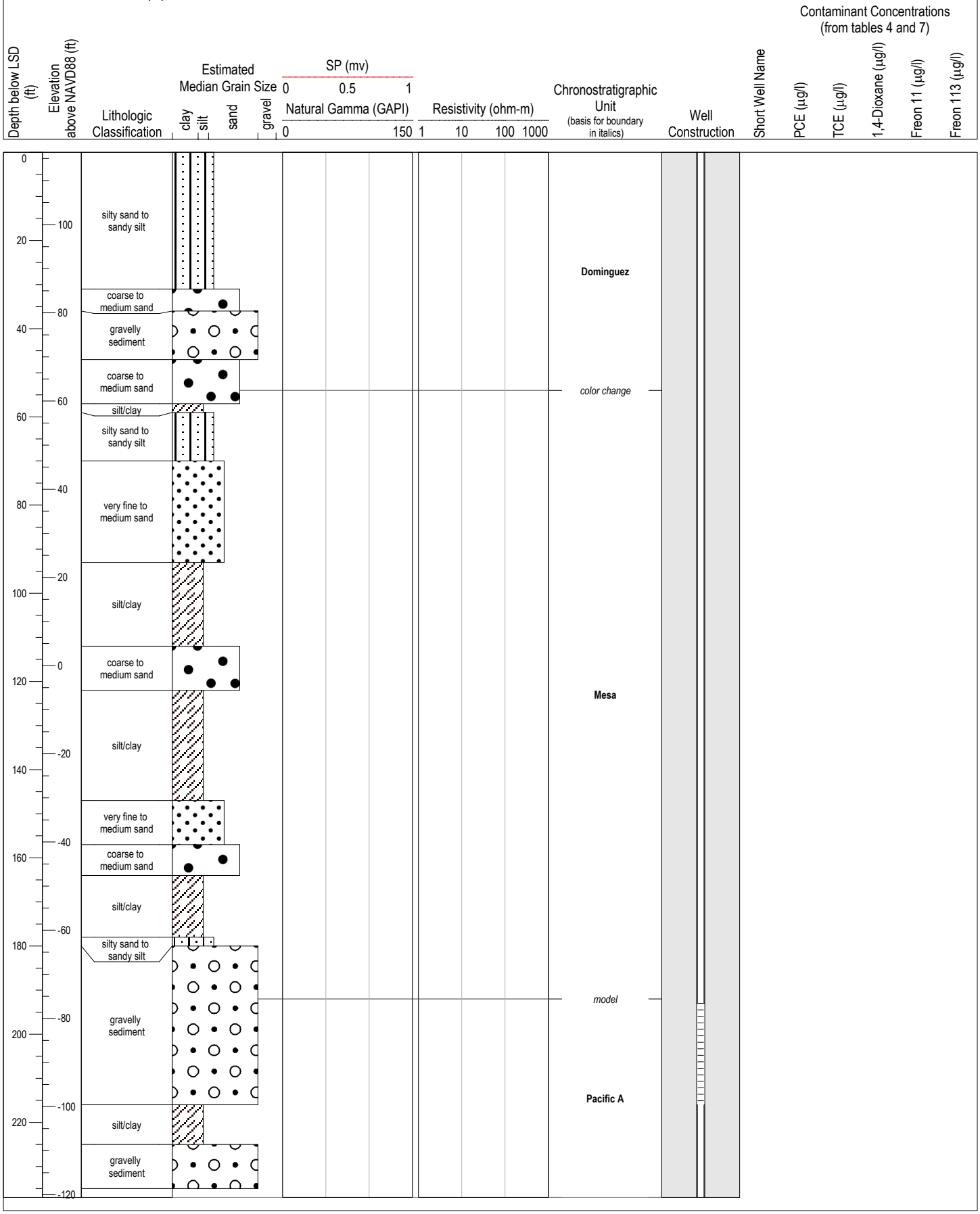
Elevation of LSD (ft): 116.4



Hole Name: 7E1

Hole Depth (ft): 237

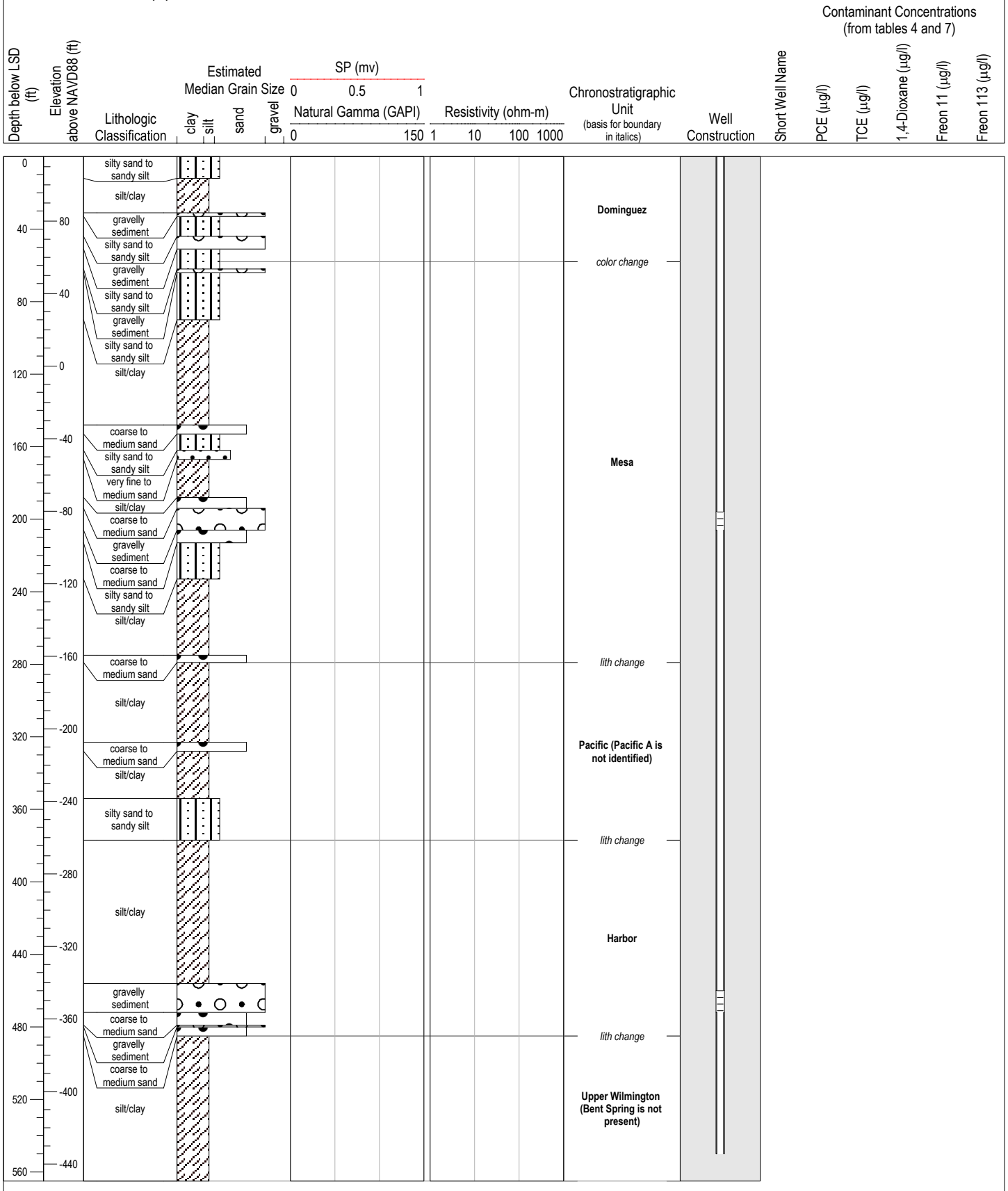
Elevation of LSD (ft): 116.4



Hole Name: 7E2

Hole Depth (ft): 565

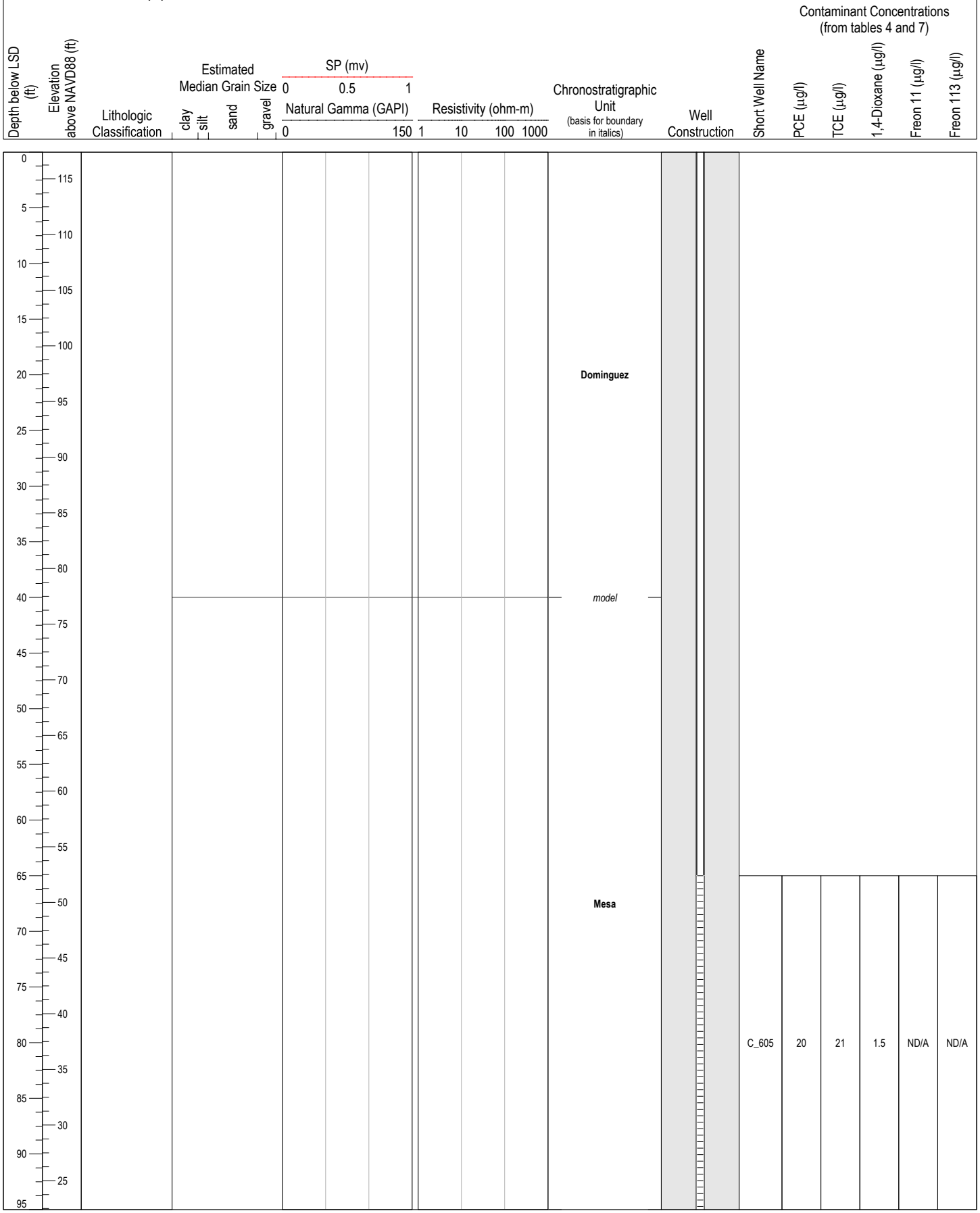
Elevation of LSD (ft): 115.6



Hole Name: C_605

Hole Depth (ft): 95

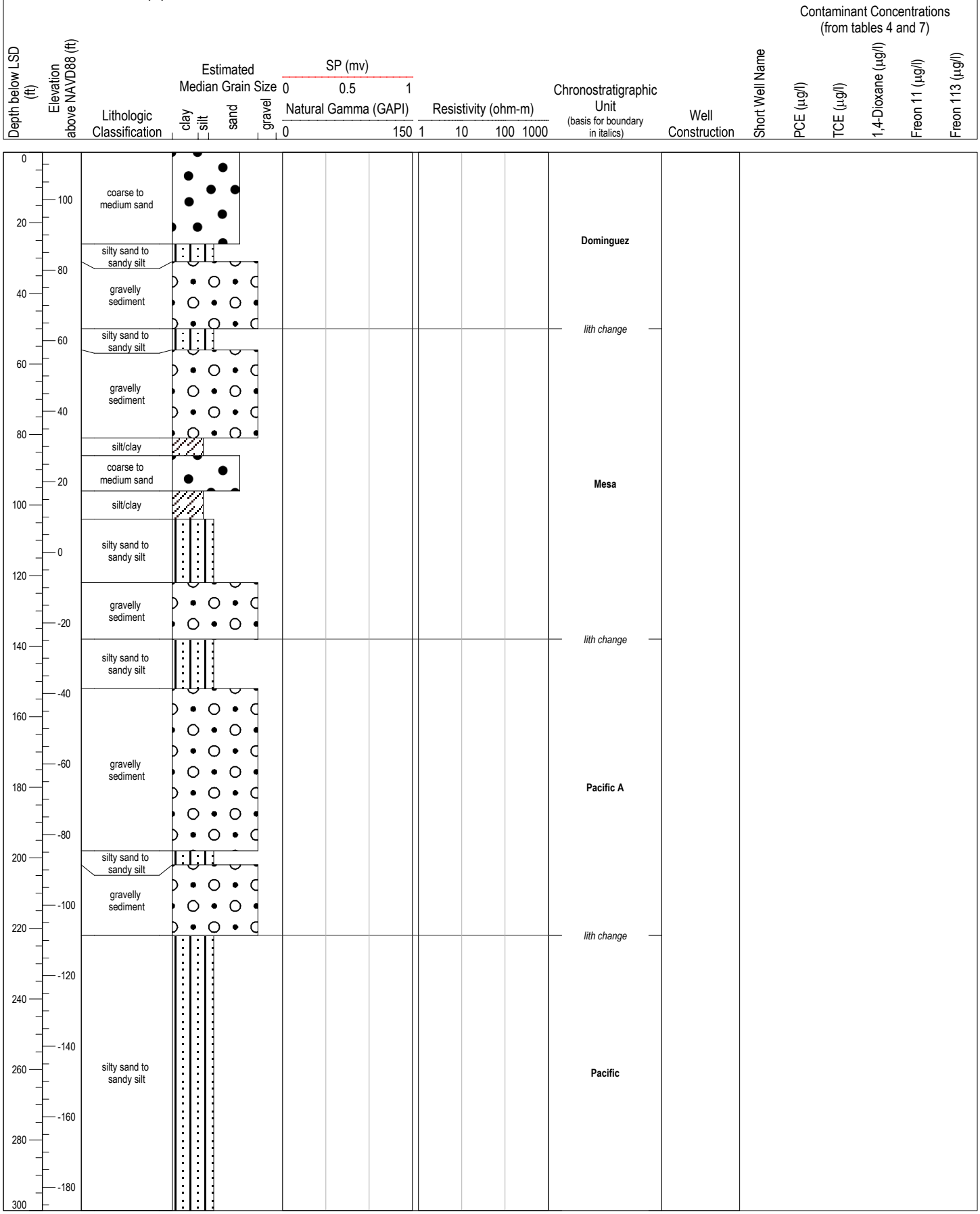
Elevation of LSD (ft): 117.4



Hole Name: M-4

Hole Depth (ft): 300

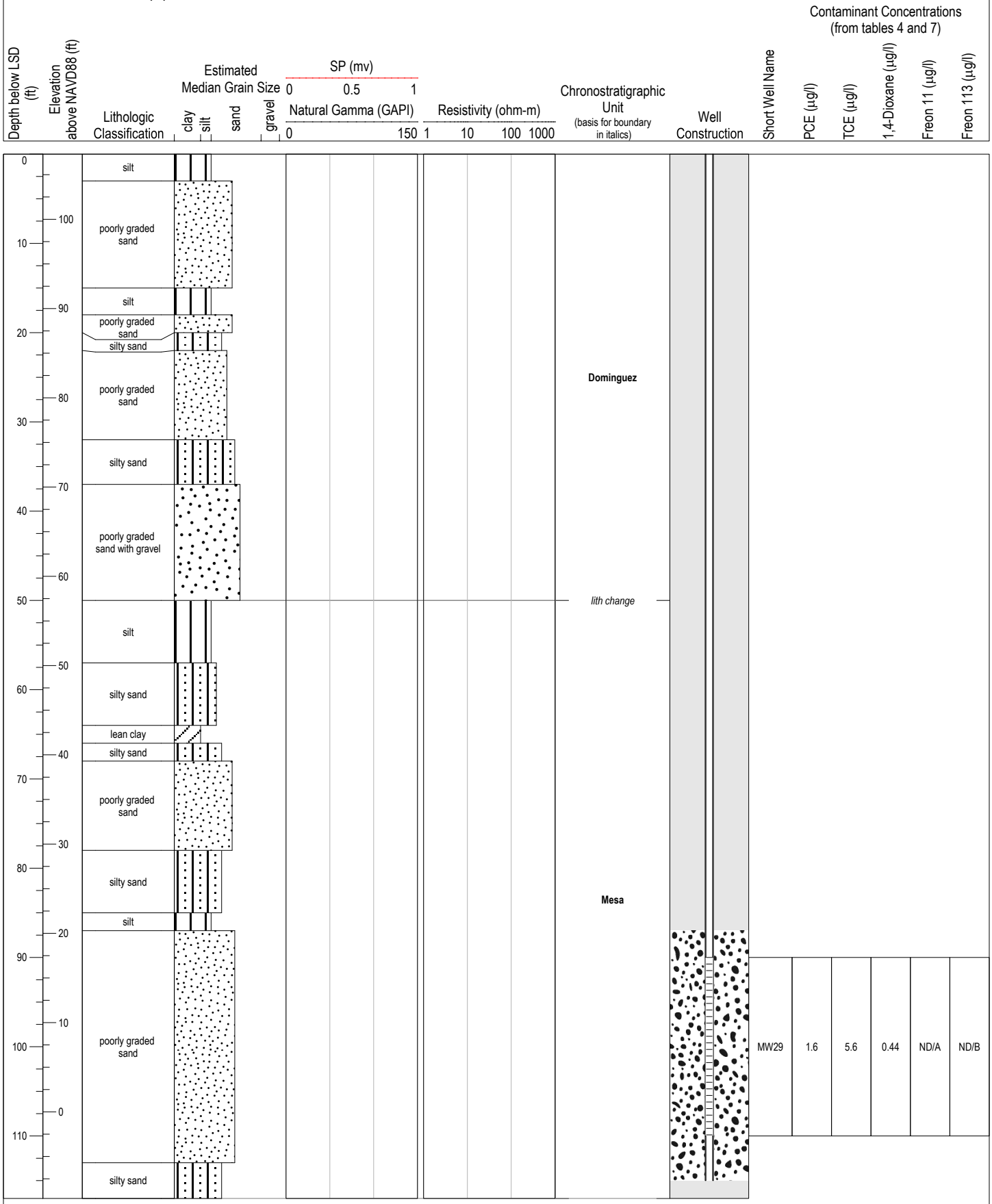
Elevation of LSD (ft): 113.4



Hole Name: MW29

Hole Depth (ft): 117

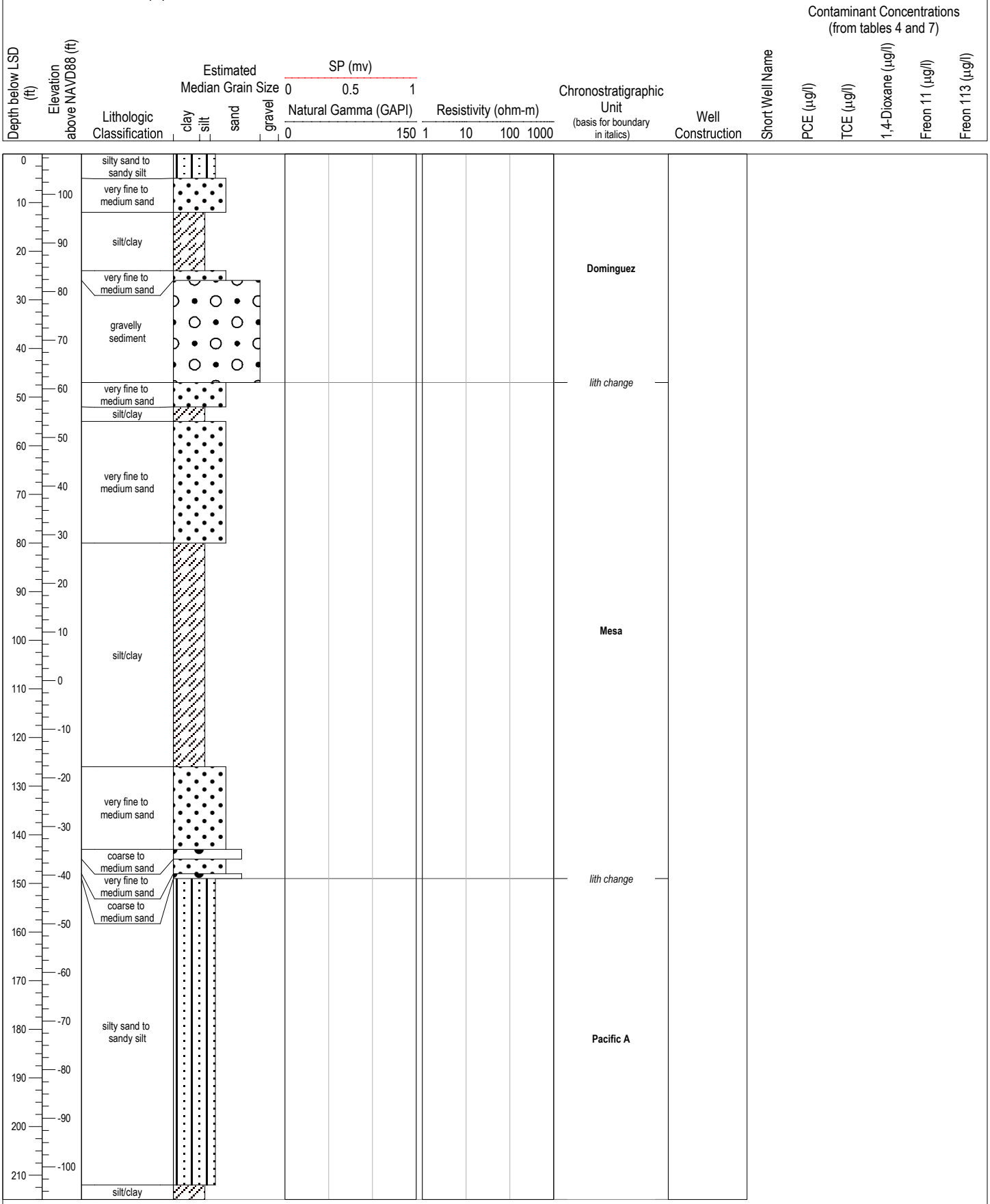
Elevation of LSD (ft): 107.3



Hole Name: 18B1

Hole Depth (ft): 215

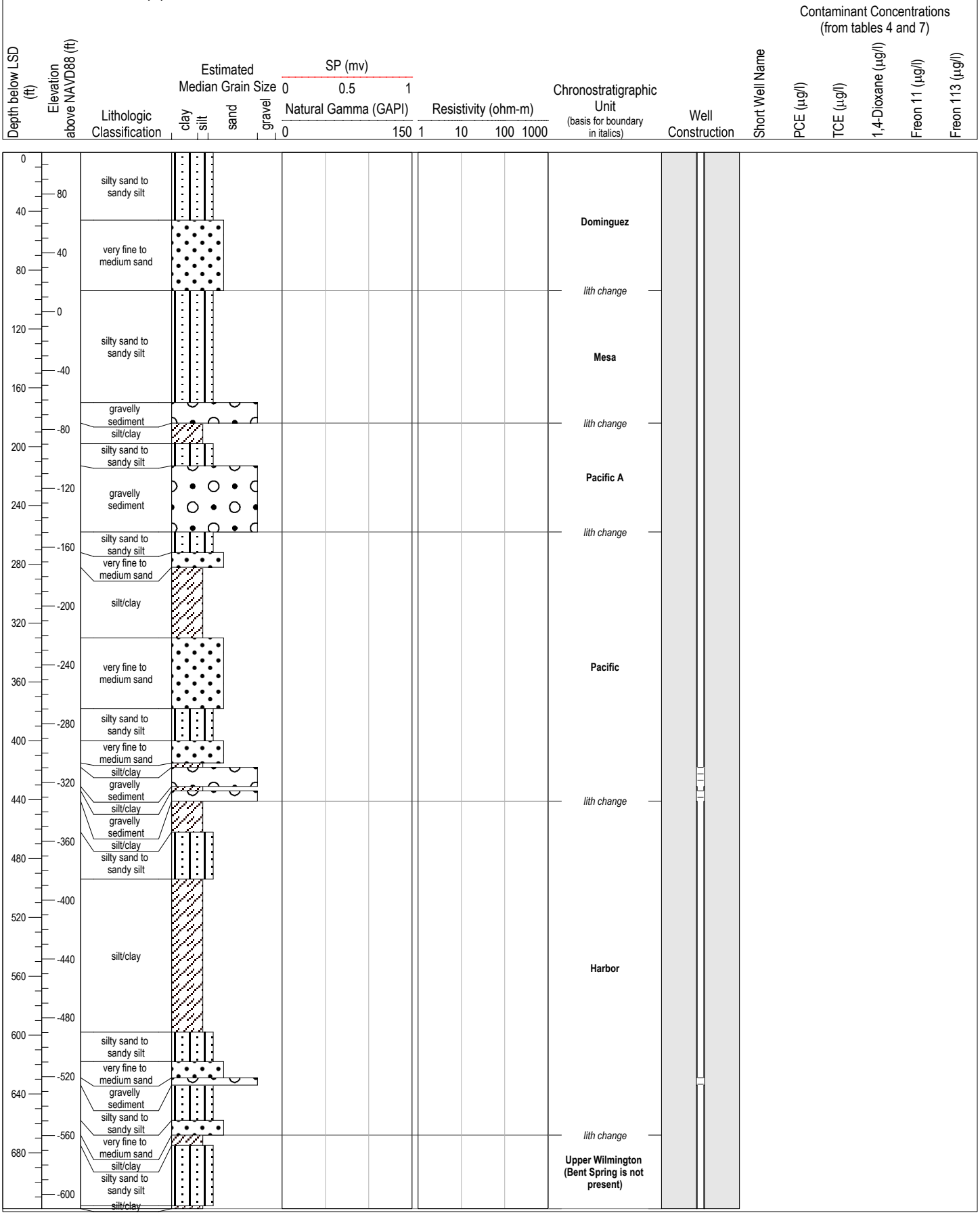
Elevation of LSD (ft): 108.3



Hole Name: 18B5

Hole Depth (ft): 718

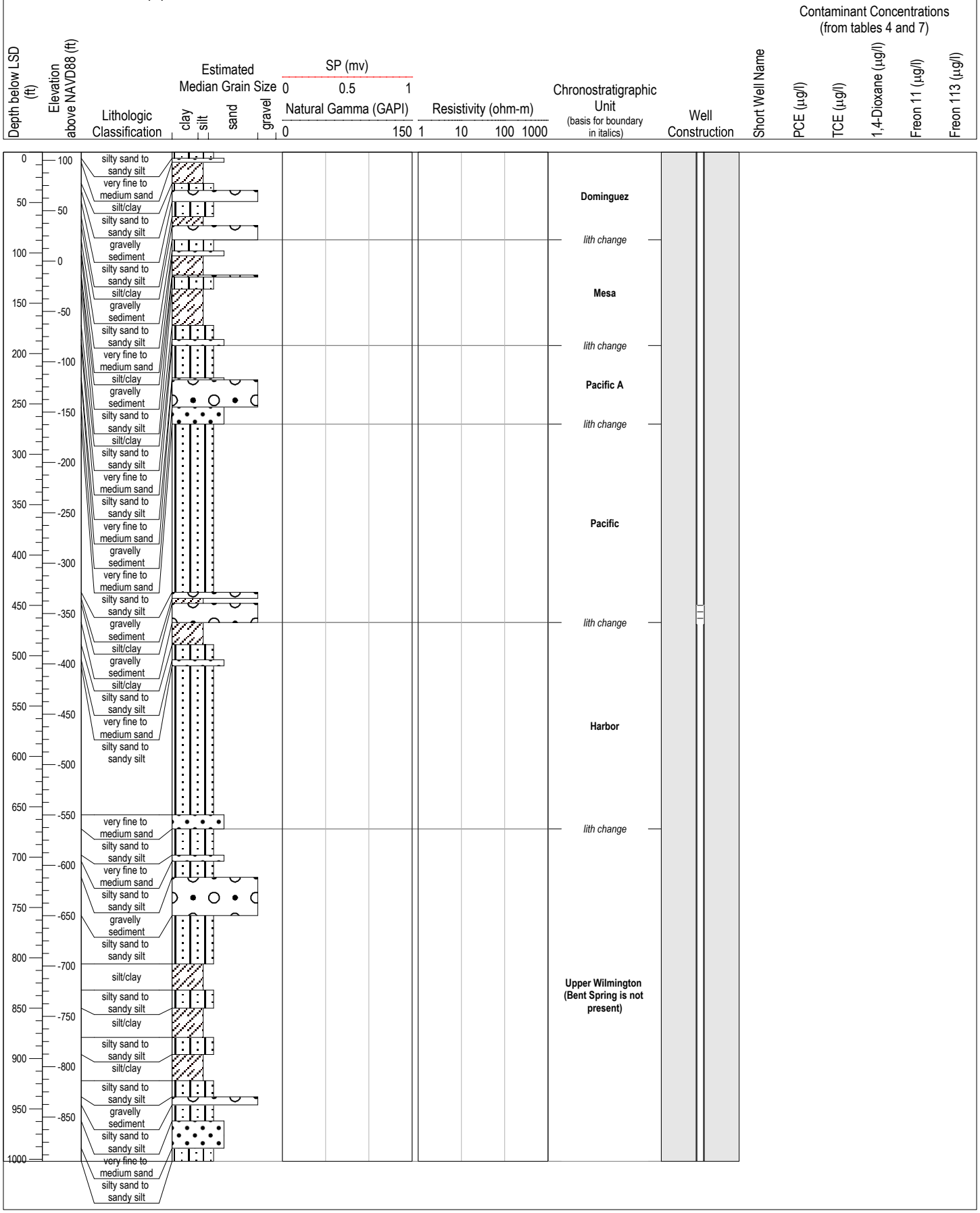
Elevation of LSD (ft): 108.3



Hole Name: 18G1

Hole Depth (ft): 1002

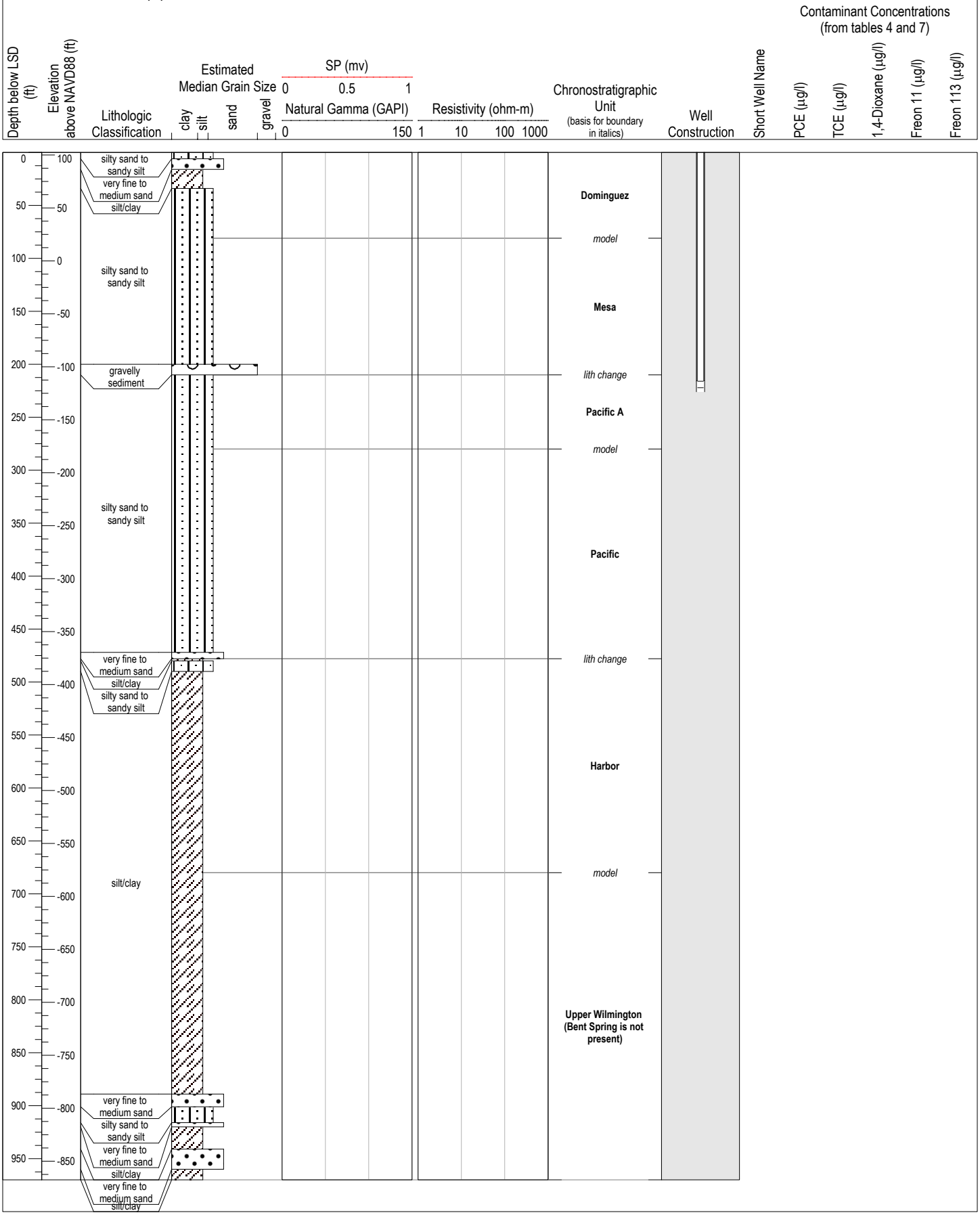
Elevation of LSD (ft): 108.1



Hole Name: 18G4

Hole Depth (ft): 970

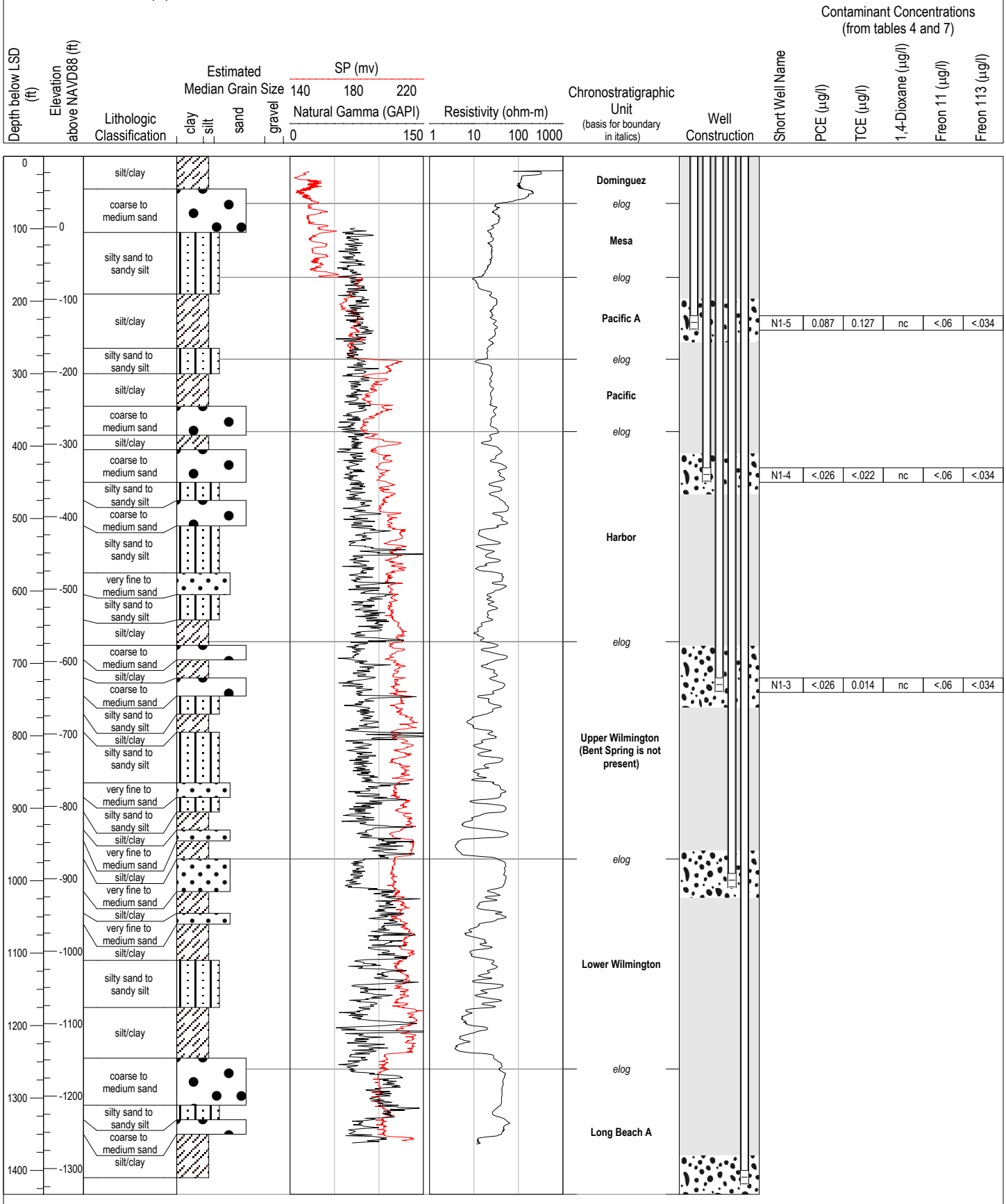
Elevation of LSD (ft): 102.4



Hole Name: Norwalk-1

Hole Depth (ft): 1433

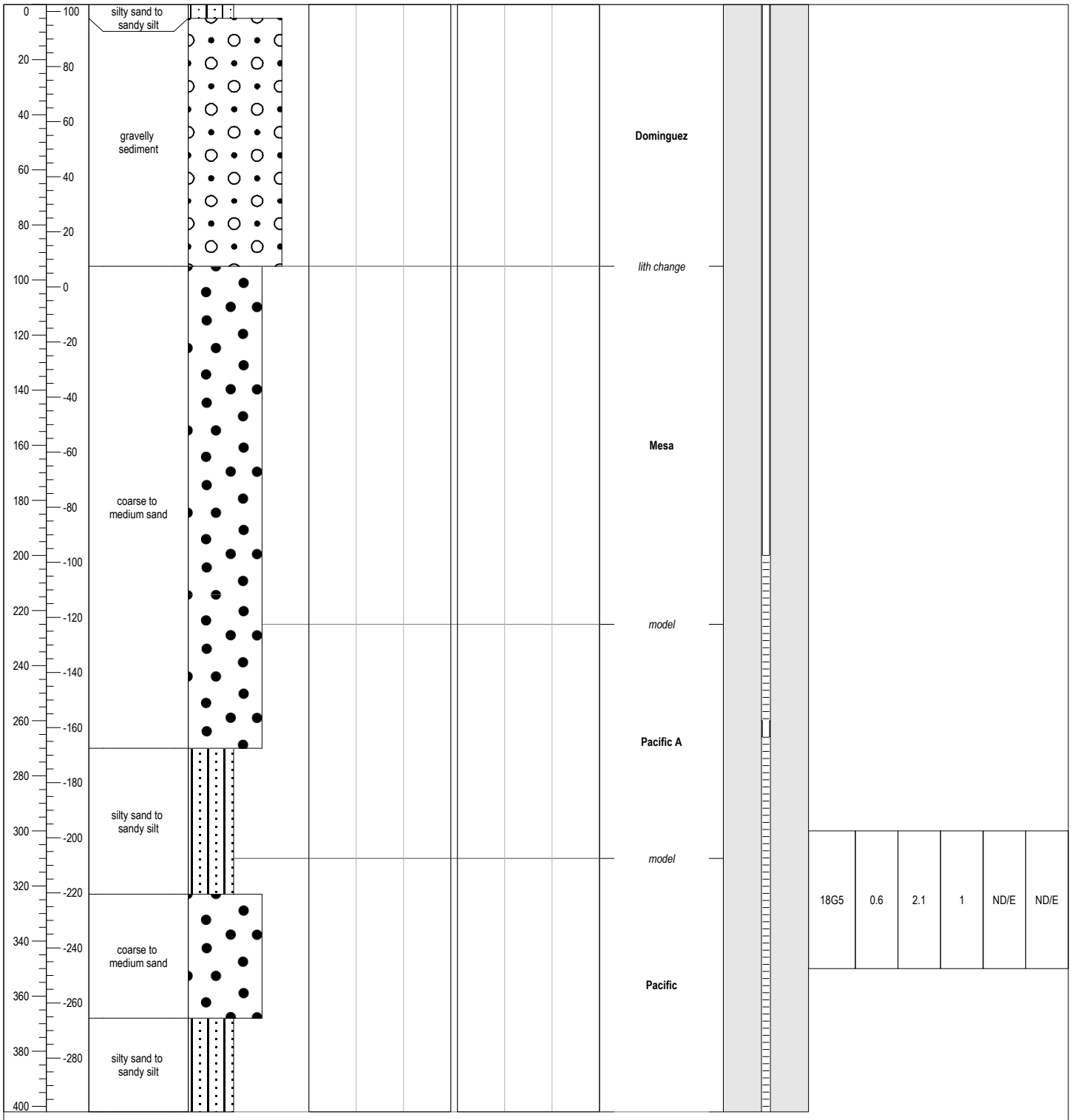
Elevation of LSD (ft): 97.4



Hole Name: 18G5

Hole Depth (ft): 402

Elevation of LSD (ft): 102.5



Contaminant Concentrations (from tables 4 and 7)

Short Well Name	PCE (µg/l)	TCE (µg/l)	1,4-Dioxane (µg/l)	Freon 11 (µg/l)	Freon 113 (µg/l)
18G5	0.6	2.1	1	ND/E	ND/E

Hole Name: 18G6

Hole Depth (ft): 1560

Elevation of LSD (ft): 102