


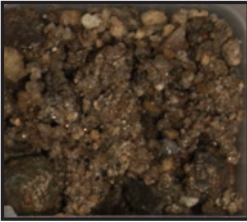

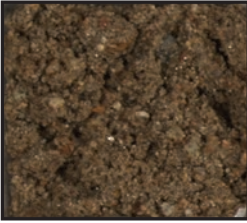




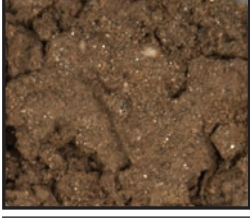



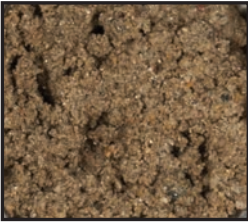

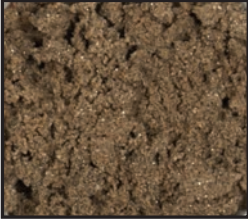
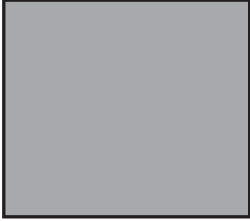


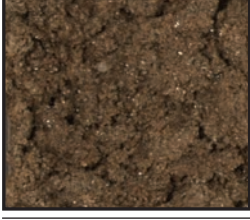
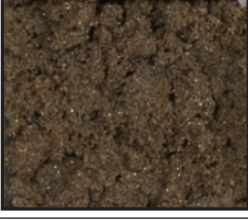

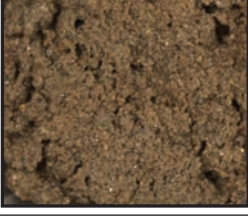
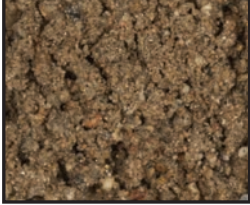

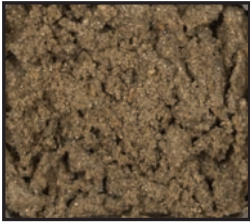
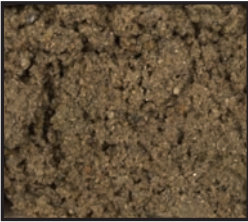

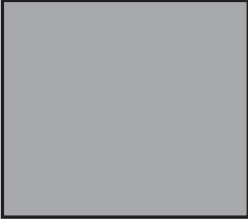

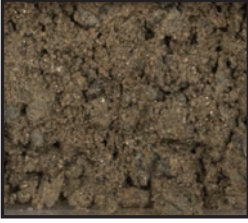


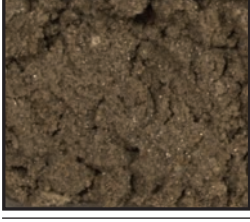

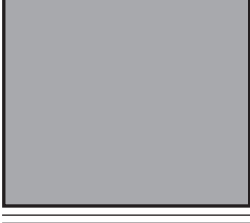





Depth interval (feet) and description	Depth interval (feet) and description
 <p>0–18: Sand (S); medium to very coarse sand; moderately sorted; very angular to angular; dark grayish brown (2.5Y 4/2).</p>	 <p>108–126: No sieve sample collected; <i>cores 3, 4, 5, and 6.</i></p>
 <p>18–28: No sieve sample collected; <i>cores 1 and 2.</i></p>	 <p>126–131: Gravelly sand ((g)S); medium to very coarse sand, and granules to medium pebbles; very poorly sorted; subrounded; olive brown (2.5Y 4/3).</p>
 <p>28–38: Slightly gravelly silty sand ((g)mS); fine to medium sand, silt, and granules; poorly to moderately sorted; angular; very dark grayish brown (2.5Y 3/2).</p>	 <p>131–151: Slightly gravelly sand ((g)S); medium to very coarse sand, and granules to small pebbles; very poorly to poorly sorted; subrounded to rounded; light olive brown (2.5Y 5/4).</p>
 <p>38–58: Slightly gravelly sand ((g)S); coarse to very coarse sand and granules; poorly to moderately sorted; angular; dark yellowish brown (10YR 4/6).</p>	 <p>151–158: Sandy clay (sC); clay and fine to medium sand; poorly to moderately sorted; dark yellowish brown (10YR 4/4).</p>
 <p>58–78: Sandy silt (sZ); silt and very fine sand; well sorted; dark yellowish brown (10YR 4/6).</p>	 <p>158–168: Sandy clay (sC); clay and very fine to medium sand; poorly to moderately sorted; brown (10YR 4/3).</p>
 <p>78–98: Sandy clay (sC); clay and very fine to medium sand; poorly to moderately sorted; yellowish brown (10YR 5/4).</p>	 <p>168–183: No sieve sample collected; <i>cores 7 and 8.</i></p>
 <p>98–108: Sandy silt (sZ); silt and very fine to medium sand; poorly to moderately sorted; dark yellowish brown (10YR 4/4).</p>	 <p>183–198: Gravelly sand (gS); medium to very coarse sand, and granules to medium pebbles with minor clay; very poorly sorted; subrounded; dark yellowish brown (10YR 4/4).</p>




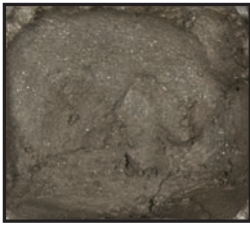

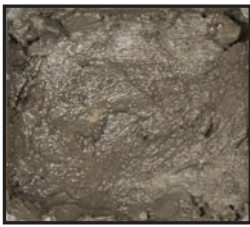








**Figure 18J.** Lithologic descriptions and photographs of **sieve** drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDGD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDGP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (**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
 <p>198–218: Gravelly sand (gS); medium to very coarse sand, and granules; poorly sorted; subrounded; yellowish brown (10YR 5/6).</p>	 <p>318–338: Slightly gravelly sand ((g)S); medium to very coarse sand and granules; poorly to moderately sorted; subangular; olive brown (2.5Y 4/4).</p>
 <p>218–228: Sandy clay (sC); clay and fine to medium sand; poorly to moderately sorted; brown (10YR 4/3).</p>	 <p>338–358: Sand (S); medium to coarse sand; well sorted; subangular; olive brown (2.5Y 4/4).</p>
 <p>228–253: No sieve sample collected; <i>cores 9, 10, 11, 12, and 13.</i></p>	 <p>358–378: Slightly gravelly sand ((g)S); medium to very coarse sand, and granules to small pebbles; moderately sorted; subangular; olive brown (2.5Y 4/4).</p>
 <p>253–258: Sand (S); medium to coarse sand; well sorted; subangular to subrounded; dark yellowish brown (10YR 4/4).</p>	 <p>378–393: Slightly gravelly sand ((g)S); medium to very coarse sand, and granules to small pebbles; moderately sorted; subrounded; olive brown (2.5Y 4/4).</p>
 <p>258–278: Sand (S); medium to coarse sand with minor clay; well sorted; subangular; brown (10YR 4/3).</p>	 <p>393–398: Sand (S); medium to coarse sand with trace granules to medium pebbles ; well sorted; subangular to subrounded; olive brown (2.5Y 4/3).</p>
 <p>278–298: Sand (S); medium to coarse sand with minor clay; well sorted; subangular; brown (10YR 4/3).</p>	 <p>398–418: Sand (S); medium to very coarse sand with trace granules to small pebbles; well sorted; subangular to subrounded; olive brown (2.5Y 4/4).</p>
 <p>298–318: Slightly gravelly sand ((g)S); coarse to very coarse sand, and granules; moderately sorted; subangular; olive brown (2.5Y 4/4).</p>	 <p>418–438: Clayey sand (cS); fine to very coarse sand and clay with trace granules to small pebbles; very poorly sorted; subangular; light olive brown (2.5Y 5/3).</p>

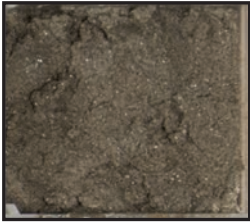
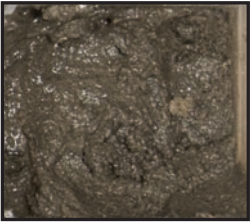
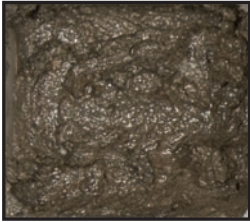

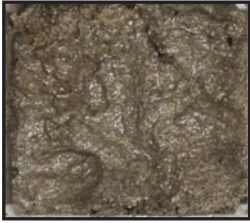



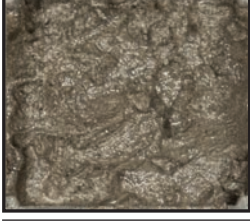
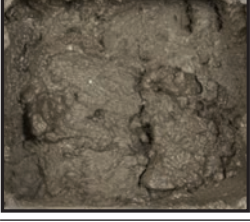




**Figure 18J.** Lithologic descriptions and photographs of **sieve** drill cuttings collected from the borehole at 16 USGS multiple-depth, monitoring-well sites in San Diego County, California, 1995, 2003–2017: (A) SDGD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDGP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (**J**) **SDSW**; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW. —Continued.

Depth interval (feet) and description	Depth interval (feet) and description
 <p>438–458: Sand (S); medium to coarse sand; well sorted; subrounded; olive brown (2.5Y 4/3).</p>	 <p>591–611: Sand (S); medium to very coarse sand; moderately to well sorted; subangular; olive brown (2.5Y 4/3).</p>
 <p>458–478: Sand (S); medium to coarse sand; well sorted; subrounded; olive brown (2.5Y 4/3).</p>	 <p>611–621: No sieve sample collected; <i>cores 18 and 19.</i></p>
 <p>478–498: Sand (S); medium to very coarse sand; moderately sorted; subangular to subrounded; olive brown (2.5Y 4/3).</p>	 <p>621–631: Clayey sand (cS); medium to coarse sand, and clay with trace granules; poorly to moderately sorted; subangular; olive brown (2.5Y 4/3).</p>
 <p>498–518: Sand (S); medium to very coarse sand; poorly to moderately sorted; subangular; olive brown (2.5Y 4/3).</p>	 <p>631–637: Sand (S); medium to very coarse sand with trace granules; moderately to well sorted; subangular; olive brown (2.5Y 4/3).</p>
 <p>518–538: Sand (S); medium to very coarse sand; poorly to moderately sorted; subangular; olive brown (2.5Y 4/3).</p>	 <p>637–638: No sieve sample collected.</p>
 <p>538–566: No sieve sample collected; <i>cores 14, 15, 16, and 17.</i></p> <p>566–571: No sieve sample collected.</p>	 <p>638–658: Sand (S); medium to coarse sand; well sorted; subangular; olive brown (2.5Y 4/3).</p>
 <p>571–591: Clayey sand (cS); medium to very coarse sand, and clay; poorly to moderately sorted; subangular; olive brown (2.5Y 4/3).</p>	 <p>658–678: Sand (S); medium to coarse sand; well sorted; subangular; olive brown (2.5Y 4/3).</p>




**Figure 18J.** 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.

Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description
	678–698: Sand (S); medium to very coarse sand; moderately to well sorted; subangular; olive brown (2.5Y 4/3).		820–840: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).
	698–728: No sieve sample collected; cores 20, 21, 22, 23, 24, and 25.  728–730: No sieve sample collected.		840–860: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).
	730–740: Clayey sand (cS); very fine to medium sand and clay; moderately to well sorted; very angular; very dark gray (2.5Y 3/1); trace 1–2 mm shell fragments.		860–880: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).
	740–760: Sandy clay (sC); clay and very fine to fine sand; well sorted; very dark gray (2.5Y 3/1); trace 1–3 mm shell fragments.		880–900: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).
	760–780: Clayey sand (cS); very fine sand and clay; very well sorted; very angular; very dark gray (2.5Y 3/1); trace 1–3 mm shell fragments.		900–920: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).
	780–800: Clayey sand (cS); very fine to fine sand and clay; well sorted; very angular; very dark gray (2.5Y 3/1); trace 1–2 mm shell fragments.		920–940: Sandy clay (sC); clay and very fine sand; very well sorted; dark grayish brown (2.5Y 4/2).
	800–820: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1); trace 1–2 mm shell fragments.		940–980: No sieve sample collected; cores 26, 27, 28, 29, 30, 31, 32, 33, and 34.




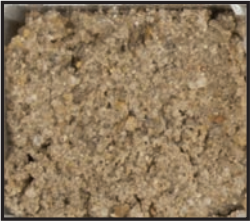
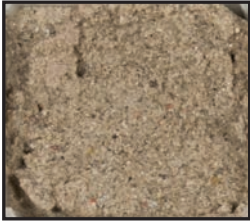

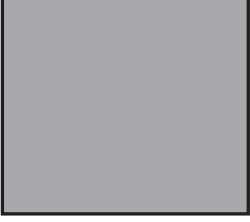






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Depth interval (feet) and description	Depth interval (feet) and description
 <p>980–1,000: Clayey sand (cS); very fine sand and clay; very well sorted; subrounded; very dark gray (2.5Y 3/1).</p>	 <p>1,120–1,140: Sandy clay (sC); clay and fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>
 <p>1,000–1,020: Clayey sand (cS); very fine sand and clay; very well sorted; subrounded; very dark gray (2.5Y 3/1).</p>	 <p>1,140–1,160: Sandy clay (sC); clay and fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>
 <p>1,020–1,040: Clayey sand (cS); very fine to fine sand and clay; well sorted; subrounded; dark gray (2.5Y 4/1).</p>	 <p>1,160–1,180: Sandy clay (sC); clay and fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>
 <p>1,040–1,060: Clayey sand (cS); very fine to fine sand and clay; well sorted; subrounded; dark gray (2.5Y 4/1).</p>	 <p>1,180–1,200: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>
 <p>1,060–1,080: Sandy clay (sC); clay and very fine to fine sand; well sorted; dark gray (2.5Y 4/1).</p>	 <p>1,200–1,220: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>
 <p>1,080–1,100: Clayey sand (cS); very fine to fine sand and clay; well sorted; subangular; dark gray (2.5Y 4/1).</p>	 <p>1,220–1,240: Sandy clay (sC); clay and very fine sand; very well sorted; very dark grayish brown (2.5Y 3/2).</p>
 <p>1,100–1,120: Clayey sand (cS); very fine to fine sand and clay; well sorted; subrounded; dark gray (2.5Y 4/1).</p>	 <p>1,240–1,260: Clay (C); clay; very well sorted; very dark grayish brown (2.5Y 3/2).</p>


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Depth interval (feet) and description	Depth interval (feet) and description
 <p>1,260–1,280: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1).</p>	 <p>1,400–1,420: Sand (S); medium sand; very well sorted; subangular; gray (5Y 5/1).</p>
 <p>1,280–1,300: Sandy clay (sC); clay and very fine sand; very well sorted; very dark gray (2.5Y 3/1); <i>trace 1 mm shell fragments</i>.</p>	 <p>1,420–1,440: Clayey sand (cS); very fine to medium sand, and clay; poorly to moderately sorted; subangular; gray (5Y 5/1).</p>
 <p>1,300–1,320: Sand (S); medium sand; very well sorted; subangular; dark gray (2.5Y 4/1); <i>trace 1 mm shell fragments</i>.</p>	 <p>1,440–1,460: Sand (S); fine to medium sand with minor coarse sand; moderately sorted; subangular; gray (5Y 5/1).</p>
 <p>1,320–1,342: No sieve sample collected;</p> <p>1,342–1,347: No sieve sample collected; <i>cores 35 and 36</i>.</p>	 <p>1,460–1,480: Clayey sand (cS); very fine to medium sand, and clay; poorly to moderately sorted; subangular; gray (5Y 5/1).</p>
 <p>1,347–1,360: Sandy clay (sC); clay and fine to coarse sand; poorly sorted; gray (2.5Y 5/1).</p>	 <p>1,480–1,500: Clayey sand (cS); very fine to medium sand, and clay; poorly to moderately sorted; subangular; gray (5Y 5/1).</p>
 <p>1,360–1,380: Sandy clay (sC); clay and fine to coarse sand; poorly sorted; grayish brown (2.5Y 5/2).</p>	 <p>1,500–1,520: Sand (S); medium sand; very well sorted; subangular; gray (5Y 5/1).</p>
 <p>1,380–1,400: Clayey sand (cS); medium to coarse sand, and clay; poorly sorted; subangular; grayish brown (2.5Y 5/2).</p>	 <p>1,520–1,540: Sand (S); medium sand; very well sorted; subangular; gray (5Y 5/1).</p>

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Depth interval (feet) and description	Depth interval (feet) and description
 <p>1,540–1,560: Clayey sand (cS); very fine to medium sand, and clay; poorly to moderately sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,680–1,700: Sand (S); fine to medium sand; well sorted; subangular; light olive brown (2.5Y 5/3).</p>
 <p>1,560–1,580: Sand (S); medium to very coarse sand with minor clay; poorly to moderately sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,700–1,720: Slightly gravelly sand ((g)S); medium to very coarse sand, and granules; poorly to moderately sorted; subrounded; light olive brown (2.5Y 5/3).</p>
 <p>1,580–1,600: Sand (S); medium to very coarse sand; poorly to moderately sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,720–1,728: Sand (S); medium to very coarse sand with trace granules; poorly to moderately sorted; subrounded; light olive brown (2.5Y 5/3).</p>
 <p>1,600–1,620: Sand (S); medium to coarse sand; poorly to moderately sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,728–1,745: No sieve sample collected; <i>cores 37, 38, and 39.</i></p>
 <p>1,620–1,640: Sand (S); medium to very coarse sand with minor clay; poorly to moderately sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,745–1,760: Slightly gravelly sand ((g)S); medium to very coarse sand, and granules; poorly to moderately sorted; subrounded; light olive brown (2.5Y 5/3).</p>
 <p>1,640–1,660: Sand (S); medium to coarse sand; well sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,760–1,780: Sand (S); medium to coarse sand; well sorted; subrounded; light olive brown (2.5Y 5/3).</p>
 <p>1,660–1,680: Sand (S); medium to coarse sand; well sorted; subrounded; grayish brown (2.5Y 5/2).</p>	 <p>1,780–1,800: Sand (S); medium to coarse sand; well sorted; subrounded; olive brown (2.5Y 4/3).</p>

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Depth interval (feet) and description	Depth interval (feet) and description
 <p>1,800–1,820: Sand (S); medium to coarse sand; well sorted; subrounded; olive brown (2.5Y 4/3).</p>	 <p>1,920–1,940: Sand (S); medium to coarse sand; well sorted; subangular; grayish brown (2.5Y 5/2).</p>
 <p>1,820–1,840: Sand (S); medium to very coarse sand; poorly to moderately sorted; subrounded to subangular; olive brown (2.5Y 4/3).</p>	 <p>1,940–1,960: Sand (S); fine to medium sand with trace clay; moderately sorted; angular to subangular; grayish brown (2.5Y 5/2).</p>
 <p>1,840–1,842: No sieve sample collected.</p> <p>1,842–1,847: No sieve sample collected; <i>cores 40 and 41</i>.</p>	 <p>1,960–1,980: Sand (S); medium to coarse sand with trace very coarse sand, and granules to small pebbles; poorly to moderately sorted; angular; grayish brown (2.5Y 5/2).</p>
 <p>1,847–1,860: Sand (S); medium to coarse sand; moderately to well sorted; subangular; olive brown (2.5Y 4/3).</p>	 <p>1,980–2,000: Sand (S); medium to coarse sand; moderately sorted; angular; grayish brown (2.5Y 5/2).</p>
 <p>1,860–1,880: Sand (S); medium to coarse sand; well sorted; subangular; olive brown (2.5Y 4/3).</p>	 <p>2,000–2,006: No sieve sample collected; <i>cores 42 and 43</i>.</p>
 <p>1,880–1,900: Sand (S); medium to coarse sand; well sorted; subangular; grayish brown (2.5Y 5/2).</p>	
 <p>1,900–1,920: Sand (S); medium to coarse sand; well sorted; subangular; grayish brown (2.5Y 5/2).</p>	

**Figure 18J.** 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) SDGD; (B) SDSY; (C) SDLH; (D) SDAQ; (E) SDGP; (F) SDBP; (G) SDHF; (H) SDEP; (I) SDNB; (**J**) **SDSW**; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW. —Continued.