







Depth interval (feet) and description	Depth interval (feet) and description
	<p>0–20: Slightly gravelly sand ((g)S); very fine to very coarse sand with granules to very large pebbles; poorly to moderately sorted; very angular; brown (10YR 5/3); <i>minor mica</i>.</p>
	<p>20–40: Sand (S); very fine to fine sand with minor silt and trace granules to small pebbles; moderately to well sorted; angular to subangular; light olive brown (2.5Y 5/3); <i>micaceous</i>.</p>
	<p>40–50: No sieve sample collected; <i>cores 1, 2 and 3</i>.</p>
	<p>50–60: Gravelly sand (gS); fine to coarse sand with granules to large pebbles and minor silt; very poorly sorted; angular to subangular; light olive brown (2.5Y 5/3); <i>micaceous</i>.</p>
	<p>60–80: Sand (S); very fine to coarse sand with minor granules; poorly to moderately sorted; angular to subangular; light olive brown (2.5Y 5/3); <i>micaceous</i>.</p>
	<p>80–100: Sand (S); very fine to coarse sand with minor granules to small pebbles; poorly to moderately sorted; angular to subangular; light olive brown (2.5Y 5/3); <i>calcareous; micaceous; trace shell fragments and glass sponge spicules, <2 mm</i>.</p>
	<p>100–120: Sand (S); very fine to medium sand with trace granules to medium pebbles; moderately sorted; angular to subangular; olive gray (5Y 5/2); <i>calcareous; micaceous</i>.</p>
	<p>120–140: Sand (S); very fine to medium sand with minor silt; moderately sorted; angular to subangular; olive gray (5Y 5/2); <i>calcareous; micaceous; <2 mm shell fragments</i>.</p>
	<p>140–160: Slightly gravelly sand ((g)S); very fine to coarse sand with granules to medium pebbles; poorly sorted; very angular to angular; light olive brown (2.5Y 5/4); <i>calcareous; micaceous; abundant <8 mm shell fragments</i>.</p>
	<p>160–180: Slightly gravelly silty sand ((g)mS); very fine to medium sand with silt and granules to large pebbles; very poorly to moderately sorted; very angular to subangular; gray (5Y 5/1); <i>calcareous; micaceous; <7 mm shell fragments</i>.</p>
	<p>180–190: No sieve sample collected; <i>cores 4 and 5</i>.</p>
	<p>190–200: Silty sand (zS); very fine to medium sand with silt and trace granules to medium pebbles; poorly to moderately sorted; very angular to subangular; dark gray (5Y 4/1); <i>calcareous; micaceous; <1 mm shell fragments</i>.</p>
	<p>200–220: Silty sand (zS); very fine to very coarse sand with silt and trace granules to large pebbles; very poorly to moderately sorted; very angular to subangular; dark gray (5Y 4/1); <i>calcareous; micaceous; <6 mm shell fragments</i>.</p>
	<p>220–240: Sandy silt (sZ); silt with very fine to medium sand and trace granules; moderately sorted; dark gray (5Y 4/1); <i>calcareous; micaceous; <10 mm shell fragments; trace shell casts [well indurated, <7 mm, greenish black (10Y 2.5/1), calcareous]</i>.</p>

Figure 18G. 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) SDPC; (F) SDBP; **(G) SDHF**; (H) SDEP; (I) SDNB; (J) SDSW; (K) SDMC; (L) SDLD; (M) SDCC; (N) SDOR; (O) SDOT; and (P) SDBW.



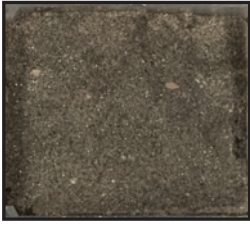
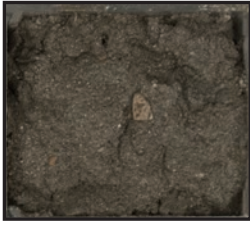










Depth interval (feet) and description	Depth interval (feet) and description		
	<p>240–260: Silty sand (sZ); very fine to medium sand with silt; moderately to well sorted; very angular to subangular; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; <12 mm shell fragments.</p>		<p>380–400: Sandy silt (sZ); silt with very fine to fine sand; moderately to well sorted; dark greenish gray (10Y 4/1); <i>micaceous</i>; <3 mm shell fragments.</p>
	<p>260–280: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; <8 mm shell fragments.</p>		<p>400–420: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; <6 mm shell fragments.</p>
	<p>280–300: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>micaceous</i>; <1 mm shell fragments.</p>		<p>420–440: Silt (Z); silt with minor very fine sand; very well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; abundant <6 mm shell fragments.</p>
	<p>300–320: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>micaceous</i>; <1 mm shell fragments.</p>		<p>440–460: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; <6 mm shell fragments.</p>
	<p>320–340: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; minor <1 mm shell fragments.</p>		<p>460–480: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; minor mica; trace <1 mm shell fragments.</p>
	<p>340–360: Sandy silt (sZ); silt with very fine sand and trace granules to large pebbles; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>micaceous</i>; <6 mm shell fragments.</p>		<p>480–488: No sieve sample collected; cores 6 and 7.</p>
	<p>360–380: Sandy silt (sZ); silt with very fine to coarse sand and minor granules to medium pebbles; poorly to moderately sorted; dark greenish gray (10Y 4/1); <i>micaceous</i>; <9 mm shell fragments.</p>		<p>488–500: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <1 mm shell fragments.</p>

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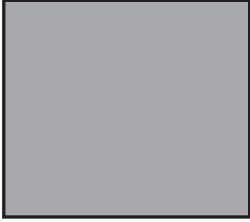







Depth interval (feet) and description	Depth interval (feet) and description
	<p>500–520: Sandy silt (sZ); silt with very fine sand and trace granules to medium pebbles; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <5 mm shell fragments.</p>
	<p>520–540: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>minor</i> <3 mm shell fragments.</p>
	<p>540–560: Silt (Z); silt with minor very fine sand; very well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>minor mica</i>; <i>trace</i> <1 mm shell fragments.</p>
	<p>560–580: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>minor mica</i>; <i>minor gastropod and bivalve shell fragments</i>, <4 mm.</p>
	<p>580–600: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>minor mica</i>; <i>trace</i> <1 mm shell fragments.</p>
	<p>600–620: Sandy silt (sZ); silt with very fine sand; well sorted; dark greenish gray (10Y 4/1); <i>calcareous</i>; <i>trace</i> <6 mm shell fragments.</p>
	<p>620–623.5: No sieve sample collected; <i>cores 8 and 9</i>.</p>
	<p>623.5–640: Clayey sandy silt (sM); silt with very fine to coarse sand and clay; poorly to moderately sorted; dark gray (5Y 4/1); <i>calcareous</i>.</p>
	<p>640–658: Sandy clayey silt (sM); silt with clay, very fine to medium sand, and trace granules; poorly to moderately sorted; gray (5Y 5/1); <i>slightly calcareous</i>.</p>
	<p>658–673: No sieve sample collected; <i>cores 10, 11, and 12</i>.</p>
	<p>673–680: Sandy clayey silt (sM); silt with clay, very fine to coarse sand, and trace granules to small pebbles; poorly to moderately sorted; gray (5Y 5/1); <i>slightly calcareous</i>.</p>
	<p>680–700: Clayey sandy silt (sM); silt with very fine to fine sand and clay; moderately sorted; olive gray (5Y 4/2).</p>
	<p>700–720: Sandy clay (sC); clay with very fine to medium sand; moderately sorted; light olive gray (5Y 6/2); <i>calcareous</i>.</p>
	<p>720–740: Silty sandy clay (sM); clay with very fine to very coarse sand, silt, and trace granules; very poorly sorted; olive gray (5Y 5/2); <i>calcareous</i>.</p>

Figure 18G. 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) SDPC; (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
	<p>740–760: Sand (S); very fine to coarse sand with minor silt and trace clay; moderately to well sorted; subangular to subrounded; light olive brown (2.5Y 5/3); <i>calcareous</i>.</p>		<p>870–880: Sandy gravelly silty clay (gM); clay with silt, granules to medium pebbles, and very fine to medium sand; very poorly sorted; grayish brown (2.5Y 5/2); <i>calcareous</i>.</p>
	<p>760–780: Gravelly sand (gS); very fine to very coarse sand with granules to medium pebbles; very poorly sorted; subangular to subrounded; grayish brown (2.5Y 5/2); <i>slightly calcareous</i>.</p>		<p>880–900: Gravelly sandy silty clay (gM); clay with silt, very fine to coarse sand, and granules to small pebbles; very poorly sorted; grayish brown (2.5Y 5/2); <i>calcareous</i>; trace <4 mm shell fragments.</p>
	<p>780–800: Gravelly sand (gS); very fine to coarse sand with granules to medium pebbles, minor silt, and very coarse sand; very poorly sorted; angular to subrounded; light olive brown (2.5Y 5/3); <i>calcareous</i>.</p>		<p>900–920: Sandy silty clay (sM); clay with silt, very fine to medium sand, and trace granules; poorly to moderately sorted; grayish brown (2.5Y 5/2); <i>calcareous</i>.</p>
	<p>800–820: Sandy silty clay (sM); clay with silt, very fine to coarse sand, and trace granules; grayish brown (2.5Y 5/2); <i>calcareous</i>.</p>		<p>920–940: Clay (S); clay with minor fine to very coarse sand and trace granules to medium pebbles; moderately to very well sorted; grayish brown (2.5Y 5/2); <i>calcareous</i>.</p>
	<p>820–840: Silty sand (zS); very fine to very coarse sand with silt; poorly sorted; subangular to subrounded; grayish brown (2.5Y 5/2); <i>calcareous</i>.</p>		<p>940–960: Gravelly silty sand (gmS); very fine to very coarse sand with silt and granules to medium pebbles; very poorly sorted; very angular to subrounded; light olive brown (2.5Y 5/3); <i>slightly calcareous</i>.</p>
	<p>840–860: Clayey sandy silt (sM); silt with very fine to coarse sand and clay; poorly sorted; light olive brown (2.5Y 5/3); <i>calcareous</i>.</p>		<p>960–980: Sandy gravel (sG); granules to large pebbles with very fine to very coarse sand and minor clay; very poorly sorted; very angular to subrounded; light olive brown (2.5Y 5/3); <i>calcareous</i>.</p>
	<p>860–870: No sieve sample collected; cores 13 and 14.</p>		<p>980–990: Silty sandy gravel (msG); granules to very large pebbles with very fine to very coarse sand, and silt; very poorly sorted; very angular to subrounded; dark grayish brown (2.5Y 4/2); <i>slightly calcareous</i>.</p>

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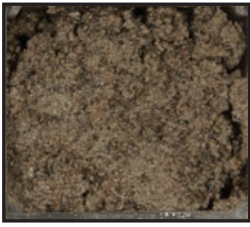
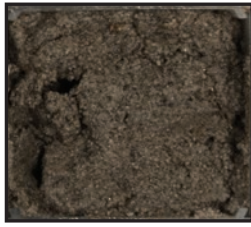




Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description
	990–1,000: <i>No sample collected.</i>		1,120–1,140: Gravelly silty sand (gmS); very fine to very coarse sand with silt and granules to small pebbles; very poorly sorted; angular to subrounded; dark gray (5Y4/1); <i>slightly calcareous</i> ; <i>minor chlorite</i> ; <i>trace pyrite</i> , <0.5 mm.
	1,000–1,020: Gravelly sand (gS); very fine to very coarse sand with granules to small pebbles and minor silt; very angular to subangular; very poorly to poorly sorted; light olive brown (2.5Y 5/3); <i>calcareous</i> .		1,140–1,160: Silty sand (zS); very fine to coarse sand with silt; moderately sorted; subangular to subrounded; olive gray (5Y 4/2); <i>slightly calcareous</i> .
	1,020–1,040: Sandy gravel (sG); granules to small pebbles with very fine to very coarse sand; very poorly to poorly sorted; very angular to subangular; dark grayish brown (2.5Y 4/2); <i>calcareous</i> .		1,160–1,180: Sand (S); very fine to very coarse sand with minor clay; well sorted; subangular to subrounded; dark gray (5Y 4/1); <i>slightly calcareous</i> ; <i>minor pyrite</i> , 0.5–2 mm.
	1,040–1,060: Sandy gravel (sG); granules to small pebbles with very fine to very coarse sand and minor silt; very poorly to poorly sorted; angular to subangular; grayish brown (2.5Y 5/2); <i>calcareous</i> .		1,180–1,200: Sand (S); very fine to coarse sand; well sorted; subangular to subrounded; dark gray (5Y 4/1); <i>minor chlorite and biotite</i> ; <i>trace pyrite</i> , <1 mm.
	1,060–1,080: Gravelly sand (gS); very fine to very coarse sand with granules to small pebbles; very poorly to poorly sorted; angular to subangular; dark grayish brown (2.5Y 4/2); <i>calcareous</i> .		1,200–1,220: Sand (S); very fine to coarse sand; well sorted; subangular to subrounded; dark gray (5Y 4/1).
	1,080–1,100: Gravelly sand (gS); very fine to very coarse sand with granules to small pebbles and minor clay; very poorly sorted; angular to subrounded; olive brown (2.5Y 4/3); <i>slightly calcareous</i> .		1,220–1,240: Sand (S); very fine to coarse sand with minor clay; moderately to well sorted; subangular to subrounded; very dark gray (5Y 3/1); <i>calcareous</i> ; <i>minor chlorite fragments</i> , 0.5–2 mm.
	1,100–1,120: Sandy gravel (sG); granules to medium pebbles with very fine to very coarse sand; very poorly sorted; very angular to subangular; olive gray (5Y 4/2); <i>calcareous</i> .		1,240–1,260: Slightly gravelly clayey sand ((g)mS); very fine to coarse sand with clay and granules to medium pebbles; very poorly sorted; subangular to subrounded; dark gray (5Y 4/1); <i>calcareous</i> ; <i>minor chlorite</i> , 0.5–2 mm.

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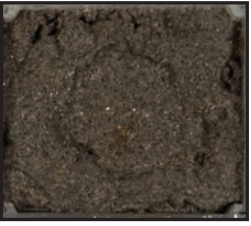




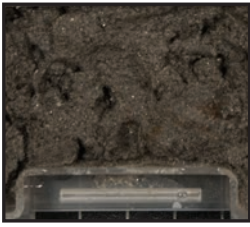


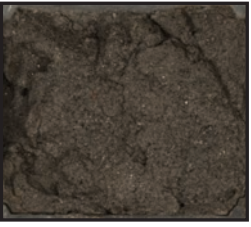

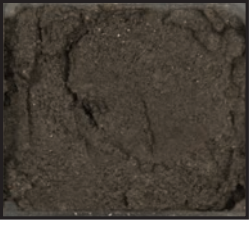


Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description	Depth interval (feet) and description
	<p>1,260–1,280: Sandy clay (sC); clay with very fine to medium sand; poorly to moderately sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>minor chlorite</i>.</p>		<p>1,380–1,400: Sandy silt (sZ); silt with very fine to medium sand and minor clay; moderately sorted; olive gray (5Y 4/2); <i>calcareous</i>; <i>trace ash</i>?</p>
	<p>1,280–1,300: Gravelly clay (gM); clay with granules to small pebbles, minor silt, and very fine to medium sand; very poorly sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>trace chlorite</i>.</p>		<p>1,400–1,420: Sandy silt (sZ); silt with very fine to medium sand and trace clay; moderately sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>trace ash</i>?</p>
	<p>1,300–1,320: Sandy silty clay (sM); clay with silt, very fine sand, and trace coarse to very coarse sand; moderately to well sorted; dark gray (5Y 4/1); <i>calcareous</i>.</p>		<p>1,420–1,440: Silty clay (M); clay with silt and trace granules to small pebbles; well sorted; dark olive gray (5Y 3/2); <i>calcareous</i>.</p>
	<p>1,320–1,340: Silty clayey sand (mS); very fine to medium sand with clay, silt, and minor very coarse sand; poorly to moderately sorted; angular to subrounded; dark gray (5Y 4/1); <i>calcareous</i>; <i>trace chlorite</i>.</p>		<p>1,440–1,460: Clayey silt (M); silt with clay and minor very fine to fine sand; moderately to well sorted; dark gray (5Y 4/1); <i>calcareous</i>.</p>
	<p>1,340–1,349.5: No sieve sample collected; <i>cores 15 and 16</i>.</p>		<p>1,460–1,480: Clayey silt (M); silt with clay and minor very fine sand; well sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>minor mica</i>.</p>
	<p>1,349.5–1,360: Clayey sand (cS); very fine to medium sand with clay and trace granules; poorly to moderately sorted; angular to subrounded; olive gray (5Y 5/2); <i>calcareous</i>; <i>minor chlorite</i>.</p>		<p>1,480–1,500: Clayey silt (M); silt with clay and minor very fine sand; well sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>minor mica</i>.</p>
	<p>1,360–1,380: Gravelly clayey sand (gmS); very fine to medium sand with clay and granules to small pebbles;; very poorly sorted; angular to subrounded olive gray (5Y 4/2); <i>calcareous</i>; <i>minor mica</i>; <i>indurated siltstone clasts</i>; <i>trace caliche</i>.</p>		<p>1,500–1,520: Clayey silt (M); silt with clay and minor very fine sand; well sorted; dark gray (5Y 4/1); <i>calcareous</i>; <i>minor mica</i>.</p>

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Depth interval (feet) and description







	1,520–1,540: Silty sand (zS); very fine to medium sand with silt; moderately sorted; angular to subangular; dark gray (5Y 4/1); <i>calcareous</i> ; <i>minor biotite</i> .
	1,540–1,560: Sandy clayey silt (sM); silt with clay, very fine to medium sand, and trace granules to small pebbles; poorly to moderately sorted; dark gray (5Y 4/1); <i>calcareous</i> ; <i>minor biotite and chlorite</i> .
	1,560–1,580: Silty sand (zS); very fine to coarse sand with silt; poorly to moderately sorted; angular; dark gray (5Y 4/1); <i>slightly calcareous</i> ; <i>minor biotite</i> .
	1,580–1,600: Silty sand (zS); very fine to coarse sand with silt and minor clay; poorly to moderately sorted; angular to subangular; dark gray (5Y 4/1); <i>calcareous</i> ; <i>minor mica</i> .
	1,600–1,620: Silty sand (zS); very fine to coarse sand with silt; poorly to moderately sorted; angular to subangular; dark gray (5Y 4/1); <i>calcareous</i> ; <i>minor mica</i> .
	1,620–1,640: Silty sand (zS); very fine to coarse sand with silt; poorly to moderately sorted; angular to subangular; dark gray (5Y 4/1); <i>calcareous</i> ; <i>trace mica</i> .

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