

Meter	Graphic Lith.	Section	Age	Structure	Disturb.	Sample	Description
1		1	Quaternary	~>> ~>> ~>> ~>> ~>> ~>> ~>> ~>> ~>> ~>> ~>> ~>>		PP S	CLAYEY SILT to SILTY CLAY Major Lithology: Grayish green, light olive gray, and greenish gray SILTY CLAY to CLAYEY SILT. Generally mottled and bioturbated, with local darker green patches and bands.
		IW					
2		2				PP	
3		IW					
4		3				PP S S	
5		4				IW	
6		IW					
7		5				PP	
		IW					
8		6				PP	
		CC					



SITE 1031 HOLE A CORE 2H CORED 8.8 - 18.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb.	Sample	Description
1		1	Quaternary	∞		S	CLAYEY SILT to SILTY CLAY and SANDY SILT and SILT  Major Lithology: Mottled light olive gray to greenish gray and light greenish gray SILTY CLAY to CLAYEY SILT. Lighter colored intervals enriched in calcareous nannofossils. Scattered bioturbation and local color bands.  Minor Lithologies: Normally graded bed of SANDY SILT to SILT, with erosional base in Section 3, 142 cm. Plane-parallel laminae. Very thin beds of SILT with bases in Section 2, 121 cm, and Section 3, 25 cm and 81 cm.
2				∞		PP	
3				∞		PP S	
4				∞		IW	
5				∞		PP	
6				△		S	
7						PP	
8						PP S	
9						IW	
		6				PP	
		CC					

Meter	Graphic Lith.	Section	Age	Structure	Disturb.	Sample	Description
1		1	Quaternary			PP	CLAYEY SILT to SILTY CLAY Major Lithology: Light olive gray to greenish gray CLAYEY SILT to SILTY CLAY. Local color variations due to inconsistent amounts of calcium carbonate. Mostly structureless with local bioturbation and dark green color bands. White patches of calcium carbonate in Section 4, 120 cm to 150 cm.
2		2				PP	
3		S					
4		3				PP	
5		S					
6		S					
7		4				PP	
8		WR					
9		PP					
		5				IW	
		PP					
		6					
		7				PP	
		CC					

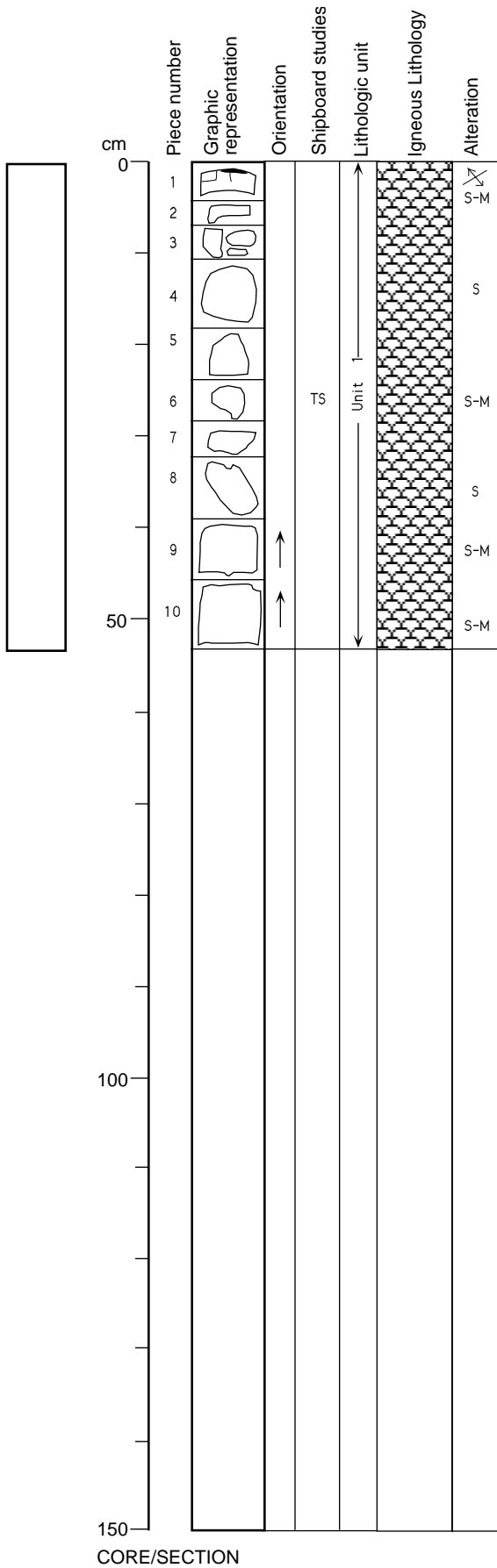
SITE 1031 HOLE A CORE 4H CORED 27.8 - 37.3 mbsf

Meter	Graphic Lith.	Section	Age	Structure	Disturb.	Sample	Description
1	void	1	Quaternary	~		PP S PP S	<p>CLAYEY SILT to SILTY CLAY</p> <p>Major Lithology: Greenish gray to light olive gray and yellowish gray SILTY CLAY to CLAYEY SILT. Lighter colored intervals enriched in calcareous nannofossils. Local pyrite nodules, dark green color bands, irregular black patches, and white patches of carbonate.</p>
2		2		●		PP WR	
3		3		~		IW	
4		4		~		PP	
5		5		~		PP S S	
6		6		~		PP	
7		7		~		IW	
8		8		~		S	
9		9		~		PP	
10		10		~		PP	
		CC					



Meter	Graphic Lith.	Section	Age	Structure	Disturb.	Sample	Description
1		1	Quaternary			PP	<p>CLAYEY SILT to SILTY CLAY and SILT to SANDY SILT</p> <p>Major Lithology:                      Variegated SILTY CLAY to CLAYEY SILT. Generally greenish gray with thin black layers, pyrite nodules, and local bioturbation. Dramatic color variations in Section 3 range from light bluish gray to light olive gray, yellowish gray, pale olive, and grayish yellow green.</p> <p>Minor Lithology:                      Thin beds of dusky yellowish green SILT to SANDY SILT with bases in Section 3, 37 cm and 55 cm. Mixed with green clay. Appears to be highly altered.</p> <p>General Description:                      Small faults in Section 1, 100 cm and 120 cm. Sense of offset uncertain.</p>
2		2				IW PP WR	
3		3				IW S S S PP	

168-1031A-6X-01



**UNIT 1: APHYRIC BASALT**

**PIECES: 1-10**

**CONTACTS:** None.

**PHENOCRYSTS:** <1% plagioclase glomerocrysts (≤2mm, ave. 1mm) and subhedral plagioclase phenocrysts.

**GROUNDMASS:** Aphanitic cryptocrystalline to microcrystalline. Intersertal, with visible plagioclase microlites. Subvariolithic in piece 1.

**VESICLES:** 1-2%, ≤0.5mm diameter. Mostly empty. Cavities in piece 1 are ≤6mm.

**COLOR:** Pale-medium gray; 1.3PB 2.1/0.2 to 1.9PB 2.6/0.2

**STRUCTURE:** Pillow basalt, inferred on the basis of a glassy margin on piece 1.

**ALTERATION:** Slight to locally moderate, preferentially located in haloes.

Alteration haloes in pieces 1 (8mm wide), 2 (2mm), 3 (4mm), 4 (≤1mm), 5 (2-3mm), 6 (≤5mm), 8 (≤8mm), 9 (6mm green and 3mm gray) and 10 (5-6mm green and 3-4mm gray). The latter two pieces have double haloes, with green outside and gray inside. Single haloes are green (saponite?-bearing) to green-yellow (iddingsite-bearing). Disseminated sulfide grains are located at the front of the alteration halo (between the fresh core and the halo itself); concentrations of sulfides occur in the double haloes in the inner gray halo, immediately adjacent to the outer green halo.

**VEINS/FRACTURES:** Scarce planar outer surfaces of core coated with iddingsite ± green clay (veins surface). Veinlet in piece 1 is dark green clay, which continues onto an outer surface as a pale blue clay coating with thin white circular plates of a zeolite, clear botryoidal zeolite, and associated with black botryoidal goethite-like material filling a vesicle.

**ADDITIONAL COMMENTS:** Chilled margin with palagonitized glassy margin (1-2mm-thick) and possibly fresh glass remnants.