### Depth interval (feet) and description



0–20: Sandy gravel (sG); gravel <20mm with fine to very coarse sand; poorly sorted; subangular to well rounded; strong brown (7.5YR 5/6).



140–160: Slightly gravelly silty sand ((g)mS); fine to coarse sand and silt with minor very coarse sand and gravel <6mm; poorly sorted; subangular to rounded; brown (10YR 5/3) with layers of light yellowish brown (2.5Y 6/3).

Depth interval (feet) and description



20–40: Slightly gravelly sand ((g)S); fine to very coarse sand with gravel <30mm; poorly sorted; subangular to well rounded; strong brown (7.5YR 5/6).



160–180: Silty sand (zS); fine to coarse sand with silt, and trace gravel <7mm; moderately sorted; subangular; grayish brown (10YR 5/6).



40–60: Sand (S); fine to medium with minor coarse to very coarse sand, minor gravel <8mm; moderately sorted; subangular to subrounded; brown (10YR 5/3).



180–200: Gravelly sand (gS); fine to coarse with minor very coarse sand and gravel <10mm; poorly sorted; subangular to rounded; yellowish brown (10YR 5/6).



60–80: Sandy silty clay (sM); clay with silt and fine to medium sand; moderately sorted; subangular to subrounded sand; brown (10YR 5/3).



200–220: Gravelly sand (gS); fine to coarse with minor very coarse sand and gravel <15mm; moderately sorted; subangular to rounded; yellowish brown (10YR 5/6).



80–100: Silty clay (M); clay with silt and minor very fine to fine sand; moderately sorted; subangular to subrounded; brown (10YR 5/3).



220–240: Slightly gravelly sand ((g)S); fine to medium sand with minor coarse to very coarse sand and gravel <5mm; moderately sorted, subangular to subrounded; yellowish brown (10YR 5/6).



100–120: Silty sand (zS); fine to medium sand, silt, and minor coarse sand; moderately sorted; subangular to subrounded; brown (10YR 5/3).



240–260: Gravelly sand (gS); very fine to medium sand with gravel <20mm; poorly sorted; subangular to rounded; yellowish brown (10YR 5/6).



120–140: Silty sand (zS); very fine to medium sand with silt, clay, and minor gravel <6mm; poorly sorted; subangular to rounded; brown (7.5YR 4/4).



260–280: Sand (S); fine to medium sand with minor coarse to very coarse sand; well sorted; subangular to subrounded; light yellowish brown (10YR 6/4).

Figure 180. Lithologic descriptions and photographs of sieve drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDCD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDCP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.

### Depth interval (feet) and description Depth interval (feet) and description 280-300: Sand (S); fine to medium sand 420-440: Sand (S); very fine to fine with minor coarse sand; well sorted: sand; well sorted, subangular to subangular to subrounded; brown subrounded; dark gray (2.5Y 4/1). (10YR 4/3).440-460: Sandy silt (sZ); silt with very 300-320: Sand (S); fine to medium sand with minor coarse sand; well sorted; fine to fine sand; well sorted; dark gray subangular to subrounded; brown (2.5Y 4/1); abundant shell fragments. (10YR 4/3). 320-340: Sand (S); fine to medium 460–480: Silty sand (zS); very fine to sand; well sorted; subangular to fine sand with silt; well sorted; subrounded; yellowish brown (10YR subangular to subrounded; dark gray (2.5Y 4/1); abundant shell fragments. 340–360: Sand (S): fine to medium 480-500: Silty sand (zS); very fine to fine sand with silt; well sorted; sand; well sorted; subangular to subangular to subrounded; dark gray subrounded; yellowish brown (10YR (2.5Y 4/1). 360-380: Sand (S); fine to coarse sand; 500-520: Silty sand (zS); very fine to well sorted; subangular to subrounded; fine sand with silt; well sorted; yellowish brown (10YR 5/6). subangular to subrounded; dark gray (2.5Y 4/1).520-540: Silty sand (zS); very fine to 380-400: Sand (S); very fine to sand; moderately sorted; subangular to fine sand with silt and trace gravel <5mm; well sorted; subangular to subrounded; yellowish brown (10YR subrounded; dark gray (2.5Y 4/1). 5/6). 400–420: Sandy gravel (sG); gravel 540-560: Silty sand (zS); very fine to <15mm with very fine to fine sand with medium sand with silt; moderately minor medium to coarse sand; poorly sorted; subangular to subrounded; dark sorted; subangular to rounded; light gray (2.5Y 4/1). yellowish brown (10YR 6/4).

Figure 180. Lithologic descriptions and photographs of sieve drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDCD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDCP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.—Continued.

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# Depth interval (feet) and description Depth interval (feet) and description 560-580: Sand (S); very fine to fine 700–720: Clayey silt (M); silt with clay; sand with minor medium to coarse sand very well sorted; dark gray (2.5Y 4/1). and silt; moderately sorted; subangular to rounded; dark gray (2.5Y 4/1). 580-600: Sandy clayey silt (sM); silt 720-740: Silty clay (M); clay with silt; with clay and very fine sand; well very well sorted; dark gray (2.5Y 4/1). sorted; dark gray (2.5Y 4/1). 600-620: Sandy clayey silt (sM); silt 740–760: Silty clay (M); clay with silt; with clay and very fine sand; well very well sorted; dark gray (2.5Y 4/1). sorted; dark gray (2.5Y 4/1). 620-640: Clayey silt (M); silt with clay; 760–780: Silty clay (M); clay with silt; very well sorted; dark gray (2.5Y 4/1). very well sorted; dark gray (2.5Y 4/1). 640–660: Clayey silt (M); silt with clay; 780–800: Silty clay (M); clay with silt; very well sorted; dark gray (2.5Y 4/1). very well sorted; dark gray (2.5Y 4/1). 660–680: Clayey silt (M); silt with clay; 800–820: Silty clay (M); clay with silt; very well sorted; dark gray (2.5Y 4/1); very well sorted; dark gray (2.5Y 4/1). abundant shell fragments. 680–700: Clayey silt (M); silt with clay; 820–840: Silty clay (M); clay with silt; very well sorted; dark gray (2.5Y 4/1). very well sorted; dark gray (2.5Y 4/1).

Figure 180. Lithologic descriptions and photographs of sieve drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDCD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDCP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.—Continued.

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## Depth interval (feet) and description Depth interval (feet) and description 840-860: Clay (C); clay; very well 980-1,000: Clayey silt (M); silt with clay; well sorted; dark gray (2.5Y 4/1). sorted; dark gray (2.5Y 4/1). 860-880: Clay (C); clay; very well 1,000-1,020: Silty sand (zS); very fine sorted; dark gray (2.5Y 4/1). to fine sand and silt with minor clay; well to moderately sorted; subangular to subrounded; dark gray (2.5Y 4/1). 1,020–1,040: Clayey silty sand (mS); 880-900: Clay (C); clay; very well sorted; dark gray (2.5Y 4/1). very fine sand with silt and clay; well sorted; subangular to subrounded; dark gray (2.5Y 4/1). 1,040–1,060: Clayey silty sand (mS); 900-920: Silty sand (zS); very fine to very fine sand with silt and clay; well medium sand with silt; moderately sorted; subangular to subrounded; dark sorted; subangular to subrounded; dark gray (2.5 4/1); minor shell fragments. gray (2.5Y 4/1). 920-940: Clay (C); clay; very well 1,060-1,080: Clayey silty sand (mS); sorted; dark gray (2.5Y 4/1). very fine sand with silt and clay; moderately to well sorted; subangular to subrounded; dark gray (2.5Y 4/1). 940-960: Clay (C); clay; very well 1,080–1,100: Clayey silty sand (mS); very fine sand with silt and clay; sorted; dark gray (2.5Y 4/1). moderately sorted; subangular to subrounded; dark gray (2.5Y 4/1). 960-980: Clay (C); clay; very well 1,100-1,120: Silty clay (M); clay with

Figure 180. Lithologic descriptions and photographs of sieve drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDCD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDCP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.—Continued.

silt and minor very fine sand; well sorted; dark gray (2.5Y 4/1).

sorted; dark gray (2.5Y 4/1).

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### Depth interval (feet) and description



Depth interval (feet) and description

1,120-1,140: Silty clay (M); clay with silt and minor very fine sand; well sorted; dark gray (2.5Y 4/1); abundant shell fragments.



1,260-1,280: Silty sand (zS); very fine sand with silt; very well sorted; subangular to subrounded; dark gray (2.5Y 4/1).



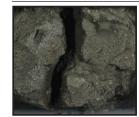
1,140-1,160: Clayey silt (M); silt with clay; very well sorted; dark gray (2.5Y 4/1).



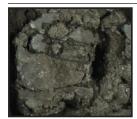
1,280-1,300: Silty sand (zS); very fine sand with silt; very well sorted; subangular to subrounded; dark gray (2.5Y 4/1).



1,160-1,180: Clayey silt (M); silt with clay; very well sorted; dark gray (2.5Y 4/1).



1,300–1,320: Sandy silt (sZ); silt with very fine sand; very well sorted; subangular to subrounded sand; dark gray (2.5Y 4/1).



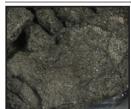
1,180-1,200: Clayey silt (M); silt with clay; very well sorted; dark gray (2.5Y 4/1).



1,320-1,340: Silt (Z); silt; very well sorted; dark gray (2.5Y 4/1).



1,200-1,220: Clayey silty sand (mS); very fine to fine sand with silt and clay; moderately to well sorted; subangular to subrounded; dark gray (2.5Y 4/1).



1,340-1,360: Sand (S); very fine sand with minor silt; very well sorted; subangular to subrounded; dark gray (2.5Y 4/1).



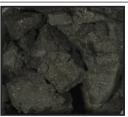
1,220-1,240: Silty sand (zS); very fine sand with silt; well sorted; subangular to subrounded; dark gray (2.5Y 4/1).



1,360–1,380: Silt (Z); silt; very well sorted; dark grayish brown (2.5Y 4/2).



1,240-1,260: Clayey silt (M); silt with clay and minor very fine sand; very well sorted; dark gray (2.5Y 4/1).



1,380-1,400: Sandy silt (sZ); silt with very fine sand; very well sorted; dark grayish brown (2.5Y 4/2).

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### Depth interval (feet) and description



1,400–1,420: Silt (Z); silt with minor very fine sand; very well sorted; dark grayish brown (2.5Y 4/2).



1,540–1,560: Sand (S); very fine to fine with minor medium sand; moderately to well sorted; subangular to subrounded; dark grayish brown (2.5Y 4/2).

Depth interval (feet) and description



1,420–1,440: Silt (Z); silt with minor very fine sand; very well sorted; dark grayish brown (2.5Y 4/2).



1,560–1,580: Sand (S); very fine to fine sand with minor medium sand and silt; moderately sorted; subangular to subrounded; dark grayish brown (2.5Y 4/2).



1,440–1,460: Silt (Z); silt; very well sorted; dark grayish brown (2.5Y 4/2).

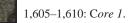


1,580–1,600: Sandy silt (sZ); silt with very fine sand; well sorted; dark grayish brown (2.5Y 4/2).

1,600–1,605: No sieve sample collected.



1,460–1,480: Silt (Z); silt; very well sorted; dark grayish brown (2.5Y 4/2).

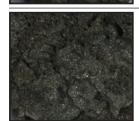




1,480–1,500: Silt (Z); silt; very well sorted; dark grayish brown (2.5Y 4/2).



1,500–1,520: Silt (Z); silt; very well sorted; dark grayish brown (2.5Y 4/2).



1,520–1,540: Silty sand (zS); very fine to fine sand with silt; well sorted; subangular to subrounded; dark grayish brown (2.5Y 4/2).

Figure 180. Lithologic descriptions and photographs of sieve drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDCD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDCP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.—Continued.

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