

Guerrero Negro Dune Sheet, Baja California Sur, Mexico

UTM Sector and Datum (xx/yr), Northing, Easting, Estimated Error (EPE +-m), DEM Altitude (Alt m MSL).

Exposure Type: Active (AC), Trench (TR), Auger (AU), Road Cut (RC), Creek Cut (CC), Sea Cliff (SC), Slope (SL).

Units: Age: Tertiary (T), Pleistocene (P), Holocene (H), Wave-cut Platform (W); Parent Material; Soil Horizon

Parent Material: Eolian Dune (D), Loess (L), Colluvium (U), Peat (P), Alluvial/Fluvial (V), Lagoonal/Estuary (N),

Beach Shoreface (S), Basal Conglomerate (M).

Note: Loess (L) is designated where it overlies bedrock, colluvium, or pre-existing Bw/Bt horizons.

Soil Horizon: Organic (A), Leached (E), Accumulation (B), Fe+3 Accumulation (Bw),

Incipient Clay Accumulation (Btj), Clay Accumulation (Bt), Humate Accumulation (Bh),

Calcrete (Bk), Silcrete (Bq), Reduced Glade Layer (Bg), Subsoil Calcrete (K),

Dune Parent (C), Oxidized Parent (Cox).

Subsurface depth (cm); Dominant Grain Size: Silt, Sand, Pebbles, Cobbles (default is sand)

Sand sizes (Coarse U/L, Medium U/L, Fine U/L, Very Fine U/L)

Bedding: Cross Beds (XB, dipxx), Planar Beds (PB), Fluidization (FL), Heavy Mineral Laminae (HM)

Munsell Maximum Color (field condition: moist)

Penetrometer: (P. kg/square cm) unconfined compressive strength.

Structure: loose, very weak blocky, weak blocky, strong blocky, columnar/prismatic.

Diagenesis: Fe-ortstein, Fe-humate, allophane, gibbsite, calcrete, silcrete

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG1	N11/1983	3096830	787850		5	5 12/18/00	

Site Notes: Drainage channel north of salt flats, exposes Pleistocene dune deflation surface(s).

Pleistocene dunes overlie lagoonal deposits (tidal channel to tidal flat sequence) at 130 cm depth.

The supratidal flat transition (lagoonal to eolian) at 3.5 m modern MSL yields a paleosea level at 80-120 ka?

Elevation estimated from observed tide level.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HD	0-50	MU		2.5y7/3		0.5 Loose	
PDE	50-60			10yr7/2	1.25	Very Weak B.	
PDBw	60-130			10yr7/4	1.5		
PNBk	130-150				4		caliche
PNBk	150-500						
PN	500-550						

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG2	N11/1983	3092230	785010		4	5 12/18/00	RC

Site Notes: Channel-cut site is located 1/2 km north of active barchan dunes, on the salt plant road.

Holocene deposits (30-130 cm) are layered dune sand (70%), reworked shells (25%), and rare pebbles (5%).

Burrows (insects?) extend to 70 cm depth.

Elevation estimated from observed tide level.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
Disturbed	0-30						
HD	30-85	FU		2.5y7/3		1 Loose	
HBw	85-130	FU		7.5yr7/6		0.5 Loose	
PNE	130-160	ML			1.25	Very Weak B.	
PNBw	160-165					Very Weak B.	
PNC	165-170	CL			2.5	Very Weak B.	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG3	N11/1983	3090070	784480		4	10 12/18/00	AC

Site Notes: Large modern barchans, migrating over deflation surface.

Elevation estimated from observed tide level.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HD	0-700	ML		5y6/1		0 Loose	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG4	N12/1983	3089280	216260		4	30	12/18/00 RC

Site Notes: Site is in lime quarry. Caliche (1-2 m thick) is widely exposed at subsurface depths of 2-3 m. Reworked dune hummocks (2-3 m in height) are widely separated (100 m) above a Pleistocene deflation surface. Pleistocene dune deposits contain multiple DBw (189-240, 280-310 cm) and deflation layers.

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HD	0-180	FU				1 Loose	
PDBw	189-240	FU		7.5yr5/6		4 Very Weak B.	
PDCox	240-280	FU		10yr5/4			
PDBw	280-310	FU		7.5yr6/6		4 Weak Blocky	caliche
PDCox	310-350	ML		10yr6/4			
PDK	350-500			10yr8/1		4 Columnar	caliche

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG5	N12/1983	3077790	240610		4	40	12/18/00 RC/TR

Site Notes: Roadside test quarry (TL Samples 80 and 170 cm depth W3179 - WP16B Excavation 3077791N/B).

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
PDE	0-30	MU	Truncated	10yr6/4		4 Very Weak B.	
PDBw	30-100	ML		10yr5/4		3.5 Very Weak B.	
PDK	100-150					4 Columnar	caliche
PDCox	150-180	ML		10yr4/4		4.5 Strong Blocky	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG6	N12/1983	3077750	240810		5	50	12/17/00 AU

Site Notes: Holocene dune linear ridges (2-5 m height) trending NW-SE (TL Sample 150 cm depth).

Remobilized dune ridges are 100's meters in length and contain FU-ML sand.

Intervening valleys contain coarser sand (MU-CL) with deflation pavements (weakly cemented).

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HD	0-150	ML		10yr5/4		0 Loose	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG7	N12/1983	3048750	238020		4	50	12/18/00 RC/TR

Site Notes: Site is located in area of Holocene linear dunes (1-4 m height) trending NW-SE.

The remobilized ridges are separated 100-300 m over Pleistocene deflation surfaces.

Active dune troughs between ridges contain MU sand size with 10% CU lag.

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HDCox	0-200	FU				0 Loose	
PDBw	200-220	MU	Truncated	10yr5/4		4 Weak Blocky	
PCox	220-240	MU		7.5yr4/4		2.5 Very Weak B.	
PDBk	240-250					3.75 Weak Blocky	caliche
PDBw	250-280		Truncated	7.5yr5/4		4.5 Weak Blocky	caliche
PDCox	280-300	FU		10yr4/4		3.75 Very Weak B.	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG8	N12/1983	3044190	225220		4	50	12/18/00 RC

Site Notes: Site is located in center of largest Holocene linear dune ridges (up to 5 m height) east of lagoon.

Burrowing (insects) to greater than 80 cm depth. Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HDC	0-10	FL		10yr7/4		0 Loose	
HDCox	10-200	FL		10yr7/6		0.75 Loose	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG9	N12/1983	3039770	213250		5	20	12/18/00 RC

Site Notes: Site is on top of terrace, cut by alluvial valley, itself filled by marine transgression (salt flat).

Deep exposure (10 m) of alluvial deposits that underlie the widespread Pleistocene dunes.

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
HDCox	0-50	FL				0.5 Loose	
PDCox	50-200	ML				2.5 Very Weak B.	
PDK	200-250					4.5 Columnar	
PV	250-1200	CU-pebbles				Very Weak B.	
PVBw	1200-1250	FU		10yr5/4		4.5 Strong Blocky	caliche
PV	1250-1450	FL-green sand?		5y7/3		4.5 Strong Blocky	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG10	N11/1983	3039030	784830		4	80	12/18/00 RC

Site Notes: Alluvial stream cut, widened by road work. Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
PDBw	0-100	FL				Very Weak B.	
PDCox	100-200	FU		10yr6/4		1.75 Very Weak B.	
PVBtj	200-250	Pebbles		10yr5/6		4.5 Strong Blocky	

Dune Sheet	Zone/NAD	UTM-N	UTM-E	EPE (m)	Alt (m)	Date	Exposure
GNEG11	N12/1983	3032640	280220		3	80	12/17/00 TR

Site Notes: Site is 200 m west of HW (TL Sample at 150 cm depth).

Remobilized dune-loess hummocks (0.5 m in height) over Pleistocene dune deflation surfaces.

Elevation estimated from GPS and 50 m contour map.

Units	Depth cm	Grain Size	Bedding	Color	P.kg/cm ²	Structure	Diagenesis
PDE	0-4			10yr6/4		2.75 Very Weak B.	
PDBw	4-75	FU		7.5yr4/4		3.5 Very Weak B.	
PDBk	75-100					Strong Blocky	caliche
PDBw	100-180	FU		7.5yr5/4		Strong Blocky	
PDE	180-185			7.5yr6/4		Strong Blocky	