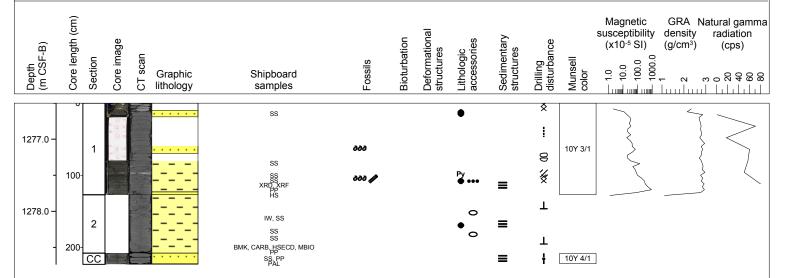
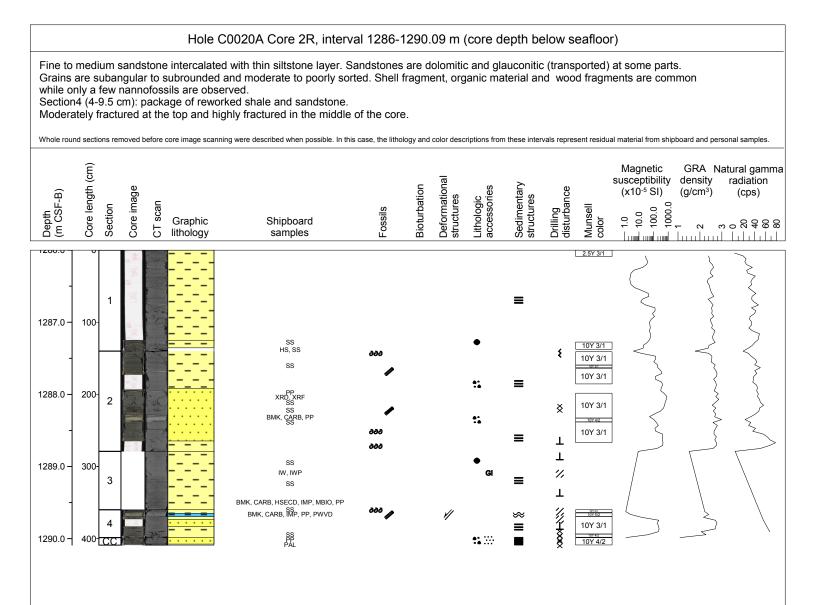
## Hole C0020A Core 1R, interval 1276.5-1278.735 m (core depth below seafloor)

Core 1 consists of fine to medium dolomitic sandstone intercalated with thin siltstone layer. Grains are subangular to subrounded and moderately sorted. Some fossil including shell fragments and wood fragments are observed. Drilling breccia at the top and the rest is slightly fractured.

Whole round sections removed before core image scanning were described when possible. In this case, the lithology and color descriptions from these intervals represent residual material from shipboard and personal samples.

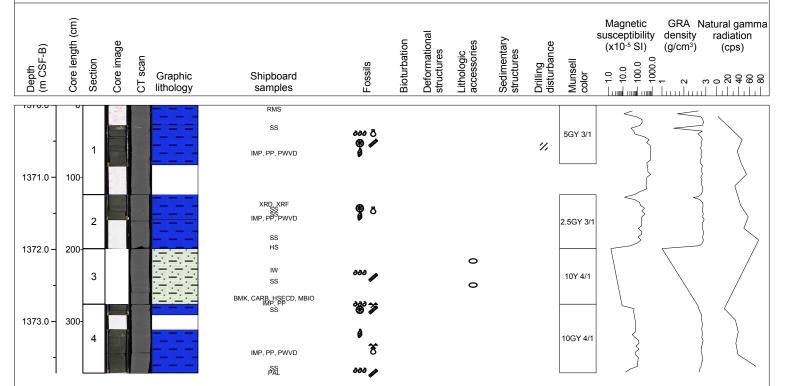


#### 1



# Hole C0020A Core 3R, interval 1370-1373.715 m (core depth below seafloor)

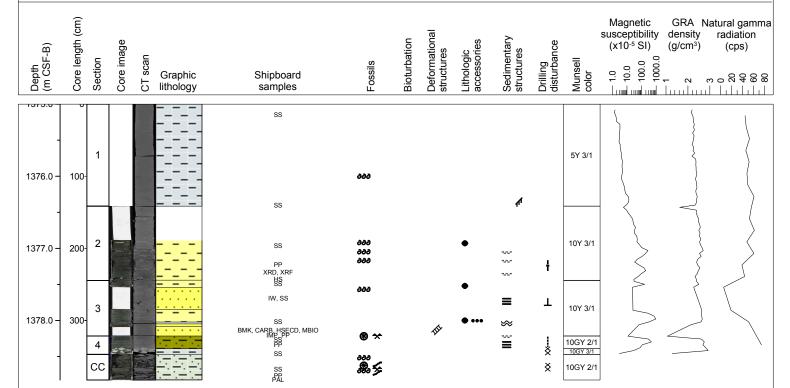
Core 3 is dominated by clayey siltstone with grains subangular to subrouded and moderate to poorly sorted. Shell fragments are the most common fossil and are scattered throughout all the core. Plant remains are observed in sections 1, 3 and 4. Diatoms appear in the upper part. Bivalves and sponge spicules are more common in the lower part and only a few gastropods are visible. Section 1 is slightly fractured.



## Hole C0020A Core 4R, interval 1375-1378.825 m (core depth below seafloor)

The upper part of core 4 consists of clayey siltstone while the middle part is dominated by fine to medium sandstone. Grains are moderate to subangular and moderate to poorly sorted. Shell fragments are the most common fossils observed in all sections. Few sponge spicules and diatoms are found in the bottom section.

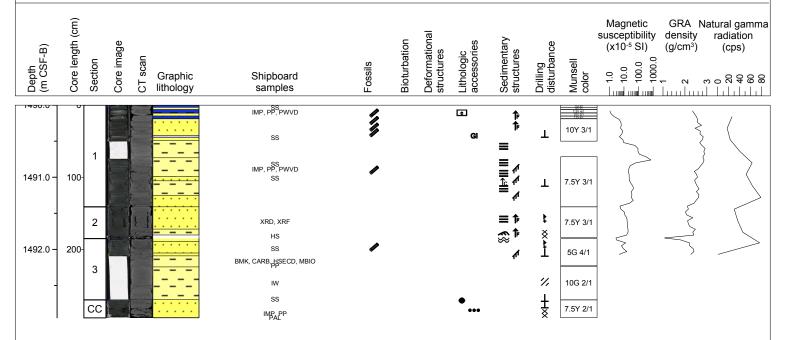
The middle part of the core is moderately disturbed, the lower part shows drilling breccias.

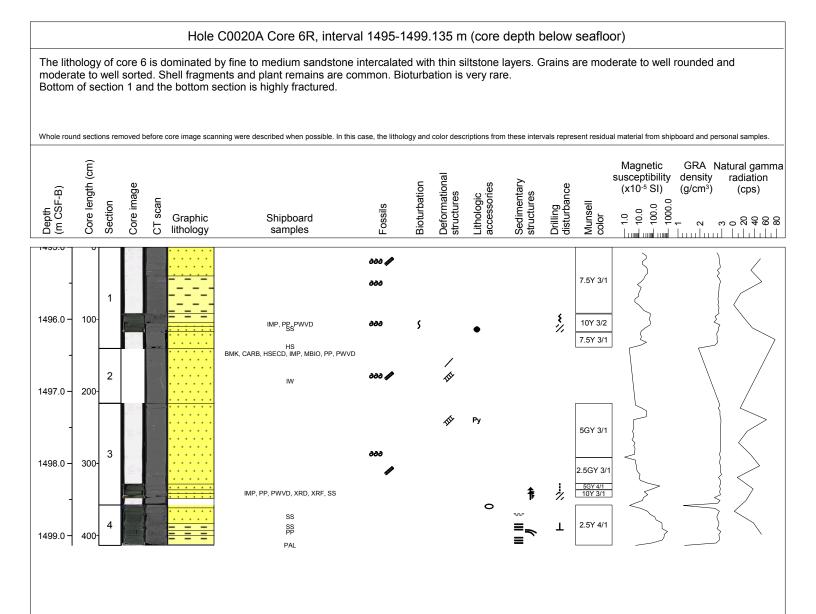


## Hole C0020A Core 5R, interval 1490-1492.95 m (core depth below seafloor)

Core 5 consists mainly of fine to medium sandstone intercalated with thin siltstone layers. The upper section shows an intercalation between sandstone and clayey siltstone. Grains are angular to sub rounded, moderate to well sorted. Plant remains are observed in some sections.No fossils observed in the smear slides.

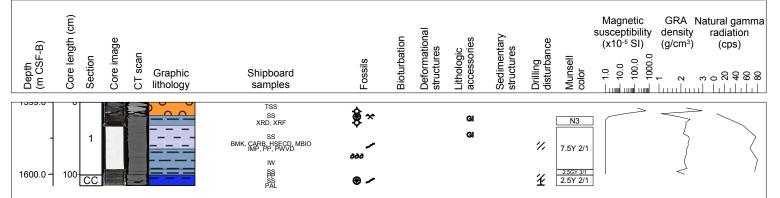
The core is moderately fractured by drilling in the upper part, heavily disturbed with a drilling breccia in the middle part and silightly to moderately fractured in the lower part.





# Hole C0020A Core 7R, interval 1599-1600.16 m (core depth below seafloor)

Core 7 consists of gravel in the top part while the rest is mostly glauconitic silty shale. Grains are moderate to subangular with moderate to well sorted. Organic material, shell fragments and diatoms are common. A few sponge spicules and rare radiolaria are also oberved. Thin sections of the gravel showed green metatuffite at 0-5cm and anorthosite at interval 5-13cm. The core is moderately fractured.

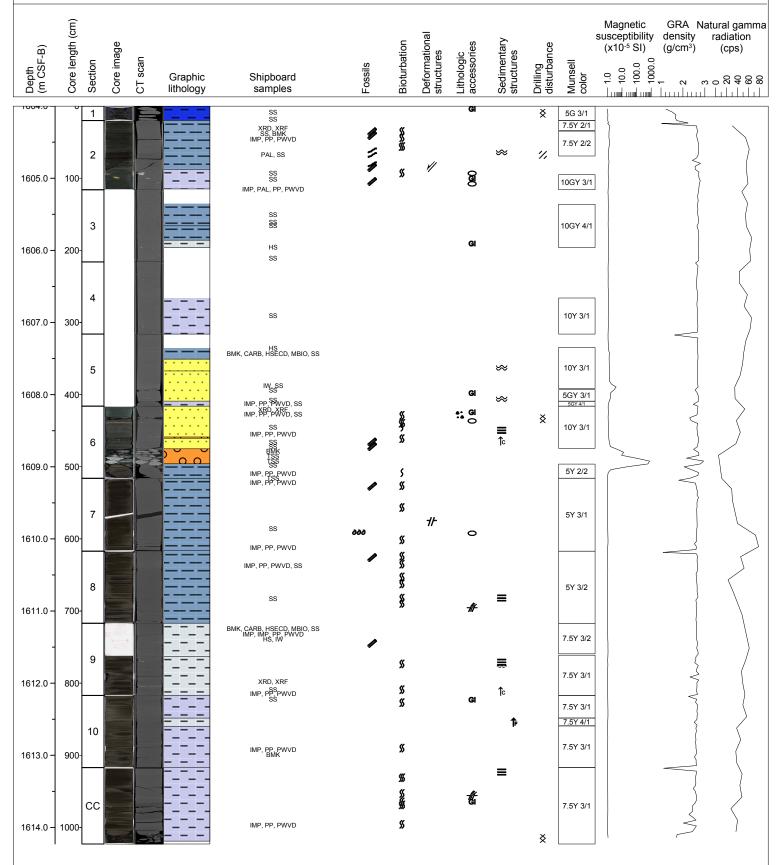


#### Hole C0020A Core 8L, interval 1604-1614.23 m (core depth below seafloor)

Core 8 is dominated by organic-rich silty shale with abundant volcanic glass. Conglomerates occur in the middle part of the core. Grains are moderate to subangular and moderate to well sorted. Shales are glauconitc and dolomitic in some places. Bioturbation (horizontal burrows) is common. Organic material is abundant. Common diatioms, rare sponge spicules and rare shell fragments are observed mostly in the lower part. Parallel and wavy laminations, and coarsening and fining upwards sequences are visible.

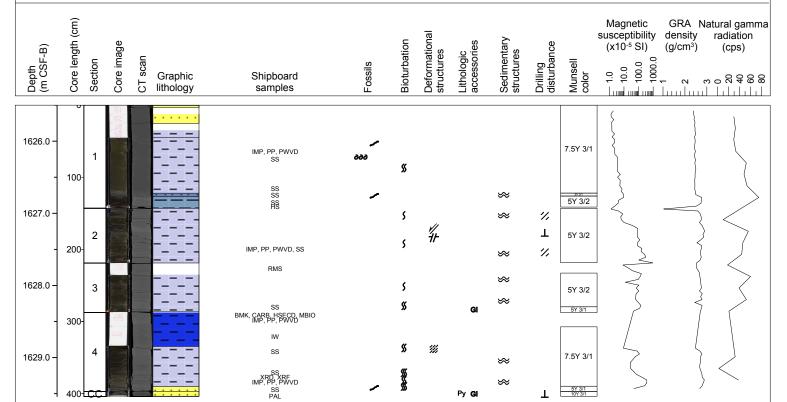
The top of the core is brecciated. One breccia also occurs at the bottom of the core.

Core 8L is the only larger diameter core for Expedition 337.



## Hole C0020A Core 9R, interval 1625.5-1629.5 m (core depth below seafloor)

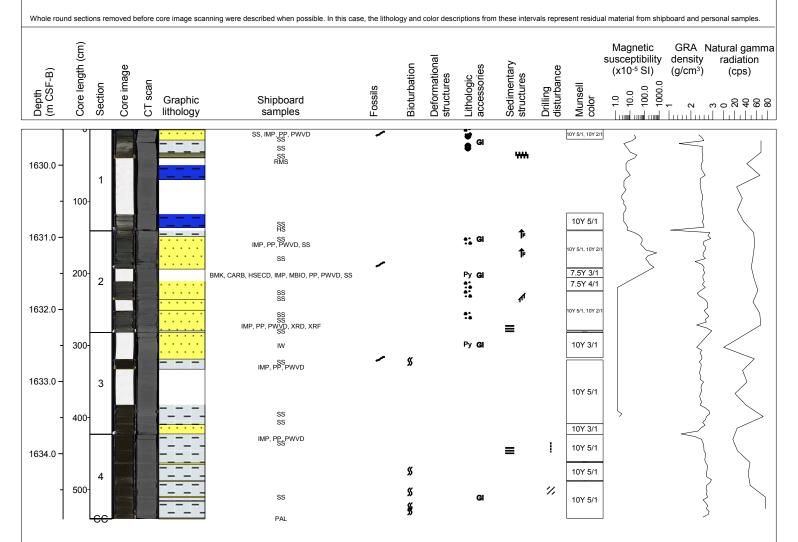
Core 9 dominated by shale with 25cm glauconitic sandstone at the top of the core. Grains are moderate to subangular and moderate to well sorted. Organic material and shell fragments are common. Few wood fragments and sponge spicules are scattered in some part of the section. Rare diatoms are also observed. Bioturbation (horizontal burrows) is common. Some wavy laminations, one load structure and a normal fault are visible. The middle of the core is moderately to heavily fractured.



## Hole C0020A Core 10R, interval 1629.5-1634.905 m (core depth below seafloor)

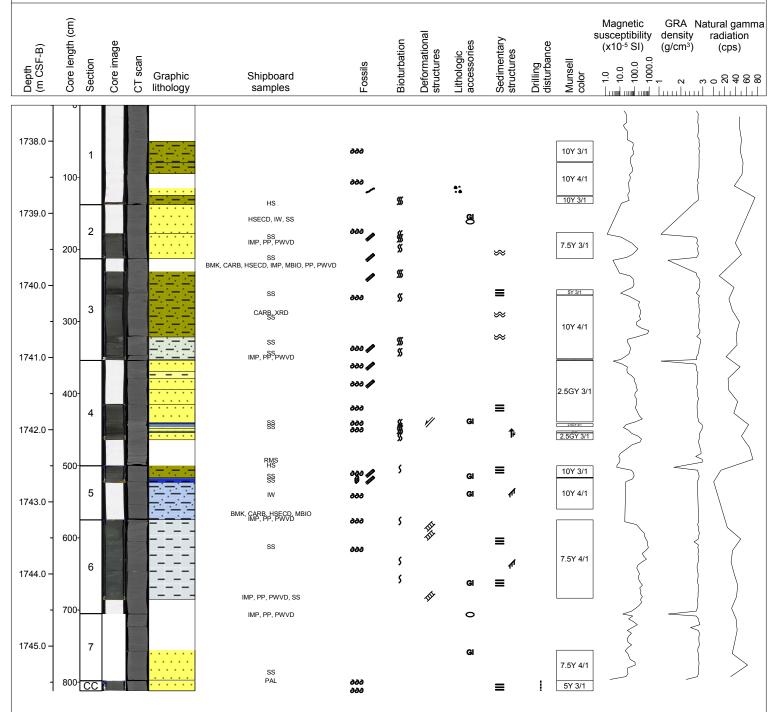
Core 10 mostly consists of organic-rich siltstone intercalated with thin sandstone layers (1-2cm thick). A 1.2-m-thick sandstone layer occurs in the middle of the core. Grains are moderate to subangular and moderate to well sorted. Few wood fragment, diatoms and shell fragment are observed mostly in the middle section. Moderate bioturbation appears in the lower part of the core. Cross lamination, planar lamination and 2 fining upward cycles are visible.

The core is slightly disturbed at the bottom.



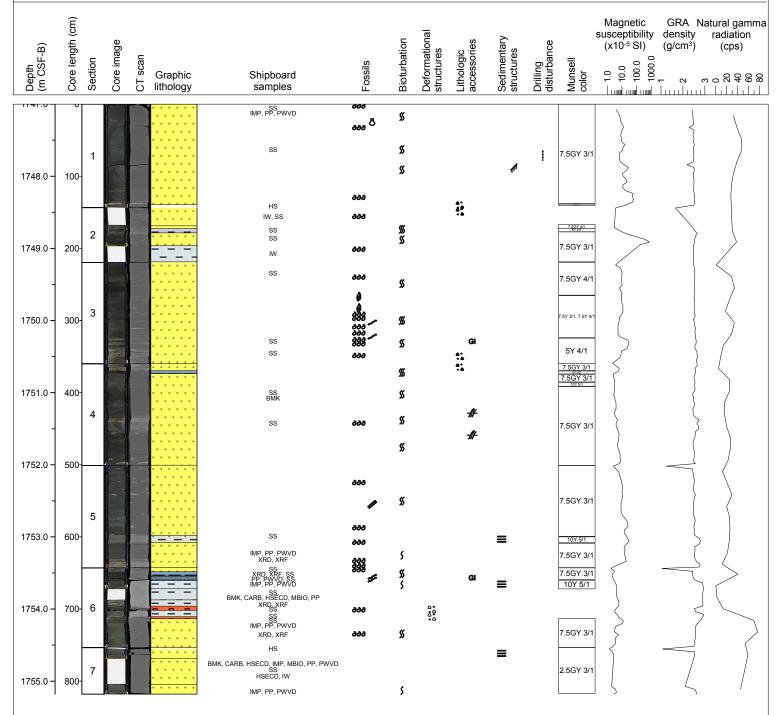
# Hole C0020A Core 11R, interval 1737.5-1745.62 m (core depth below seafloor)

Mostly fine to medium sandstone with few intercalations of siltstone. Dolomitic concretions occur at the top of section 2. Grains are moderate to subangular and moderate to well sorted. Shell fragments are mostly found in the upper part, organic material and wood fragment more frequent toward the lower part. Rare sponge spicules and diatoms. Moderate to high bioturbation was visible in the core. Wavy and parallel laminations. A few cross laminations are also observable.



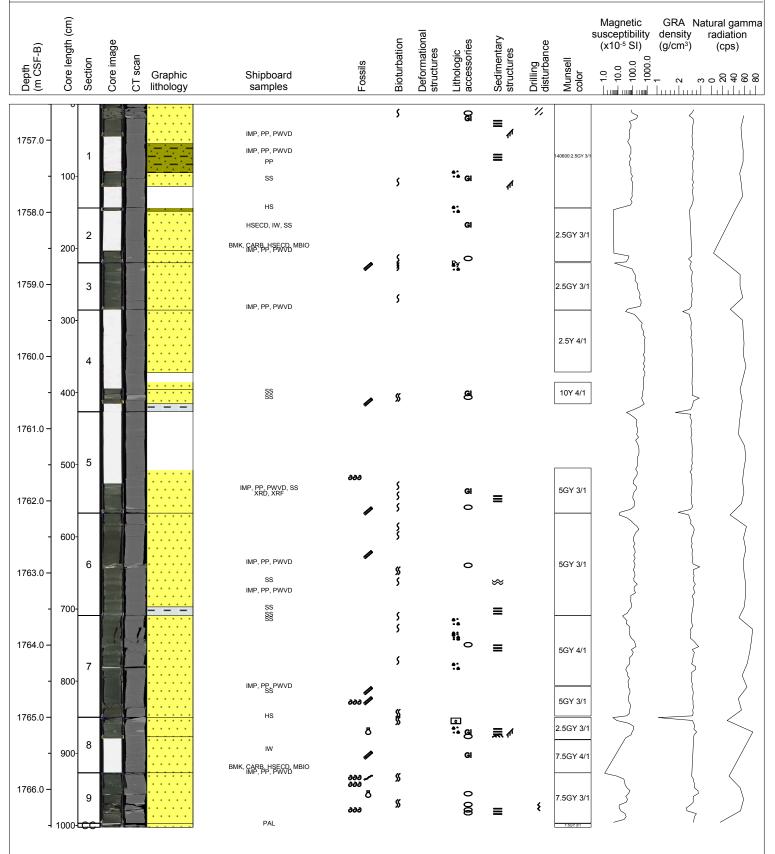
# Hole C0020A Core 12R, interval 1747-1755.18 m (core depth below seafloor)

Core 12 consists mostly of fine to medium sandstone and is quite fossilifereous especially in the interval 1749-1754 mbsf. Sandstone exhibits alternations of laterally continous 0.5-2 cm siltstone and shale. Glauconite is common in some parts. Wood fragments are common. Shell fragment, gastropod and rare diatoms are observed. Bioturbation is common. Parallel laminations are visible in the bottom section of the core. Two fault breccias occur in section 6.



#### Hole C0020A Core 13R, interval 1756.5-1766 m (core depth below seafloor)

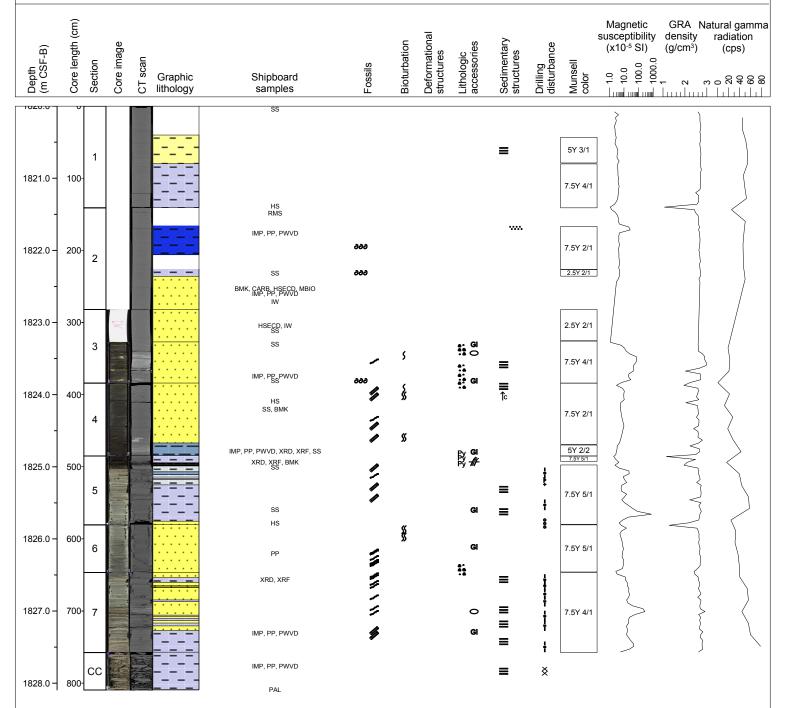
Core 13 dominated by fine to medium sandstone with few thin shale laminae. Some of sandstones are carbonate cemented and glauconitic. Grains are moderate to rounded and moderate to poorly sorted. Organic material and wood fragments are common. Bioturbation occurs throughout the core. Wavy and parallel laminations as well as cross beding appear in the core. Quite a few mud clasts are visible. Carbonate nodules are common throughout the core. Pyrite is visible in section 3.



## Hole C0020A Core 14R, interval 1820-1828.095 m (core depth below seafloor)

Core 14 consists of fine to medium sandstone and shale. Silty shale is common in sections 5 and 7. There is a 5-cm-thick coal horizon in section 5. Grains are moderate to subangular and moderate to well sorted. Organic material and glauconite become more frequent towards the lower part. Pyrite is common around the coal bed. Parallel laminations and bioturbation are common. Carbonate concretions are visible in section 3 and 7 (siderite - 48-59 cm).

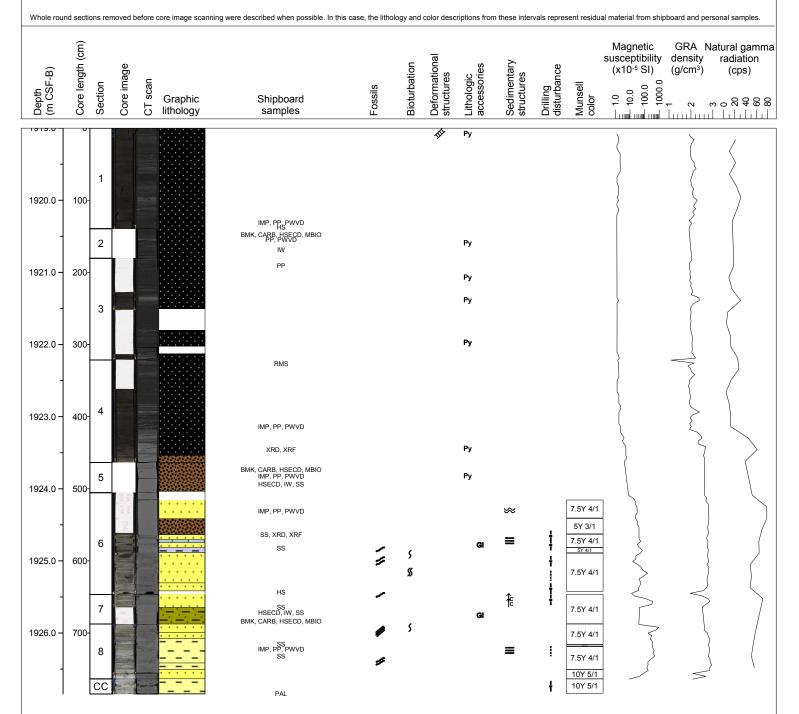
Drilling breccia occur in the core catcher. Sections 5 to 7 show moderate drilling disturbances (drilling mud enters between sandlayers and form biscuits).



## Hole C0020A Core 15R, interval 1919-1926.845 m (core depth below seafloor)

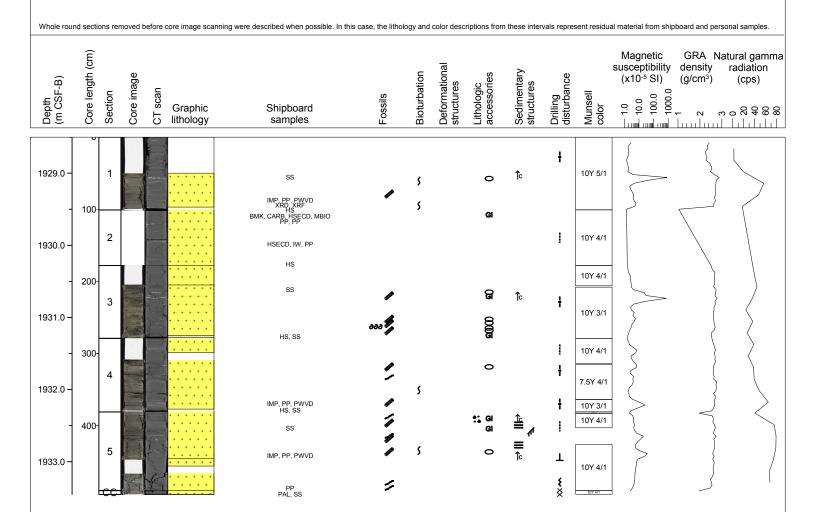
The top of section is brown coal (more lignite), fine-detritic to xylodetritic (4.5 m thick). Coaly shale occur below the coal. Grains of sandstones are angular to subrounded and moderate to well sorted. Pyrite and amber are observed in the coal layer. Organic material is common, bioturbation mostly in the lower part of the sections. Parallel and wavy laminations are common in some sandstones. Few coarsening upward cycles are visible in the lower part.

The lower part is slightly disturbed.



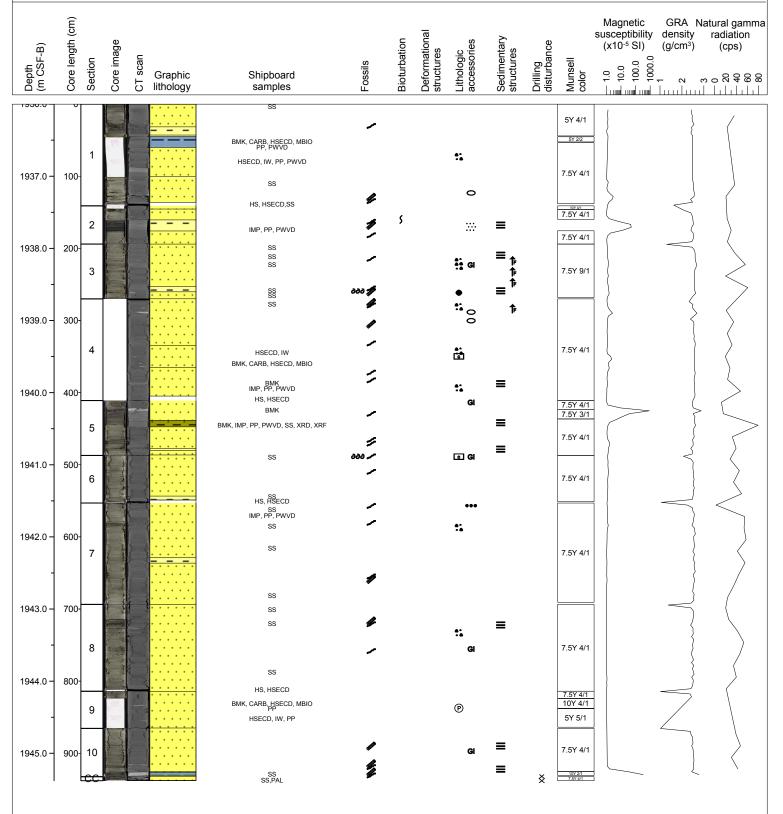
## Hole C0020A Core 16R, interval 1928.5-1933.455 m (core depth below seafloor)

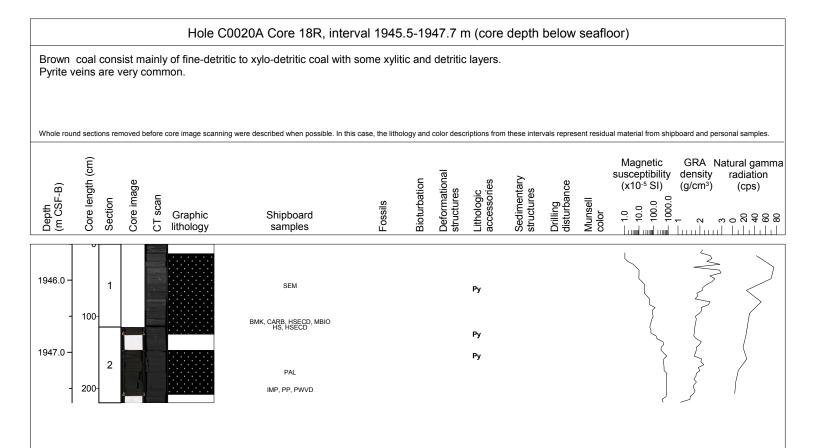
Core 16 dominated by organic-rich fine to medium sandstone. Grains are subangular to subrounded and moderate to poorly sorted. Glauconite is common. The upper part of the core is slightly disturbed by drilling. The other parts are moderately disturbed.



## Hole C0020A Core 17R, interval 1936-1945.38 m (core depth below seafloor)

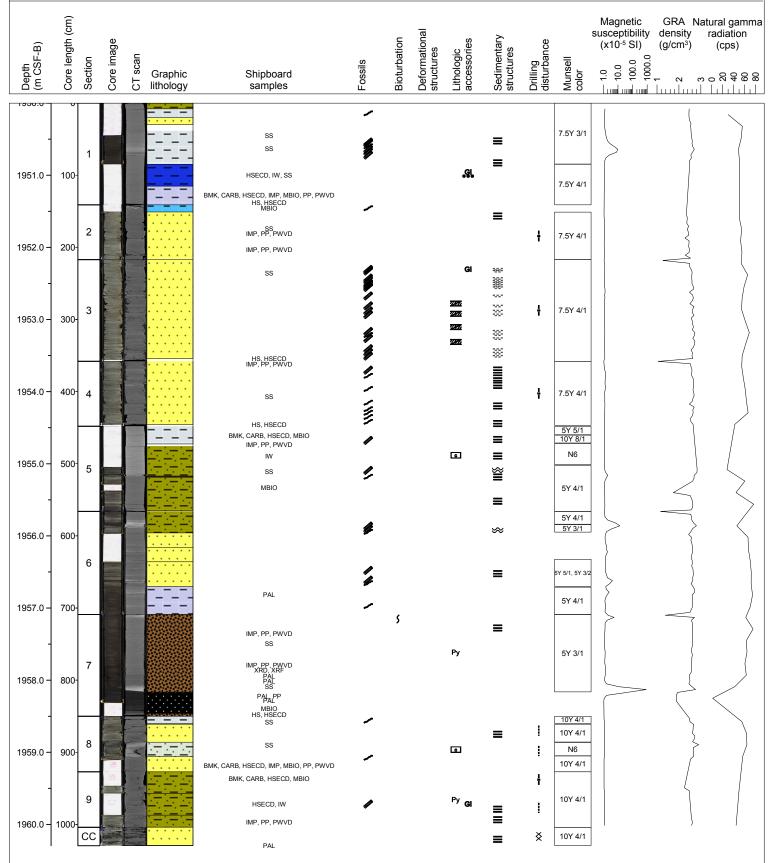
Core 17 consist of fine to coarse sandstone with some fine lamination of organic-rich layers, coaly shale and mudstone. Grains are subangular to subrounded and moderate to poorly sorted. Organic material, shell fragments and rare sponge spicules are observed. Fining upward sequences are common in section 3. Parallel laminations are visible in the whole core. Carbonate nodules are present in sections 1 and 4. Some well cemented sandstones also occur.





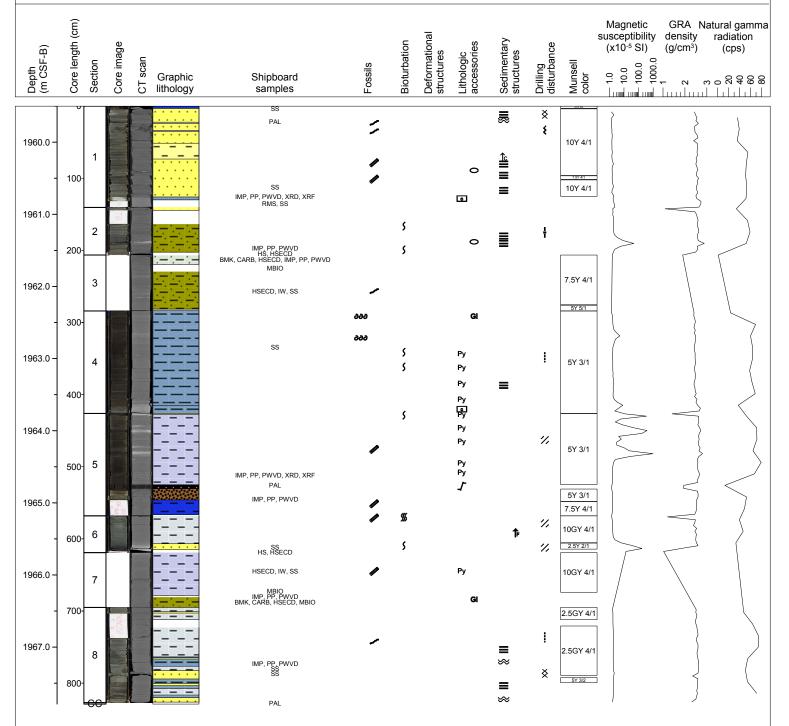
## Hole C0020A Core 19R, interval 1950-1959.5 m (core depth below seafloor)

Core 19 consists mostly of organic-rich sandstone and silty sandstone .One coaly shale (1m) and one thin coal layer (11cm) are observed in the middle of the sections. Grains are subangular to subrounded and moderate to poorly sorted. Organic material is common. Glauconite is visible in sections 1, 3 and 9. Pyrite occur in the coal, in coaly shale (abundant) and in silty sandstones at the bottom. Parallel laminations and wavy bedding occur throughout the core. Carbonate cemented silty sandstones are visible in the middle part and in the lower part of the core. Small oil shows are visible in section 3.



## Hole C0020A Core 20R, interval 1959.5-1967.79 m (core depth below seafloor)

The top of the section is dominated by dolomitic sandstone. From section 3 to the bottom, shale and siltstone occur. One coal bed and coaly shale occur in section 5. Grains are subangular to subrounded and moderate to well sorted. Organic material is abundant. Pyrite is common in silty shales and shales. Parallel and wavy laminations, cross and trough cross bedding are common. Carbonate concretions occur in the upper part. Some carbonate cemented horizons are visible throughout the core. The core is moderately disturbed.

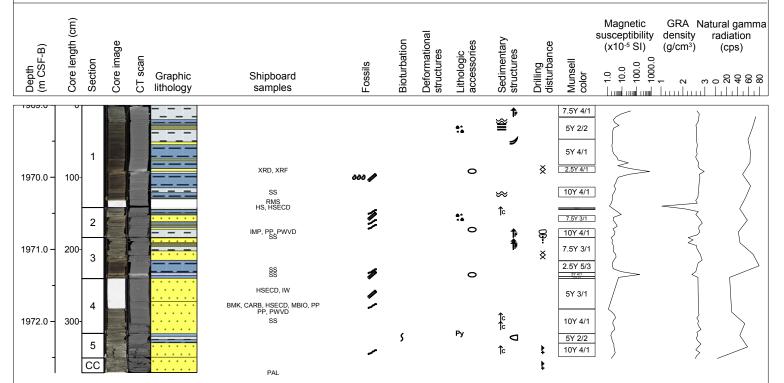


# Hole C0020A Core 21R, interval 1969-1972.71 m (core depth below seafloor)

The lithology of core 21 is mostly organic-rich siltstone and shale intercalated with some sandstones (2-32cm). At the bottom sandstone is dominant. Grains are moderate to angular and moderate to well sorted. In some parts, dolomitic siltstones occur. Organic material is common. Some bioturbation is visible in the lower part of the core. Parallel and wavy laminations as well as flaser and lenticular bedding are present. Some fining upward cycles are observable in the middle part of the core. Some coarsening upward cycles occur near the bottom.

Carbonate concretions are visible in sections 1, 2, 3, 5 (mostly sideritic).

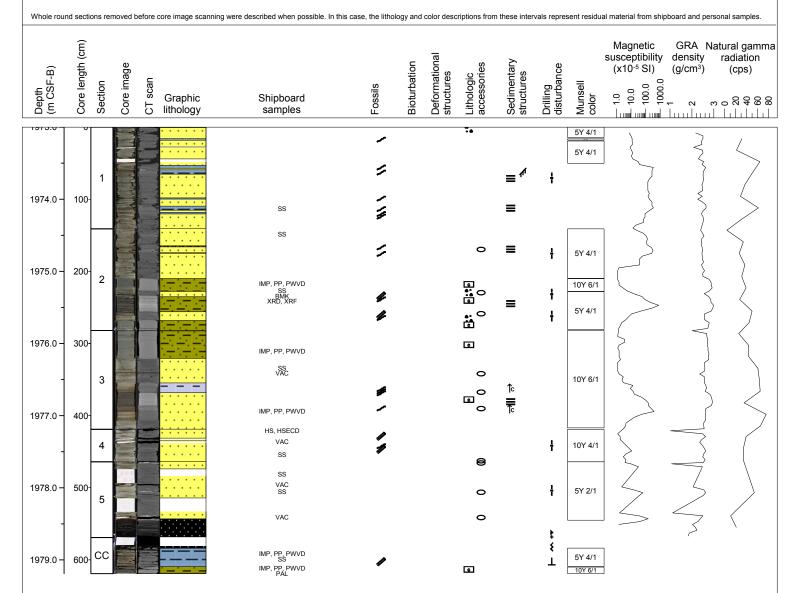
Drilling breccias and drilling biscuits appear in the upper and middle part of the core.



## Hole C0020A Core 22R, interval 1973-1979.19 m (core depth below seafloor)

The lithology of Core 22 consists of fine to medium sandstone intercalated with some thin siltstone layer. Thin brown coal layer (25cm) observed at the bottom part of the section along with coaly shale. Grains are angular to subrounded, moderate to well sorted. Organic material and sponge spicules are observed. Parallel and cross laminations and some coarseninig upward sequences occur. Carbonate nodules (common siderite) are common. At some parts sandstones are dolomitic and aragonitic.

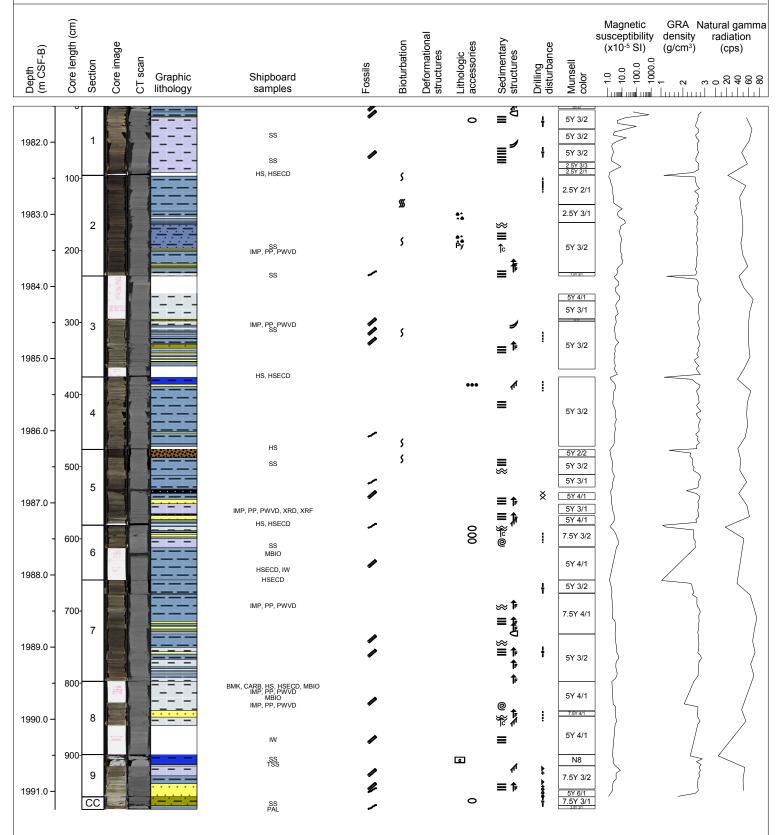
The core is slightly disturbed at the top and at the bottom.



## Hole C0020A Core 23R, interval 1981.5-1991 m (core depth below seafloor)

The lithology of Core 23 is dominated by shale with some intercalations of sandstone and siltstone. A few thin coal layer and coaly shale observed at section 3 and 5. Grains are subangular to well rounded and moderate to well sorted. Plant remains are common throughout the sections. Some slight bioturbation is observed particularly in the middle of the core. Parallel and wavy laminations, cross, lenticular and flaser bedding is common. Many fining and coarsening upward cycles occur throughout the core. Pyrite is visible in section 2. Carbonate concretions are visible in sections 1, 7 and 10 (sometimes sideritic). Some carbonate cemented layers are also visible.

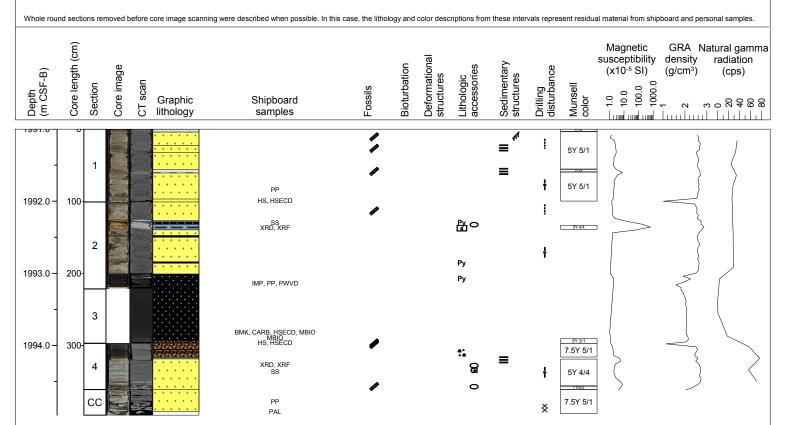
The core is slightly disturbed at the top and in the middle part. The lower-most part is soupy.



## Hole C0020A Core 24R, interval 1991-1994.965 m (core depth below seafloor)

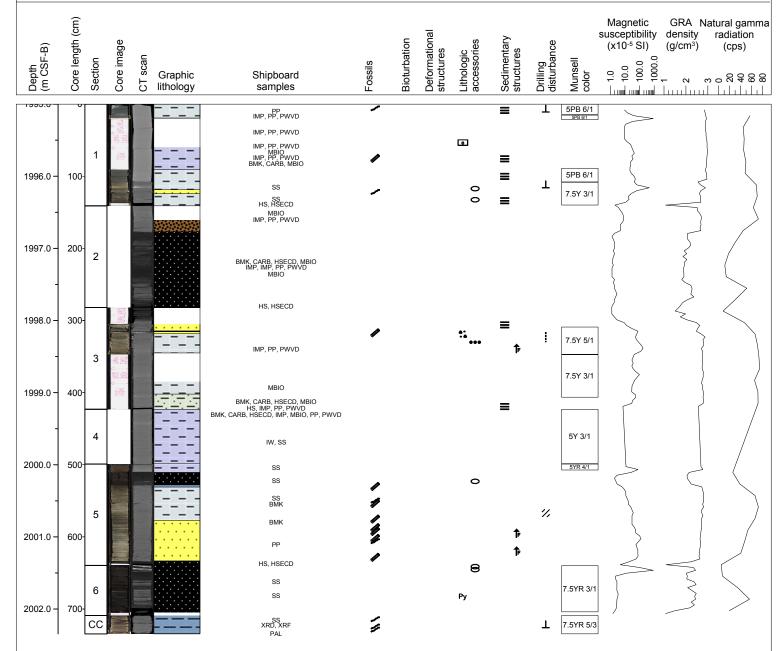
The litology of Core 24 is mostly medium sandstone with some thin shale layers. In some parts glauconitic sandstones occur. Two coal layers are observed ranging from 2-95cm thickness. Grains are moderate to well rounded and moderate to well sorted. Plant remains are common. Wavy and parallel laminations are common in the upper part. Carbonate concretions are common in the lower part. Sideritic silty shale occur in section 2 (25-35 cm). Pyrite is visible in the coal and in sandstones.

The core is slightly disturbed. A drilling breccia occur at the bottom.



## Hole C0020A Core 25R, interval 1995-2002.345 m (core depth below seafloor)

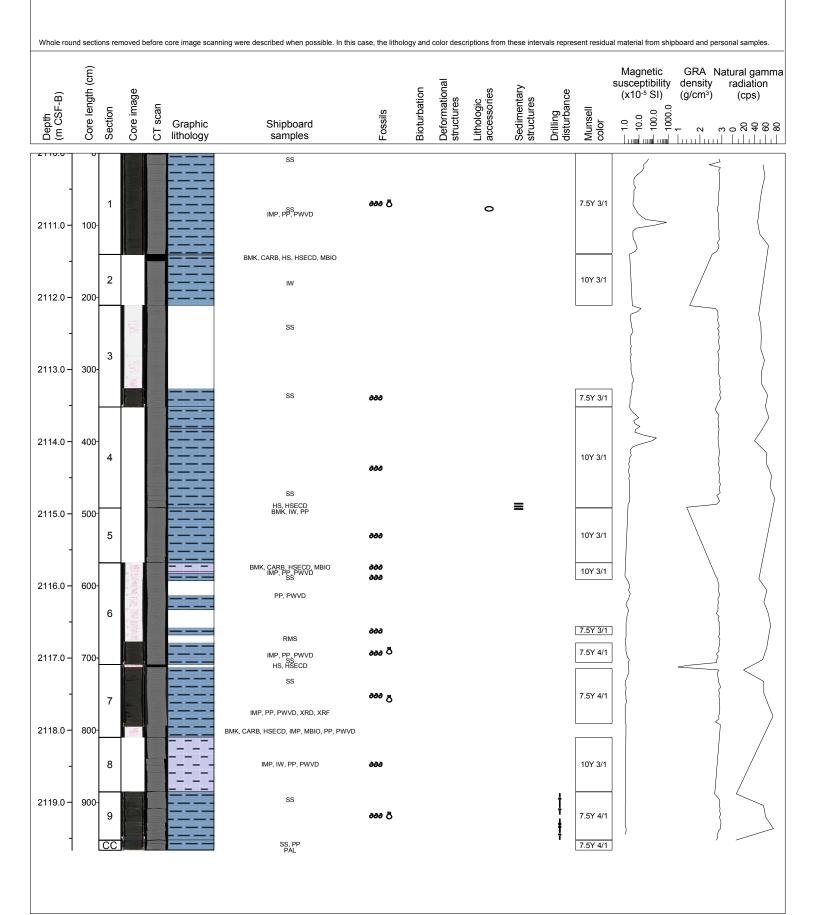
The lithology is mostly siltstone with some intercalations of sand. Three dull brown coal layers observed (sections 2-3, 5, 6). Some sandstones are carbonate cemented (some are dolomitic). Grains are moderate to subangular and moderate to well sorted. Organic material is abundant. Parallel laminations and some fining upward sequences occur in the core. Carbonate congretions are visible in sections 1, 5 and 6. Some pyrite appears in the coal.



## Hole C0020A Core 26R, interval 2110-2119.5 m (core depth below seafloor)

Massive silty homogeneous shale occur throughout the core. Grains are subangular to rounded and moderate to well sorted. Bivalve, gastropoda, and shell fragments are common.

Few carbonate concretions are visible in the upper part.

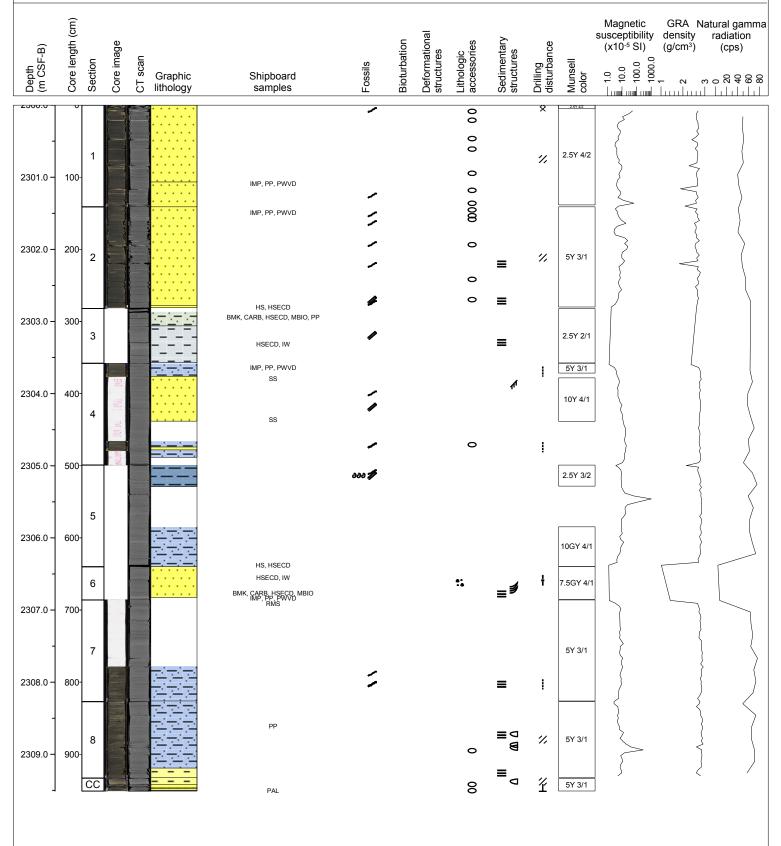


# Hole C0020A Core 27R, interval 2200-2204.605 m (core depth below seafloor)

Core 27 is mostly dominated by shale and siltstone layer. Grains are subrounded to subangular and moderately sorted. Organic material and plant remains are common. Gastropods and shell fragments are common. Shaly horizons in the lower part show parallel laminations and lenticular bedding. Whole round sections removed before core image scanning were described when possible. In this case, the lithology and color descriptions from these intervals represent residual material from shipboard and personal samples. Core length (cm) Magnetic GRA Natural gamma Deformational structures susceptibility density radiation Sedimentary structures Lithologic accessories Bioturbation Drilling disturbance (x10<sup>-5</sup> SI) (g/cm<sup>3</sup>) Depth (m CSF-B) Core image (cps) CT scan Section 1000.0 Munsell color Fossils 100.0 10.0 <u>1</u>0 Graphic Shipboard  $^{\infty}$  0  $^{\infty}$  0  $^{\infty}$  0  $^{\infty}$ N lithology samples **2**22 10Y 3/1 1 IMP, PP, PWVD 2201.0 -100-HS, HSECD, IW **2**22 IMP, PP, PWVD 5Y 3/1 2 SS **000** BMK, CARB, HSECD, IMP, MBIO, PP, PWVD 7.5Y 4/1 RMS 2202.0 -200-3 5Y 5/1 IMP, PP, PWVD 2203.0 -300-HS. HSECD ≣⊲ 999 <u>aaa</u> 7.5Y 3/1 4 2204.0 400-IMP, PP, PWVD, XRD, XRF =

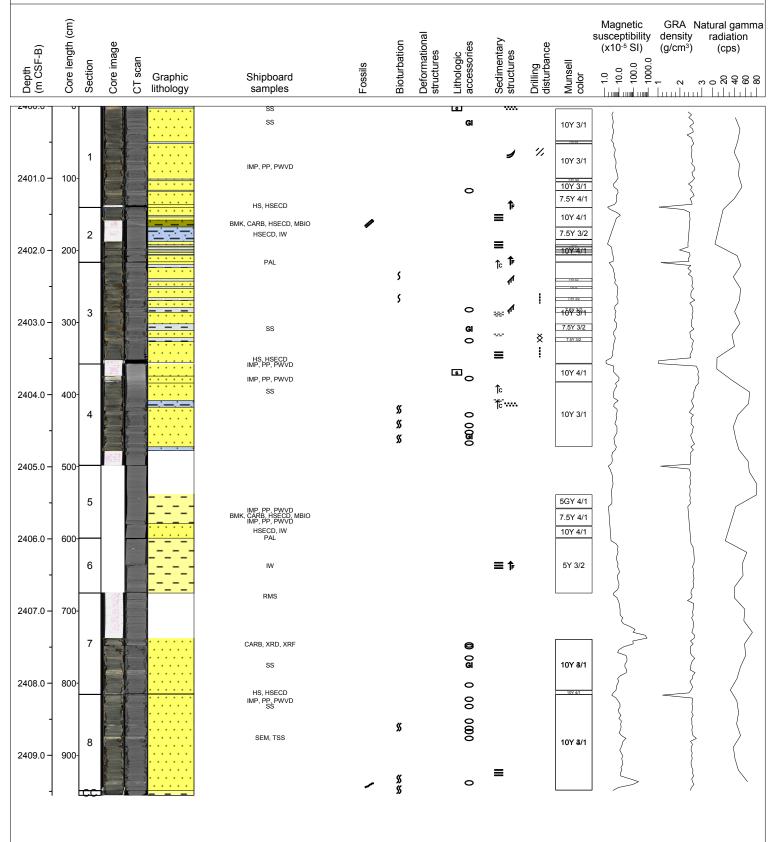
## Hole C0020A Core 28R, interval 2300-2309.5 m (core depth below seafloor)

The upper part of core 28 is dominated by dolomitic sandstone. The lower part shows siltstones intercalated with sandstones and shale. Grains are subangular to rounded and moderately sorted. Organic material and plant remains are common. Parallel laminations, lenticular and flaser bedding are common. Some carbonate bands and nodules (siderite) are also observed, especially in the upper part. Sandstones and siltstones at the bottom are moderately to heavily disturbed.



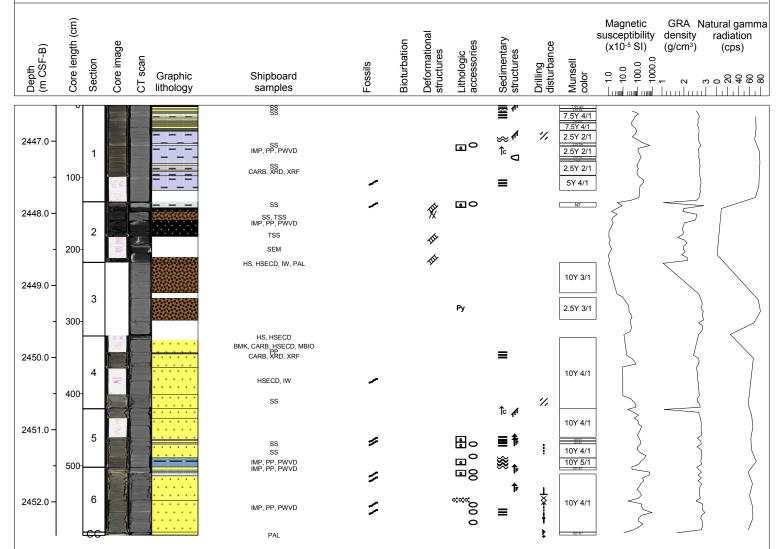
### Hole C0020A Core 29R, interval 2400-2409.5 m (core depth below seafloor)

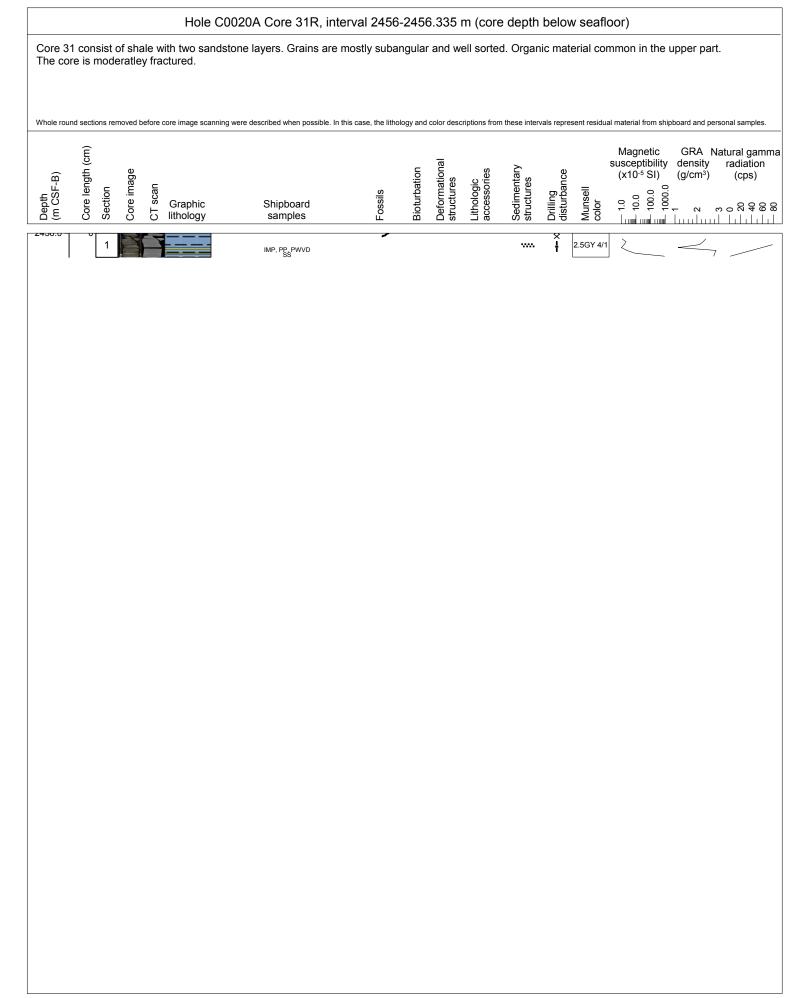
The litology is dominated by fine to medium dolomitic sandstone intercalated with some siltstone layers at the upper part. Abundant carbonate banding and nodules (both are sometimes sideritic) are observed at the lower part of the section. Grains are moderately rounded and moderately to poorly sorted. Wood fragments are common. Bioturbation in the lower and middle part is common. Parallel laminiations, cross bedding and lenticular bedding occur throughout the core. Some coarsening and fining upward sequences are visible. The upper to middle part of the core is slightly to moderately fractured by drilling.



## Hole C0020A Core 30R, interval 2446.5-2452.465 m (core depth below seafloor)

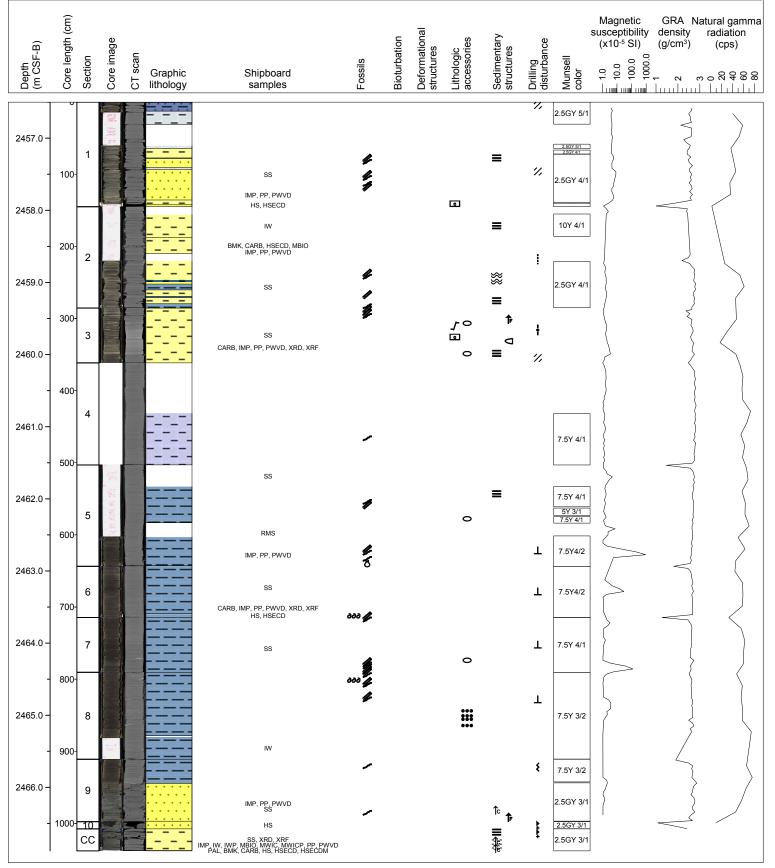
Core 30 is dominated by shale intercalated with fine to medium sandstones and siltstones in the upper part. The lower part is dominated by sandstones intercalated with some carbonate cemented siltstones. Grains are subangular and well sorted. Organic material is common. Some siderite concretion and some sideritic bands occur throughout the core. Parallel and wavy laminations, cross and lenticular bedding is visible in the upper part of the core and in the lower part. Some fining upward (bottom) trends and one coarsening upward trend is observable. A brown coal seam appear in section 2. Drilling breccias are visible in sections 1 and 6. Minor disturbance throughout the lower part of the core.





### Hole C0020A Core 32R, interval 2456.5-2466 m (core depth below seafloor)

The upper part of core 32 is dominated by fine to medium dolomitic sandstone with some layers of siltstone. Abundant carbonate bands and nodules are observed in the upper part of the section (sometimes sideritic). The middle part is dominated by homogeneous silty shale and sandstone occur in the bottom part. Grains are subangular to well rounded and moderately to well sorted. Wood fragments are common. Parallel and wavy laminations are common. Coarsening upward sequences are very common at the bottom of the core. The core is moderately fractured.



	Hole C0	020A Visual C	uttings Des	cription (Macrosco	opic), 636.5-24	66.5 m (below sea floor)									
						Lithology Cuttings type Cohesion Wood/Lignite									
	Clay:Silt:Sand (%)					Clay ⊕ - Unconsolidated 2 - Medium 1 - Rare semiconsolidated 3 - High 2 - Few									
- Û	100 80 60 40 20 0	0	h			Orit      O - Semiconsolidated 3 - Common     O - Consolidated 4 - Abundant     O - Consolidation 5 - Dominant									
Depth (m MSF)	0 20 40 60 80 100	Cuttings	hesion 2 3 (	Wood/Lignite	Munsell										
		type U			color	Macroscopic description									
640.0 -		0			5Y 3/2	Cement fraction. Clay rich, some fine sand with laminations									
-		0			5Y 3/2	Shaly, less sand, black clastic minerals									
660.0 -		0			5Y 3/2	clay rich, shell fragments									
		0			5Y 3/2	clay rich, no sands, only silt									
680.0 -		0			5Y 3/2	Clay rich, silty									
-		0			5Y 3/2	Clay rich, lighter particles, some coarser fragments									
700.0 -		0			5Y 3/2	clay rich, lighter particles = tuffitic layers, coarser fragments in particles > 4mm									
-		0			5Y 3/2	coarser, less clay, shell fragments 2-3 mm									
720.0 -		0		5Y 3/2	tuffaceous, rare shells 3-4 mm, common silt, little sand										
-		0	shaley, mostly clay, shell fragments common, little sand												
740.0 -		clay, see above													
760.0		clay-rich, no sand, dark colored silt grains													
760.0-	= = =	black heavy min.													
780.0	760.0     SY3/2     Clay rich, dark colored silt grains, common clastic carb min ar black heavy min.       760.0     SY3/2     Clay rich, see above														
780.0		0			5Y 3/2	clay rich, dark colored silt grain clay rich, common clastic carb and black heavy min, rare shell									
800.0 -	<u> </u>	0			5Y 3/2	fragment (2mm)									
800.0 -		U O			5Y 3/2	common clastic carb min (1-4mm), few shell fragment (1-3mm) clay rich with abundant lithic fragment, rare glauconite, black small									
820.0 -		0			5Y 3/2	fragment (possible wood/org material), plant debris silt with abundant lithic fragment, rare black small fragment									
020.0		U O			5Y 3/2-4/2	(possible wood/org material), plant debris									
840.0 -		U D			5Y 3/2-4/2 5Y 3/2-4/2	silt with abundant lithic fragment									
_		U O			51 3/2-4/2 5Y 3/2-4/2	silt with abundant lithic fragment silt with abundant lithic fragment (possible sand, igneous rock?)									
860.0 -		U O			5Y 3/2-4/2	silt with abundant lithic fragment (possible saild, greeds rock )									
_		U O			5Y 3/2-4/2	rock?) clay rich, light colored silt, common carb mineral, quartz									
880.0 -		U O			5Y 3/2-4/2	clay rich, light colored silt, few lithic fragment (sand?)									
		U O			5Y 3/2-4/2	clay rich, light colored silt, rew lithic fragment (sand?)									
900.0 -		U O			51 3/2-4/2 5Y 3/2-4/2	4/2, clay rich, light colored silt, shell fragments, lithic fragments									
		U O			5Y 3/2-4/2	(volcanic) clay rich light colored fragments, volcanic fragments (black),									
920.0 -		U O			5Y 4/2-5/2	carbonate/quartz fragments silty. Lithic fragments of volcanic material and carbonate									
	<u> </u>	Ū O			5Y 3/2	rounded lithic fragments, small woody fragments. Some silt to fine									
940.0 -		U O			5Y 3/2, 5Y 4/2	sand light fragments (pumice?) Rounded lithic fragments									
	<u> </u>	Ū O			5Y 3/2, 5Y 4/2	lithic fragments and shell fragments. Clay silts, additionaly white									
960.0 -		Ū O			5Y 3/2, 5Y5/2, 5Y 4/2	fragments (cc, quartz ~5/10%). Very low amounts of fine sand light colored and lithic fragments. Possible calc ooze									
	<b></b> =_=_=,·	Ŭ O			5Y 4/2, 5Y 4/4	clayey silt and fine sands. Light colored fragments (rare)									
980.0 -		C D			5Y 3/2, 5Y 4/3	light fragments (5%), fine sand (~10%, unsorted, sub angular)									
		C O			5Y 4/2-5Y 3/2, 5Y 4/3	(rare) silty clay 5-10% fine sand. Lithic fragments are rare									
1000.0 -	<u> </u>	Ŭ O			5Y 4/2-5Y 3/2, 5Y 4/3	(rare) silty clay, 5-10% fine sand. Common Lithic fragments									
		C O			5Y 3/2, 5Y4/3	(rare) Clayey silt, fine sand (5%). Few volc. frags., 1 big biotite,									
1020.0 -		Ŭ O			5Y 3/2, 5Y4/3	concretion?? (rare) Darker silty, fine sand (5%), carbonate. Few lithic fragments,									
		v			0.012,0140	pumice									

	Hole CC	020A Visual	Cuttings Des	scription (Macrosco	opic), 636.5-24	66.5 m (below sea floor)
Depth (m MSF)	Clay:Silt:Sand (%) 100 80 60 40 20 0 20 40 60 80 100	Cuttings type	Cohesion 1 2 3	Wood/Lignite 0 1 2 3 4 5	Munsell color	Lithology Cuttings type Cohesion Wood/Lignite ○ - Unconsolidated ⊕ - Unconsolidated 2 - Medium 1 - Rare semiconsolidated 3 - High 3 - Common ● - Semiconsolidated • - Poor consolidated ● - Poor consolidated • - Door consolidated • - Poor consolidated • - Door consolidated • - Doo
						darker silty fine sand abundant clay, lighter silt, possible carbonate
1040.0 -	<u> </u>	0			5Y 3/3, 4/2	ooze light gray
- 1040.0	<u> </u>	0			5Y 4/2-5Y 3/2	dark silt, fine sand, lithic fragment, pumice, sulfide(?)
1060.0 -	<b></b>	0			5Y 4/2-5Y 3/2	dark silt, fine sand, lithic fragment, pumice, possible sulfide
	<b></b>	0			5Y 4/2-5Y 3/2	dark silt, lithic fragment, wood fragments, pumice
1080.0 -		0			5Y 4/2-5Y 3/2	dark silt, lithic fragment, woody debris dark silt, wood fragments, possible authigenic sulfides and
		0			5Y 3/2-5Y 4/3 -5Y 4/2	carbonates
1100.0 -		0			5Y 3/2, 5Y 5/3	silty with fine sand and organic-rich lamina in cutting fragments
		0			5Y 3/2, 5Y 4/2	silty with gray sand, few wood and shell fragments 60% Olive black clayey silt, 15% cemented silt, 25% fine sand
- 1120.0		•			7.5Y3/1	with silt
		0			7.5Y3/1	olive green poorly sorted clay to coarse sand. No cemetation. Quartz, pumice, hornblende, lithic fragments
-		Ð			7.5Y3/1	4 lithologies. Olive black paley (clayey?) silt organic fine sands.
1200.0 -		Õ			7.5GY2/1	Clay rich silt. Cemented silt fine to medium sand. Unconsolidated. Silts (20% total. Very similar
-		0			5Y3/1, 2.5GY3/1, 5Y4/1	to sample above but finer) olive black fine sand. Also shaley silt and an organic rich silt. Each
1220.0 -		⊕			5Y3/1, 2.5GY3/1, 5Y4/1	lithology equal in proportion identical lithologies but slightly coarser. Organic rich silt sandier
-		⊕ ⊕			5Y3/1, 2.5GY3/1, 5Y4/1	same as C0020A-94-SMW, but slightly sandier and slightly
1240.0 -		⊕			5Y3/1, 10Y3/2	reduced organic content fine sand layers and silt, with increasing amounts of clay. 10Y3/2 lithologue in glaw right
-		0			5Y 3/1,7Y3/2	lithology is clay rich clay rich silt with 15% silty shale and fine sand particles
1260.0 -		- [				No cuttings
-					5Y 3/1 5Y4/1 , 5Y3/1, 5Y 3/2	5Y4/1 siltstone, 5Y3/1 siltstone, 5Y 3/2 silty clay. Small shell fragments. Brown chips in silt
1280.0 -		0			5Y4/1, 5Y3/1, 5Y3/2	Tragments. Brown crups in sitt Dolomitic, many shell fragments. Some fine to medium sand
-		9			5Y4/1, 5Y3/1, 5Y3/2	Organics quite common, more sand. White dolomite common
1300.0 -	<u> </u>	0			5Y4/1, 5Y3/1, 5Y3/3	Siltstone. 2 chips of fine sand. Some dolomite
-	<mark></mark> =_=_=_= <mark>:</mark>	0			5Y4/1, 5Y3/1, 5Y3/4	white dolomite fragments. Brown chips. Greater clay. Poorly sorte
1320.0 -	<b>_</b>	9			7Y5/1, 10Y3/1	dolomitic grains are common, shell fragments, devitrified volcanic
-	<u> </u>	9			7Y5/1, 10Y3/1	dolomitic grains (~5%), shell fragments, volcanic clasts, some
1340.0 -		0			5Y4/1	bigger quartz grains shell fragments common - white possible carbonate
-		0			5Y4/1	fairly homogenous, few shell fragments
1360.0 -		0			5Y4/1	fairly homogenous, few shell fragments, white possible carbonate
-		0			10Y3/2	homogenous silt, common shell fragments, few possible carbonate
1380.0 -		0			5Y4/1	mostly homogenous silt, common shell fragments, few possible
-		0			5Y3/1	carbonate Clayey silt. Well rounded. Volcanic glass. Shell fragments
1400.0 -		0			513/1 5Y3/1	
	= <u></u>	•				More clay, less shells. Well rounded
		0			5Y3/1	Well rounded. Same as above. Pyrite observed

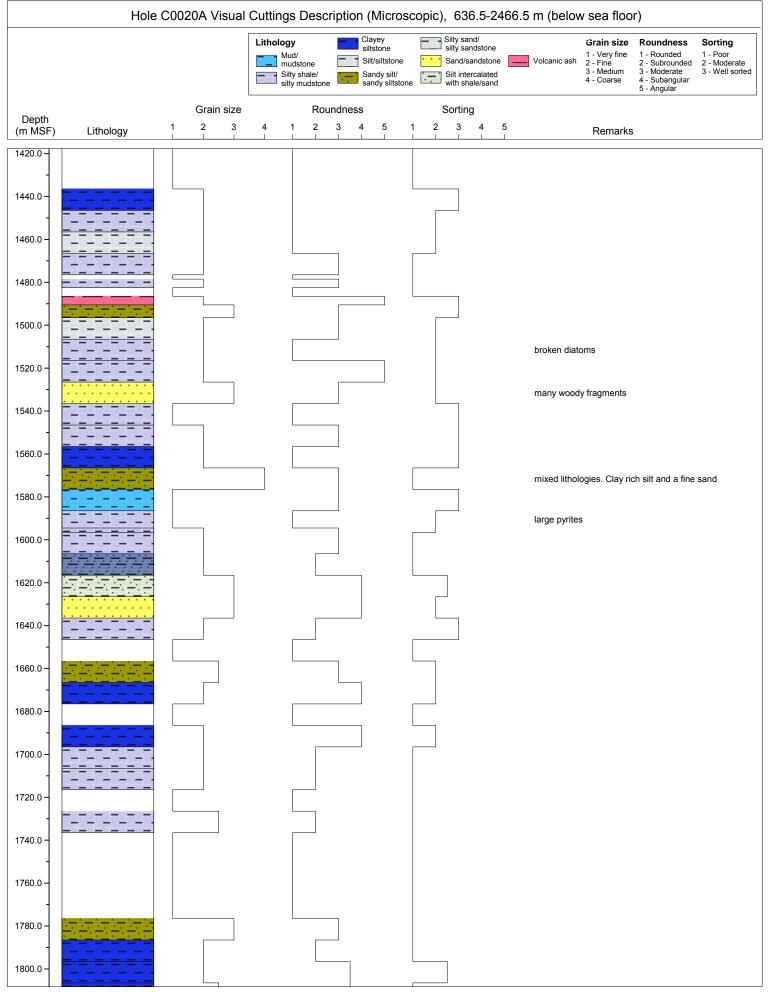
	Hole C	0020A Visual C	uttings Descri	ption (Macroso	copic), 636.5-24	66.5 m (below sea floor)
	Clay:Silt:Sand (%)					Lithology         Cuttings type         Cohesion         Wood/Lignite           Clay         ○ - Unconsolidated ⊕ - Unconsolidated semiconsolidated         1 - Low         0 - Not observed           Silt         ○ - Semiconsolidated ⊕ - Semiconsolidated         3 - High 3 - High         2 - Few 3 - Common
h SF)	100 80 60 40 20 0	C	ohesion	Wood/Lignite		Sand • - Consolidated 4 - Abundant • - Poor consolidation 5 - Dominant
Depth (m MSF)	0 20 40 60 80 100	Cuttings type		1 2 3 4 5	Munsell color	Macroscopic description
1420.0 -						
1420.0 -		0			5Y3/1	Moderate rounding silt. Lithic fragments. Pyrite, no glass
1110.0		0			5Y3/1	Hard coarse fraction (conglomerate). Clay silt. Pumice
1440.0 -		0			5Y3/1	More clay, less conglomerate. Shell fragments. Silt still dominant
1400.0		•			5Y3/1 to 5Y3/2	Clayey silt with fine sand. Common shell fragments and pumice.
1460.0 -		0			5Y3/1 5Y3/1	Silty clay with fine sand. Few shell fragments, chert, and pumice. Silty clay with fine sand. Few chert granules. Rare shell fragments
-				<b></b>	5Y3/1 5Y3/1	Well rounded fine silt. High clay content. Conglomerate rare. Few shell fragments and pumice
1480.0 -		- A			5Y3/1 5Y3/1 5Y3/1	Silty clay with fine sand. Few chert granules. Rare shell fragments Silty clay with fine sand. Few shell fragments and pumice.
-		8		ī	5Y3/1	Carbonate material present. Laminations. Shell fragements. A lot of volcanic material Sith equation for each constant fragments and purples
1500.0 -		0			5Y3/1 to 5Y3/2	Silty clay with fine sand. Few shell fragments and pumice. Carbonate material present. Silty clay with some laminations visible in cuttings. Rare pumice.
-		0			5Y3/1 to 5Y3/2	Volcaniclastic. Ash, pumice and tuffs all present. Moderate rounding
1520.0 -		0			10Y3/2	Silty clay with some laminations visible in cuttings. Rare pumice. Mostly homogenous silt w/fine sand. Shell fragments common.
-		0			10Y3/1	Silty clay with common shell fragments and rare chert and quartz granules. silty clay with amount of fine sand. Common shell fragments, rare
1540.0 -		$\bullet$			7.5Y2/2 10Y2/1	chert lithic fragments Organic rich. Few shell fragments. Silty. Laminations in fine
-		$\bullet$			7.5Y2/2 10Y2/1	fraction. Rounded small amounts of pumice Organics in coarse fraction. Silty. Brown clay 20% of sediment
1560.0 -		$\bullet$			7.5Y3/1	Silt few shells. A little fine sand. Rare pyrite. Rare pumice Silt. Angular to subrounded. Silt and brown clay
-		•			7.5Y2/2 10Y2/1	Brown clay laminated and silty sand
1580.0 -		0			7.5Y2/2, 2.5Y2/1, 7.5Y3/1	Shell fragments and clay laminations, silty. 2 types of clay. One light brown and one dark brown. Some well rounded dark clasts.
-					5Y3/1	Silty clay and fine sand. Shell fragments. Some well rounded grains
1600.0 -		Ŏ			5Y2/1, 7.5Y3/1	Clay with silt. Few pumice and shell fragments. Slightly contaminated. Lithic fragments. Dark brown silty clay with fine laminations. Many shell fragments. Pumice rare
-		0			10Y3/2	Dark brown silty clay. Common. Large lithic fragments. Wood and shell fragments. Less silt. Pumice. gray clay rich silt
1620.0 -		•			10Y3/2, 10Y3/1	few lithic fragments and wood, rare shell fragments
-		0			10Y3/1, 10Y2/1	shell fragments and lithic grains
1640.0 -	<mark></mark>	•			10Y3/2, 10Y3/1	few lithic fragments,
-		•			10Y3/1, 10Y4/1	sandy cuttings are rare, few shell fragments, few pyrites, glauconite, few grains of conglomerate
1660.0 -		0			10Y3/1, 10Y4/1	minor litho = clayey sandstone, few grains of conglomerate
		$\bullet$			5Y3/1, 10Y4/1	small pieces of sandstone, volcanic ash, grains from conglomerate
1680.0 -		•			5Y3/1, 2.5GY4/1	pieces of conglomerate, few smaller lithic fragments, few pyrite
		•			5Y3/1, 2.5GY4/1	few grains of conglomerate, small lithic fragments, fragments of sandstone,
1700.0 -		•			5Y3/1, 2.5GY4/1	few grains of conglomerate, few lithic fragments, few shell fragments
-		•			5Y3/1, 2.5GY4/1	3 colors, brown = dominant, few pyrite, few lithic fragments,
1720.0 -		0			5Y3/1, 2.5GY4/1, 7.5Y4/1	1 grain of conglomerate, small lithic fragments, sand content increases, few shell fragments, quartz grains and glauconite
-		0			5Y3/1, 2.5GY4/1	lithic fragments, few shell fragments, pumice or carbonate??? (ss 201-2)
1740.0 -		0			7.5Y3/1, 2.5GY3/1	silty clay and clayey silt are abundant, lithic and shell fragments
-		•			7.5Y3/1, 2.5GY3/1	more than 3 colors, few grains of conglomerate, shale fragments, sandy grains, glauconite, quartz, small lithic fragments, biotite
1760.0 -		•			7.5Y3/1, 2.5GY3/1	fairly homogenous dark gray silty clay, few shell fragments
-		•			7.5Y3/1, 2.5GY3/1	Dark gray silt with minor fine sand, few wood and shell fragments, rare lithic fragments
1780.0 -		•			2.5GY3/1, 2.5Y5/3, 5Y7/1	Dark gray clayey silts, 3 color, few shell fragment, rare lithic fragment, rare quartz, 1 coal chip
-		•			3.5GY3/1, 2.5Y 5/3, 5Y7/1	Clayey siltstone, 3.5GY3/1 dominant, some 2.5Y5/3, rare 5Y7/1, rare lithic fragment, some chips are glauconitic, few laminations on
1800.0 -		•			3.5GY3/1, 2.5Y 5/3, 5Y7/1	chips are visible Homogeneous silt chips, dominant 5GY5/3 , common 2.5Y5/3 ,
				7		few 5Y7/1, rare sand, common shell fragment

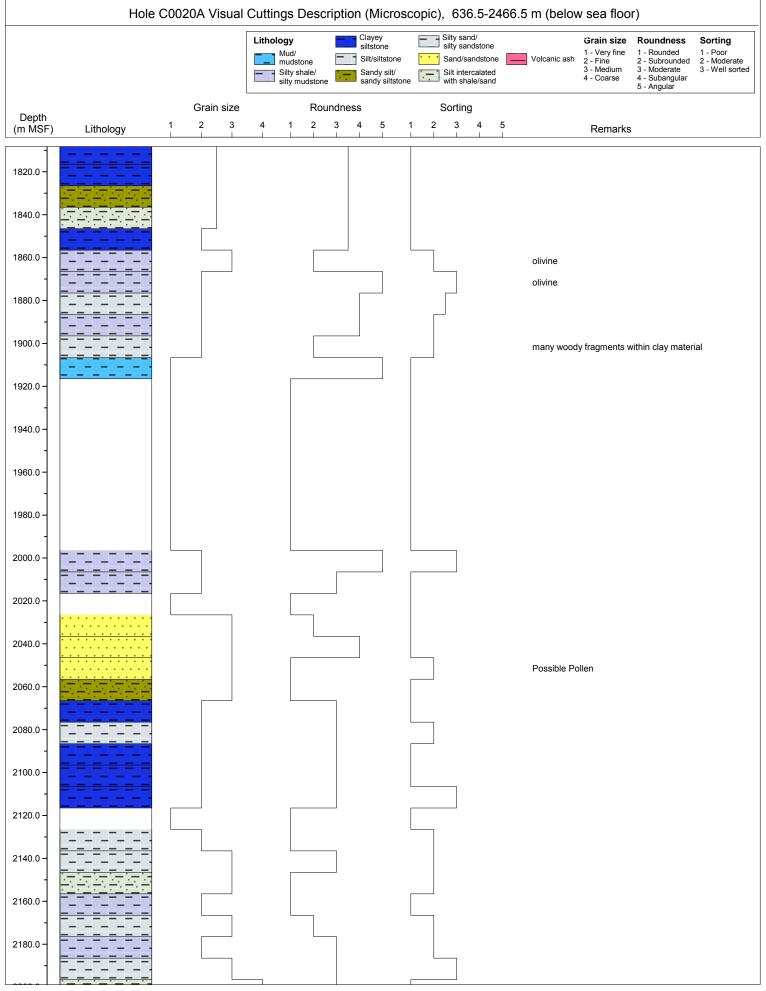
	Hole CC	020A Visual C	uttings Desc	ription (Mac	roscopic), 636.5-24	466.5 m (below sea floor)								
SF)	Clay:Silt:Sand (%) 100 80 60 40 20 0		sheeine	Wood#izzita		Lithology         Cuttings type         Cohesion         Wood/Lignite           Clay         - Unconsolidated         1 - Low         0 - Not observed           Silt         semiconsolidated         2 - Medium         1 - Rare           Silt         - Sand         - Consolidated         3 - High           Sand         - Somoonsolidated         - Not observed           Poor consolidated         - High         2 - Few           Source         - Source         - Abundant           Poor consolidation         5 - Dominant								
Depth (m MSF)	0 20 40 60 80 100	Cuttings type	ohesion 1 2 3 0	Wood/Lignite	5 Munsell	Macroscopic description								
					3.5GY3/1, 2.5Y 5/3, 5Y7/									
1820.0 -		0			3.5GY3/1, 2.5Y 5/3, 5Y7/	few 5Y7/1, rare sand, common shell fragment, a few quartz, rare coal chip, rare shale laminations								
-	<b></b>	0			3.5GY3/1, 2.5Y 5/3, 5Y7/	visible, rare lithic grain								
1840.0 -	<b></b>	9			7.5Y 4/2	visible, rare lithic grain, common shell fragments, common glauconitic in silt and sand chips								
-	<b></b> =_=_= <mark>:::</mark>	0			5Y3/2 abundant, common 7.5Y 4.	Shaly glauconitic silt, some laminations on chips are visible, common shell fragment, abundant coal chips Shaly glauconitic silt, some laminations on chips are visible								
1860.0 -	<mark></mark> =_=_= <mark>···</mark>	0			7.5Y4/2	abundant shell fragments and abundant coal chips Grayish olive clayey silt, shells common, 0.25-1mm fraction lignite								
-	<b></b> =_=_=_= <mark>:</mark>	0			7.5Y4/2	dominant same as 221, shells common, 0.25-1mm fraction lignite abundant								
1880.0 -		0			7.5Y4/2	same as 222, shells common to few, 0.25-1mm fraction lignite abundant abundant								
-		0			7.5Y4/3	dark olive clayey silt, shells few to rare, 0.25-1mm fraction lignite abundant								
1900.0 -		0			7.5Y4/3	same as 225, shells few to rare, 0.25-1mm fraction lignite dominant								
-		0		7.5Y4/3	same as 226, shells few to rare, 0.25-1mm fraction lignite dominant									
1920.0 -	<u> </u>	0			7.5Y4/3	same as 226, shells few to rare, 0.25-1mm fraction lignite dominant								
-		0			7.5Y4/3	same as 226, shells few to rare, 0.25-1mm fraction lignite dominant								
1940.0 -		same as 226, shells few to rare, 0.25-1mm fraction lignite dominant												
-	1940.0 - T.5Y4/3 same as 226, shells few to rare, 0.25-1mm fractors of the set of the se													
1960.0 -	<u>···</u>	0		<b></b>	7.5Y5/3	same as 242, shells few to rare, 0.25-1mm fraction lignite dominant								
1980.0 -		0			7.5Y3/2	olive black silty sand, shells few to rare, 0.25-1mm fraction lignite dominant								
1960.0 -		0			7.5Y3/2	same as 249, shells few to rare, 0.25-1mm fraction lignite dominant								
2000.0 -		0			7.5Y3/2	same as 250, shells few to rare, 0.25-1mm fraction lignite dominant								
-				Г	5Y2/1, 10Y4/1 5Y2/1, 10Y4/1	coal with silty fine sand and clay, few shell fragments fine sands and clay with coal fragments and rare lithic fragments								
2020.0 -		0			5Y2/1, 10Y4/1	and shell fragments coal with slity clay								
-		0			5Y2/1, 10Y4/1	coal with sitty fine sand and sitty clay								
2040.0 -		9			5Y4/1	coal with sitty fine sand and sitty clay								
-		0			5Y4/2	silt with fine to medium sand and silty clay, laminations visible, few								
2060.0 -		9			5Y4/1 to 5Y3/1	pumice fine to medium sand with silty clay, common coal and pumice								
-		<b>9</b>			5Y4/1	fine to medium sand with silty clay, few pumice								
2080.0 -		0			5Y4/1 to 5Y3/1	silt with fine sand with silty clay								
-		0			10Y4/1	homogenous silty clay, rare shell fragments								
2100.0 -		0			10Y4/1	homogenous silty clay, rare shell fragments								
-		0			10Y4/1	silty gray clay with few shell fragments								
2120.0 -		0			10Y3/1	clay with fine sand- laminations visible in some cuttings, rare shell fragments								
-		0			10Y3/1	silty clay with fine sand and few shell fragments								
2140.0 -		0			10Y3/1	silty clay with fine sand and few shell fragments								
-		0			10Y3/1	silty clay with fine sand and few shell fragments								
2160.0 -		0			10Y3/1	silty clay with fine sand and common shell fragments								
-		0			10Y3/1	olive black silty clay, shaly								
2180.0 -		0			10Y3/1	olive black silty clay, shaly								
-		0		L	10Y3/1	olive black silty clay, shaly, volcanic ash few								
				36										

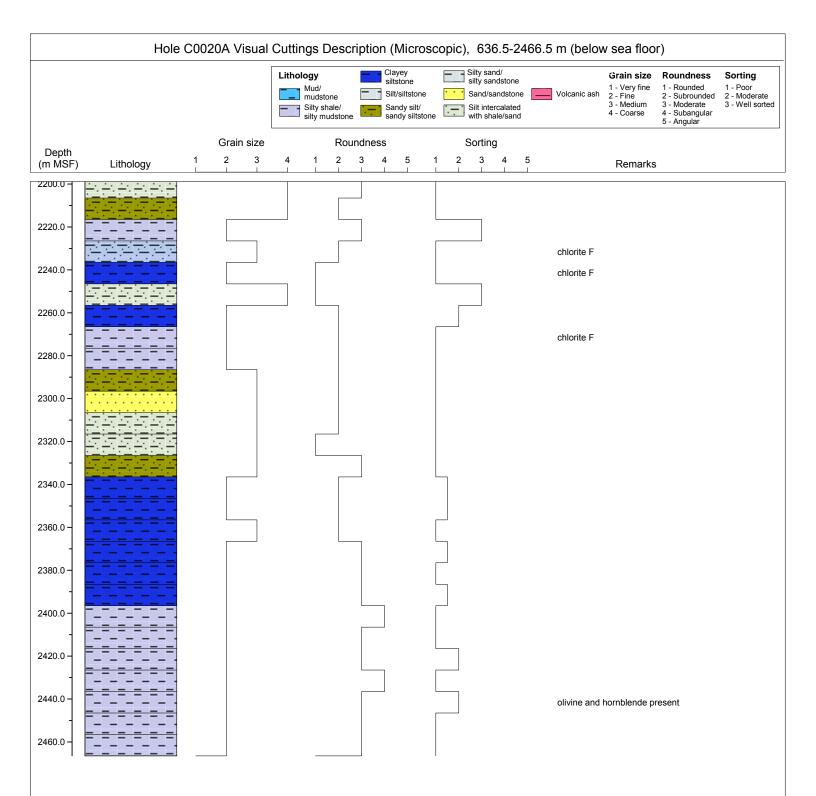
		Clay:Silt:Sand (%) Clay:Silt													
22000010%22000010%220000002200000010%3110%3110%3110%3110%321010%321010%33110%3110%33110%3110%33110%3110%33110%3110%33110%3110%34110%341 <th>th 1SF)</th> <th>(%)</th> <th>C</th> <th>Cohesion W</th> <th>/ood/Lignite</th> <th></th> <th>Clay       - Unconsolidated       1 - Low       0 - Not observed            <ul> <li>Unconsolidated</li> <li>2 - Medium</li> <li>1 - Rare</li> <li>Silt</li> <li>Semiconsolidated</li> <li>3 - High</li> <li>2 - Few</li> <li>3 - Common</li> </ul> <ul> <li>Common</li> <li>A - Abundant</li> </ul></th>	th 1SF)	(%)	C	Cohesion W	/ood/Lignite		Clay       - Unconsolidated       1 - Low       0 - Not observed <ul> <li>Unconsolidated</li> <li>2 - Medium</li> <li>1 - Rare</li> <li>Silt</li> <li>Semiconsolidated</li> <li>3 - High</li> <li>2 - Few</li> <li>3 - Common</li> </ul> <ul> <li>Common</li> <li>A - Abundant</li> </ul>								
2200       0.1	Dep (m N	00.0       0													
2220.0       0 <td>2200.0 -</td> <td colspan="12">2200.0       0       10Y3/1       olive black silty clay, shaly, volcanic as olive black silty c</td>	2200.0 -	2200.0       0       10Y3/1       olive black silty clay, shaly, volcanic as olive black silty c													
2400       0	-		0			10Y3/1	olive black silty clay, shaly, volcanic ash few								
2240.0       0       10'32       oive black sity day, shaty, volcanic ash few         2260.0       0       10'31       sity day with fine sand, few shell fragments         2280.0       0       10'31       sity day with fine sand, few shell fragments         2280.0       0       10'31       sity day with fine sand, few shell fragments         2280.0       0       10'31       sity day with fine sand, about a fingments         2280.0       0       0       10'31       sity day with fine sand, about a fingments         2280.0       0       0       10'31       same as 351, but palagonite few-common- slow fingments         2380.0       0       0       7.5'32 or 10'31       same as 351, but palagonite few-common, volcanic ash common about fingit fingments         2380.0       0       0       7.5'32 or 10'31       same as 353, but shells rare-barren, volcanic ash common about fingithe few, shells rare-barren, volcanic ash common about fingithe few, shells rare-barren, volcanic ash common about fingithe few, shells rare-barren, volcanic ash common as above, lightle few, shells rare-barren, volcanic ash common as a bove, lightle few, shells rare-barren, volcanic ash common about fingithe few, shells rare-barren, volcanic ash common about fingithe few, shells rare-barren, volcanic ash common more as above, lightle few, shells rare-barren, volcanic ash common more as above, lightle few, shells rare-barren, volcanic ash common more as above, lightle few, shells rare-barren, volcanic ash common more as above, lightle	2220.0 -		•			10Y3/1	olive black silty clay, shaly, volcanic ash few								
2260.0       10'0'1       silly clay with fine sand, few shells fragments         2260.0       0       10'2'1       silly clay with fine sand, few shell fragments         2280.0       0       10'2'1       silly clay with fine sand, other shell fragments         2280.0       0       10'2'1       silly clay with fine sand, common shell fragments         2280.0       0       10'2'1       silly clay with fine sand, common shell fragments         2280.0       0       10'2'1       silly clay with fine sand, common shell fragments         2300.0       0       0       7.5'32 or 10'3'1       common-slow         2300.0       0       7.5'32 or 10'3'1       same as 351, but palagonite faw-common, volcanic ash common-slowdant, lighte common, shell fragments         2300.0       0       7.5'32 or 10'3'1       same as 351, but palagonite faw-common, volcanic ash common-slowdant, lighte few, shells rare-barren, volcanic ash common-slowdant, lighte few, shells rare-barren, volcanic ash common         2300.0       0       7.5'32 or 10'3'1       same as above, lighte few, shells rare-barren, volcanic ash common         230.0       0       7.5'32 or 10'3'1       same as above, lighte few, shells rare-barren, volcanic ash common         230.0       0       7.5'32 or 10'3'1       same as above, lighte few, shells rare-barren, volcanic ash common         230.0       0 <td>-</td> <td></td> <td>•</td> <td></td> <td></td> <td>10Y3/1</td> <td>olive black silty clay, shaly, volcanic ash few</td>	-		•			10Y3/1	olive black silty clay, shaly, volcanic ash few								
2260.0       10Y3/1       sity day with fine sand         2280.0       0       10Y3/1       sity day with fine sand         2280.0       0       10Y3/1       sity day with fine sand         2280.0       0       10Y3/1       sity day with fine sand         2300.0       0       75/32 or 10Y31       Sity day with fine sand         2300.0       0       75/32 or 10Y31       same as 352, but palagonite few-common, volcanic sah common-abundani. lighite common, shouring and same as 352, but palagonite few-common, volcanic sah common-abundani. lighite common, shouring and same as 352, but palagonite few-common, volcanic sah common-abundani. lighite common, shouring and same as 352, but palagonite few-common, volcanic sah common-abundani. lighite common, shouring and same as 352, but palagonite few-common, volcanic ash common-abundani. lighite few, shells rare-barren, volcanic ash common-abundani. lighite few, shells rare-barren, volcanic ash common abundani. lighite day with fine sand, abundani abundani. ash common abundani. lighite day with fine sand, abundani abundani. ash common abundani. lighite day with fine sand. abundani. abundani. ash common abundani. lighite day with fine sand. abundani authigenic carbonates	2240.0 -		•			10Y3/2	olive black silty clay, shaly, volcanic ash few								
2280.0       0       100 cm	-		•			10Y3/1	silty clay with fine sand, few shell fragments								
2280.0       Fine sand with sity car, controlate fragments common shell fragments         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2300.0       0         2320.0       0         0       0         2320.0       0         0       0         2320.0       0         0       0         2320.0       0         0       0         2340.0       0         0       0         2360.0       0         0       0         2380.0       0         0       0         2380.0       0         0       0         2380.0       0         0       0         2380.0       0         0       0         10       0         2380.0       0         0       0         0       0	2260.0 -		•			10Y3/1	silty clay with fine sand								
2300.0       0       1073/1 b 10741       reaction with HCI producing yellow fluid- likely siderite, common shell fragments.         2300.0       0       0       75932 or 1073/1       Sime as 351, but palagonite few-common, volcanic ash common abundant, lighte common, shells rare-law         2300.0       0       0       75932 or 1073/1       same as 351, but palagonite few-common, volcanic ash common abundant, lighte common, shells rare-barren, same as 352, but palagonite few-common, volcanic ash common         2320.0       0       0       75932 or 1073/1       same as 353, but shells rare-barren, volcanic ash common         2340.0       0       0       75932 or 1073/1       same as 353, but shells rare-barren, volcanic ash common         2340.0       0       0       75932 or 1073/1       same as abc, lightle few, shells rare-barren, volcanic ash common         2380.0       0       0       75932 or 1073/1       same as abc, lightle few, shells rare-barren, volcanic ash common         2380.0       0       0       75932 or 1073/1	-		0			10Y3/1	silty clay with fine sand, common shell fragments								
2300.0       7.5Y32 or 10/3/1       Olive black silty clay, shally, palagonite few-common, volcanic ash common-abundant, lightle common, shells rare-few         2300.0       0       7.5Y32 or 10/3/1       same as 351, but palagonite few-common, volcanic ash common-abundant, lightle common, shells rare-few         2320.0       0       7.5Y32 or 10/3/1       same as 353, but shells rare-barren,         2320.0       0       7.5Y32 or 10/3/1       same as 353, but shells rare-barren, volcanic ash common         2340.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10/3/1       same as above, li	2280.0 -		0			10Y3/1 to 10Y4/1									
230.0       7.5Y32 or 10Y3/1       same as 351, but palagonite rare         2320.0       0       7.5Y32 or 10Y3/1       same as 352, but palagonite barren,         2320.0       0       7.5Y32 or 10Y3/1       same as 353, but shells rare-barren,         2340.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1	-		•			7.5Y3/2 or 10Y3/1	Olive black silty clay, shaly, palagonite few-common, volcanic ash								
2320.0       7.5Y3/2 or 10Y3/1       same as 353, but shells rare-barren, volcanic ash common         2340.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2420.0       0       7.5Y3/2       sitly clay with fine sand, abundant authigenic carbonates         2420.0       0       7.5Y3/2       sitly clay with fine sand, abundant authigenic carbonates, few pumice <td>2300.0 -</td> <td></td> <td>•</td> <td></td> <td></td> <td>7.5Y3/2 or 10Y3/1</td> <td></td>	2300.0 -		•			7.5Y3/2 or 10Y3/1									
2340.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y32 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       silty clay with fine sand, above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates         2400.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2400.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pu	-		•			7.5Y3/2 or 10Y3/1	same as 352, but palagonite barren,								
2340.0       0       7.5Y3/2 or 10Y3/1       common         2360.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       sitly clay with fine sand, common authigenic carbonates         2400.0       0       7.5Y3/2       sitly clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       sitly clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       sitly clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0	2320.0 -		•			7.5Y3/2 or 10Y3/1	same as 353, but shells rare-barren,								
2340.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2360.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2400.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice	-		0			7.5Y3/2 or 10Y3/1									
2360.0       - <td>2340.0 -</td> <td></td> <td>0</td> <td></td> <td></td> <td>7.5Y3/2 or 10Y3/1</td> <td>same as above, lignite few, shells rare-barren, volcanic ash</td>	2340.0 -		0			7.5Y3/2 or 10Y3/1	same as above, lignite few, shells rare-barren, volcanic ash								
2360.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2420.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       silty clay wi	-		0			7.5Y3/2 or 10Y3/1									
2380.0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2380.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2420.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice         2460.0       7.5Y3/2       silty clay with fine	2360.0 -		0			7.5Y3/2 or 10Y3/1	same as above, lignite few, shells rare-barren, volcanic ash								
2380.0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice         2460.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice	-		0			7.5Y3/2 or 10Y3/1	same as above, lignite few, shells rare-barren, volcanic ash								
2400.0       7.5Y3/2 or 10Y3/1       same as above, lignite few, shells rare-barren, volcanic ash common         2400.0       0       7.5Y3/2 or 10Y3/1       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates, silty clay with fine sand, abundant authigenic carbonates, few pumice         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonates, rare pumice	2380.0 -		•			7.5Y3/2 or 10Y3/1	same as above, lignite few, shells rare-barren, volcanic ash								
2400.0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, common authigenic carbonates         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice         2460.0       0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonates, rare pumice	-		•			7.5Y3/2 or 10Y3/1	same as above, lignite few, shells rare-barren, volcanic ash								
2420.0       0       7.513/2       carbonates, rare pumice         2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2440.0       0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice         2460.0       7.5Y3/2       silty clay with fine sand, abundant lignite and authigenic carbonates, rare pumice, lithic fragments and pumice	2400.0 -		•			7.5Y3/2									
2420.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, few pumice         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates         2440.0       0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2460.0       0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty cl	-		•			7.5Y3/2									
2440.0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates         2440.0       7.5Y3/2       silty clay with fine sand, abundant authigenic carbonates, rare pumice, lithic fragments and pumice         2460.0       7.5Y3/2       clayey silt with fine sand, abundant lignite and authigenic carbonate, rare silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant li	2420.0 -		•			7.5Y3/2	silty clay with fine sand, abundant authigenic carbonates, few								
2460.0     7.5Y3/2     silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, a	-		•			7.5Y3/2									
2460.0 - 7.5Y3/2 clayey silt with fine sand, abundant lignite and authigenic carbonate, silty clay with fine sand, abundant lignite and authigenic carbonate,	2440.0 -		0			7.5Y3/2									
	-		•			7.5Y3/2									
	2460.0 -		•			7.5Y3/2									

	Hole	C002	20A V	ïsual	Cuttir	ngs D	esc	riptio	n (I	Vicro	sco	pic)	, 63	6.5-2	466.5	5 m (belov	v sea floo	r)	
						ogy Mud/ mudsto Silty sh silty mu	ale/		Silt/ Sar	yey stone /siltstone ndy silt/ ndy siltsto			Sand/s Silt inte	nd/ ndstone andston ercalated ale/sand	e 📃	Volcanic ash	<b>Grain size</b> 1 - Very fine 2 - Fine 3 - Medium 4 - Coarse	Roundness 1 - Rounded 2 - Subrounded 3 - Moderate 4 - Subangular 5 - Angular	Sorting 1 - Poor 2 - Moderate 3 - Well sorted
Depth			Grair	ı size			Rou	ndnes	s				Sortin	g					
(m MSF)	Lithology	1	2	3	4	1 I	2	3	4	5	1	2	3	4	5		Remarks	6	
640.0 -																Some silt/sa	and volcanic g	glass	
-																some volca	nic glass		
660.0 -																some lithic	grain		
-																Some silt a	nd lithic grain		
680.0 -																Some silt, li	ithic grains an	nd volcanic glass	
-																A lot of vold	anic glass		
700.0 -																silt with fora	aminifera and	volcanic glass	
-																Volcanic gla	ass		
720.0 -																Volcanic gla	ass		
-																Volcanic gla	ass		
740.0 -																Volcanic gla	ass		
-									_							Volcanic gla	ass		
760.0 -											_					Volcanic gla	ass		
-																Volcanic gla	ass		
780.0 -																Volcanic gla	ass		
																Volcanic gla	ass		
800.0 -																Volcanic gla	ass		
1																clay sulphid	les		
820.0 -																Volcanic gla	ass		
-									7							Volcanic gla	ass		
840.0 -										_		Г				-		iceous fragment	s
-																Volcanic gla			
860.0 -																	ass and lithic		
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#### Smear slides Site C0020 (core)

Hole ID Core	Tune	Postion I	ntonual From (mbsf)	To (mbsf)	Lithology	Key component Grain size Grain size #	Roundness	Roundness # Sorting	Sorting #	Remarks Clay Quartz	Feldspar Lithic Mica	Glauconite	Pvroxene Fe-Mg silicate Volcanic glass	Pumice Iron sulfide Palagonite	Calcite	Aragonite Dolomite Siderite	Barite Organic Wood/lignite	Diatoms Sponge Radiolaria Silico	Foraminifera Shell Nannofossii
C0020A 1	R	1	14 1276.64	TO (mbst)	medium to fine sandstone	medium 3	subrounded	Roundness #         Sorting           2         moderate	Sorting #	Remarks         Clay         Quartz           F         A	F F not observed	F	not observed not observed F	not observed not observed not observed	not observed	not observed C not observed	Barite Organic material Wood/lignite not observed not observed not observed	spicules nagenates	not observed not observed not observed
C0020A 1 C0020A 1	R	1	83 1277.33 100 1277.5		fine sandstone medium sandstone	fine 2 medium 3	subrounded subrounded	2 moderate 2 moderate	2	From organic rich horizon R F	not observed C F R C R	not observed	not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed	not observed C not observed	not observed C not observed	not observed	not observed not observed not observed
C0020A 1 C0020A 1	R	2	107 1277.57 38 1278.15		sandy siltstone medium sandstone	fine 2 medium 3	moderate well rounded	3 moderate 1 moderate	2	From silt lamination alternating with sand C C C Abundant lithic fragments, few glauconite C D	not observed not observed F C A F	not observed F	not observed not observed C not observed R R	not observed	not observed	not observed F not observed not observed not observed not observed	not observed not observed not observed not observed F not observed	not observed not observed not observed not observed R not observed not observed not observed	
C0020A 1 C0020A 1	R	2	50 1278.27 60 1278.37 7 1278.65	_	dolomite concretion medium to fine sandstone	n.a. dolomitic medium 3	n.a. well rounded	n.a. 1 moderate	2	Dolomite concretion not observed R C C C	not observed F not observed not observed F F	C	not observed R R not observed not observed R		not observed	not observed D not observed not observed C-A not observed	not observed R not observed not observed R not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 1 C0020A 1 C0020A 2	R	CC	7.5 1278.655 127 1287.27	_	silty fine sandstone silty fine sandstone sandy siltstone	fine 2 fine 2 fine 2	moderate moderate subrounded	3 moderate 3 moderate to poorly sorted 2 moderate to poorly sorted	1.5	From sand lamination alternating with sint F C From sint lamination alternating with sand C C Inct observed C Inct observed C	F         not observed         not observed           not observed         F         F           not observed         C         R	not observed		not observed not observed not observed not observed not observed not observed	not observed not observed	not observed F not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 2 C0020A 2	R	1 2	137.5 1287.375 20 1287.6		silty sandstone dolomite band	fine 2 n.a.	moderate n.a.	3 moderate n.a.	2	C A F F	F C R	not observed not observed	not observed not observed C not observed not observed C	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed F not observed not observed D not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed
C0020A 2	R	2	69 1288.09 81.5 1288.215		fine to medium sandstone fine to medium sandstone	medium 3 medium 3	subrounded moderate	2 moderate to well sorted 3 moderate to poorly sorted	2.5 1.5	a lot of organic material C A	F C R F C F	not observed R	not observed not observed F not observed not observed R	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed R not observed not observed C not observed	not observed not observed not observed C R	not observed not observed not observed not observed R not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 2	R	2	94.7 1288.347 15 1288.94 30 1289.09		silty claystone medium sandstone	very fine 1 medium 3	moderate moderate	3 well sorted 3 moderate	3	D F C A	F R R C C F	not observed R	not observed not observed R not observed F		not observed not observed	not observed not observed not observed not observed F not observed		not observed	not observed not observed not observed not observed not observed not observed
C0020A 2	R	4	30 1289.09 1.5 1289.615 4.5 1289.645		medium to fine dolomitic sandstone silty fine sandstone fine sandstone	nedium 3 fine 2 glauconitic dolomitic fine 2	subrounded moderate moderate	2 moderate 3 well sorted	3	Abundant dolomite grains, rare nannofossil C A volcaniclastic and organic rich F A	F C R R C F		not observed not observed R not observed not observed C	not observed F not observed not observed not observed not observed not observed not observed not observed	not observed	not observed not observed not observed	not observed A not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed
			38 1289.98 31 1370.31		dolomite concretion? siltstone	na very fine 1	na moderate	3 poorly sorted na 3 moderate to poorly sorted		dominantly glauconite with common volcanic glass C C C abundant aragonite C A C C C	not observed C-A not observed not observed not observed not observed	not observed not observed	not observed not observed R not observed not observed R	not observed not observed not observed not observed not observed c not observed	not observed	not observed F-A not observed	not observed F not observed not observed F not observed not observed not observed not observed	not observed F not observed not observed A R F not observed	not observed not observed not observed
C0020A 3	R	2	19.5 1371.435 27 1371.51		diatom bearing clayey silt diatom bearing clayey silt	diatom bearing very fine 1 diatom bearing very fine 1	moderate to subangular moderate to subangular	3.5 poorly sorted 3.5 poorly sorted		abundant diatom A A A common lithic grain, abundant diatom A C	R R F R C R	not observed	not observed not observed F not observed not observed R	not observed C not observed not observed F not observed	not observed	not observed not observed not observed	not observed not observed not observed not observed not observed not observed	A F R not observed	not observed not observed not observed not observed not observed
C0020A 3 C0020A 3	R R	3 4	45 1372.44 7 1372.83		silty fine sandstone clayey silt	fine 2 very fine 1	well rounded moderate to subangular	1 moderate to poorly sorted 3.5 moderate		Small spicules A A A abundant diatom A C	not observed C F C F F		not observed not observed C not observed not observed F	not observed not observed not observed C not observed	not observed	not observed not observed not observed	not observed F R not observed not observed		not observed not observed not observed C not observed
C0020A 3 C0020A 4	R	4	93 1373.69 140 1376.4		clayey silt silty clay	very fine 1 very fine 1	angular moderate to subangular	5 moderate to poorly sorted 3.5 moderate to poorly sorted		abundant diatom A A common diatom and dolomite grains A A	F F F C C not observed		not observed not observed C not observed not observed C	not observed F not observed		not observed not observed not observed not observed C not observed	not observed not observed not observed	A not observed R not observed C R not observed not observed	
C0020A 4 C0020A 4 C0020A 4				_	sandy siltstone sandy siltstone silty fine sandstone	fine 2 fine 2 fine 2	subangular moderate to subangular moderate	4 poorly sorted     3.5 moderate     3 moderate to poorly sorted	2	A A no fossil C A	C not observed R C F R	not observed	not observed not observed F not observed not observed F not observed not observed F	not observed not observed not observed not observed F not observed not observed R not observed	not observed	not observed not observed not observed	not observed not observed not observed	F not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed
C0020A 4 C0020A 4	R	3	45 1377.895 59 1378.035	-	silty clay silty sandstone	very fine 1 fine 2	moderate to subangular subangular	3 moderate to poorly sorted 3.5 moderate 4 poorly sorted	2	C C no fossil common lithic fragment C A		not observed	not observed Olivine F C not observed not observed C	not observed C not observed		not observed C not observed	not observed F not observed	F not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed
C0020A 4	R	4	4 1378.255		sandy siltstone silty clay	fine 2 dolomitic very fine 1	subangular subangular	4 moderate to poorly sorted 4 moderate	1.5 2	common fosil and lithic grain C A C C	C C C not observed R R		not observed not observed C		not observed not observed	not observed not observed not observed not observed D not observed	not observed not observed not observed not observed not observed not observed	C F not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 4 C0020A 4 C0020A 4	R				clayey silt sandy siltstone	aragonitic very fine 1 fine 2	subangular moderate to subangular	4 moderate 3.5 poorly sorted	2	abundant lithic grain C C		not observed	not observed not observed C not observed not observed C	not observed F not observed	not observed not observed	D not observed not observed not observed not observed		F F not observed not observed not observed rot observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 5 C0020A 5	R	1	1 1490.01	1490.03	clayey siltstone silty claystone	dolomitic very fine 1 very fine 1	angular moderate to subangular	5 moderate 3.5 moderate	2		not observed C not observed not observed C not observed	R	not observed not observed C	not observed not observed not observed	not observed	not observed C not observed not observed F not observed	not observed F not observed not observed C not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 5 C0020A 5	R	1	83         1490.83           101         1491.01           14         1491.99	1490.84 1491.03 1492	clayey fine sandstone medium sandstone medium sandstone	fine 2 medium 3 medium 3	well rounded well rounded angular	1 moderate     1 well sorted     5 moderate	3		F         C         F           not observed         C         F           not observed         C         F		not observed not observed F not observed not observed A F not observed A	not observed not observed not observed not observed not observed not observed not observed not observed	not observed	not observed not observed	not observed R not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed
C0020A 6 C0020A 6	R	1 3	113.5 1496.135 15 1497.315	1497.915	clayey fine sandstone medium to coarse sandstone	fine 2 medium 3	well rounded moderate	1 poorly sorted 3 poorly sorted	1	F A	not observed C F not observed C not observed	not observed not observed	not observed not observed A R not observed A	not observed F not observed not observed not observed	not observed not observed	not observed R not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed	not observed not observed not observed not observed not observed not observed
C0020A 6 C0020A 6	R	3	15 1497.315 124 1498.405	1497.915	clayey silt silt to fine sand	very fine 1 fine 2	angular angular	5 well sorted 5 poorly sorted	3		not observed C not observed	not observed not observed			not observed	not observed not observed		not observed not observed not observed not observed	
C0020A 6	R	4	16 1498.735 30 1498.875		silty sand silty clay	fine 2 very fine 1	well rounded well rounded	1 moderate     1 poorly sorted     3.5 moderate	2	F         C           clay dominant         D         F           A         C         C	not observed C F not observed F not observed F C C		not observed not observed	not observed not observed not observed C not observed C not observed not observed		not observed not observed not observed	not observed not observed not observed	R R not observed not observed not observed not observed not observed C R R R not observed	
C0020A 7 C0020A 7 C0020A 7	R	1	19         1599.19           25         1599.25           43         1599.43	1599.53	clayey siltstone siltstone clayey siltstone	very fine         1           fine         2           very fine         1	moderate to subangular moderate to subangular moderate to subangular	3.5 moderate     3.5 moderate to well sorted     3.5 moderate	2.5	A C A F A C	F C R	F	not observed not observed C not observed not observed F not observed not observed C	not observed C R not observed R not observed not observed F not observed			not observed F not observed	F F F F not observed	not observed
	R	1	96.5 1599.965	1355.33	clayey sitistone clayey sitistone	very fine 1 very fine 1	moderate to subangular moderate to subangular moderate to subangular	3.5 moderate to poorly sorted 3.5 moderate to well sorted	1.5	A A A A	F A F	not observed	not observed not observed C not observed not observed F	not observed F not observed not observed F not observed F not observed F	not observed	not observed R not observed		F R not observed not observed	not observed not observed not observed
C0020A 8	L	1	8.5 1604.085		silty clay clayey silt	very fine 1 very fine 1	moderate moderate	3 well sorted 3 poorly sorted	3	pollen rare C F	not observed C not observed not observed A R		not observed not observed A not observed not observed F		not observed	not observed not observed not observed		not observed not observed not observed not observed R not observed not observed	
C0020A 8 C0020A 8 C0020A 8	L	2	47 1604.67	_	silty clay clay	very fine 1 organic-rich very fine 1	moderate	3 moderate to well sorted 5 moderate	2.5	A F mostly large organic/ragments A R	not observed A not observed not observed not observed not observed	not observed not observed		not observed not observed not observed not observed not observed not observed		not observed not observed not observed not observed not observed		not observed F not observed not observed not observed not observed not observed not observed	not observed R not observed not observed not observed not observed
C0020A 8 C0020A 8	L	2	81 1605.01	_	silty clay clay	very fine 1 dolomitic very fine 1 fine 2	angular subrounded to well rounded	5 poorly sorted     1.5 well sorted     4 well sorted	3	A F A-D R P	not observed not observed R not observed not observed			not observed not observed not observed not observed not observed not observed not observed not observed not observed		not observed not observed not observed not observed not observed not observed			not observed not observed not observed not observed not observed not observed not observed not observed
C0020A 8 C0020A 8 C0020A 8	L	3 9	33.5 1605.495 19-50 1605.35 90-100 1606.06 05 1606.11	1605.66 1606.16	fine sandstone silty clay clayey silt	very fine 1 very fine 1	subangular subangular subrounded	4 well sorted     4 moderate     2 moderate to poorly sorted	2	D D C C C C C C C C C C C C C C C C C C	F C R not observed A not observed		not observed not observed C	not observed not observed not observed			not observed F not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed R not observed not observed	
C0020A 8 C0020A 8	L	3	95 1606.11 WR WR		silty clay sandy siltstone	very fine 1 fine 2	moderate to subangular moderate to subangular	3.5 moderate to well sorted 3.5 moderate to poorly sorted	2.5 1.5	Few dolomite and organic material A C common organic material, rare fossils C A	F C C	not observed R	not observed not observed F not observed not observed C	not observed F not observed not observed R not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed not observed C not observed	not observed not observed not observed not observed R not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 8 C0020A 8	L	5	1606.66 20-35 1607.36	1607.16 1607.51	clayey silt silty clay	very fine 1 fine 2	subangular subrounded	4 poorly sorted 2 poorly sorted	1	A A A F	F C F not observed C	not observed not observed	not observed not observed A not observed not observed C	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed	not observed F not observed not observed R not observed	not observed	not observed not observed not observed not observed not observed not observed
C0020A 8 C0020A 8 C0020A 8	L	5	51-64 1606.67 78 1606.94 90-93 1607.06	1606.8	silty clay silty sand silty clay	very fine         1           fine         2           fine         2	moderate to subangular sub rounded to well rounded moderate	3.5 moderate to well sorted 1.5 poorly sorted 3 poorly sorted	2.5	few dolomite A C fresh volcanic material (pumice), few homblende R A few homblende F A	F C F not observed not observed F not observed not observed not observed	R R	C-F not observed C C-F not observed not observed	not observed not observed not observed not observed not observed F	not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed	not observed F not observed not observed R not observed not observed not observed not observed	R not observed not observed not observed not observed R not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 8 C0020A 8	L	5 5	93-100 1607.09	1607.16	silty clay silty sandstone	very fine 1 fine 2	well rounded angular	1 moderate 5 moderate	2	rare pollen and chlorite A F A A	R C not observed not observed A not observed	F	not observed not observed F not observed not observed F	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed F not observed F not observed F	R not observed not observed not observed F R not observed not observed not observed	not observed not observed not observed not observed R not observed
C0020A 8	L	6	29         1608.45           50         1608.66           20         1610.37		fine to medium sand medium sand	medium 3 medium 3	subrounded subrounded	2 poorly sorted 2 poorly sorted	1	not observed A C A	not observed C-A F not observed not observed not observed	not observed not observed	R not observed C not observed R	not observed not observed not observed F not observed	not observed not observed	not observed not observed not observed	not observed C F not observed R R	not observed	not observed not observed not observed not observed not observed not observed
C0020A 8	L	8	65.5 1610.825		sandy siltstone claystone	fine 2 very fine 1	moderate to subangular moderate to subangular	3.5 moderate to poorly sorted 3.5 moderate to poorly sorted	1.5	rare dolomite C C C abundant volcanic glass A C	F C C not observed R	not observed not observed	not observed not observed C not observed not observed A	not observed F not observed		not observed not observed not observed not observed not observed not observed	not observed C	F not observed not observed not observed C not observed not observed not observed	not observed not observed not observed
			0-16 1611.17 93.5 1612.105 5 1612.22	1611.33	sitstone clayey sitstone claystone	very fine         1           very fine         1           very fine         1	subangular subangular moderate to subangular	4 poorly sorted 4 moderate to poorly sorted 3.5 well sorted	1	F A-D abundant volcanic glass A A A	not observed F not observed not observed C F opt observed E E	not observed not observed	not observed not observed not observed not observed not observed A	not observed R not observed not observed C not observed not observed not observed	not observed not observed	not observed not observed not observed not observed R not observed not observed not observed not observed	not observed C not observed		not observed R not observed not observed not observed not observed not observed not observed
C0020A 8	L	CC	42 1612.62 40.5 1614.105	-	claystone clayey sittstone	very fine 1 very fine 1	moderate to subangular moderate to subangular	3.5 well sorted 3.5 poorly sorted	3	C C C A C	not observed R not observed not observed F R	not observed R	not observed not observed R not observed not observed F			not observed C not observed	not observed not observed not observed not observed F not observed	F not observed not observed not observed	
C0020A 8 C0020A 9	L R	CC 1	55         1614.25           75         1627.25           116         1627.66		clayey sitstone clayey sitstone	very fine 1 very fine 1	moderate to subangular subangular	3.5 moderate to well sorted 4 moderate to well sorted	2.5 2.5	A C A C	R not observed not observed not observed A C	F	not observed not observed C F not observed A	not observed C not observed not observed not observed					not observed not observed not observed not observed not observed not observed
C0020A 9	R	1	128 1627.78		clayey siltstone claystone	very fine 1 very fine 1	angular subrounded	5 moderate to well sorted 2 moderate to well sorted	2.5	Large volcanic grains A C A F	not observed A not observed not observed C R	R not observed	not observed not observed A not observed not observed A		not observed	not observed R not observed not observed not observed not observed not observed not observed not observed	not observed F F	not observed not observed not observed not observed R not observed not observed not observed not observed not observed	not observed
C0020A 9 C0020A 9 C0020A 9	R	3	135         1627.85           61         1628.3           54         1628.915		claystone silty clay silty clay	very fine         1           very fine         1           very fine         1	angular subangular subrounded	5 well sorted 4 well sorted 2 moderately sorted	3	A F	not observed F not observed not observed C not observed not observed C not observed	R R	not observed not observed F not observed not observed F not observed not observed C	not observed not observed not observed	not observed not observed not observed	not observed not observed not observed	not observed not observed R not observed not observed R not observed R C	not observed not observed not observed not observed not observed R not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 9 C0020A 9	R	4 4	83 1629.205 112 1629.495		silty clay medium to fine sand	very fine 1 medium 3	subrounded angular	2 well sorted 5 poorly sorted	3	D F	not observed F not observed not observed C not observed	F	not observed not observed F	not observed R not observed not observed not observed not observed	not observed	not observed not observed not observed	not observed not observed R	not observed not observed not observed	not observed not observed not observed not observed not observed not observed
C0020A 10 C0020A 10	R	1	5.5 1629.555 10 1629.6		sandy siltstone claye siltstone	fine 2 very fine 1	subrounded moderate to subangular	2 moderate to poorly sorted 3.5 poorly sorted	1	thin layer from interval 5 - 6cm, few olivine C A	F F F	R	not observed not observed A	not observed not observed not observed	not observed	not observed not observed not observed	not observed C not observed	not observed not observed not observed not observed	not observed not observed not observed
C0020A 10	R	1	26 1629.76 37.5 1629.875	_	silty claystone silty sandstone	very fine 1 fine 2	moderate to subangular moderate to subangular	3.5 well sorted 3.5 poorly sorted	3	Interval 15-33cm C F thin layer 37-38.5, abundant olivine R A	not observed not observed not observed not observed A F	R	not observed not observed not observed not observed not observed F	not observed F not observed not observed R not observed	not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed not observed C not observed	R R not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed
C0020A 10	R	2	131.5 1630.815 10.5 1631.015 13 1631.04	_	claystone siltstone clayey siltstone	very fine         1           very fine         1           very fine         1	subrounded subangular moderate to subangular	well sorted     well sorted     4     moderate to well sorted     3.5     moderate to well sorted			not observed F F	R	not observed not observed not observed	not observed not observed not observed	not observed	not observed R not observed	not observed not observed not observed	F not observed R not observed	not observed not observed not observed
C0020A 10	R	2	13         1631.04           18         1631.09           38.5         1631.295		sandy siltstone silty sandstone	fine 2 fine 2	moderate to subangular moderate to subangular	3.5 moderate to poorly sorted 3.5 poorly sorted	1.5	tbin layer from 14-15.0, tew dwine C F C F C F	not observed A R F A F	R	not observed Olivine F A	not observed not observed not observed not observed not observed not observed	not observed	not observed not observed not observed	not observed C not observed not observed C not observed not observed C not observed	R not observed not observed R F not observed	not observed not observed not observed not observed not observed not observed
C0020A 10 C0020A 10	R	2	53 1631.44 86 1631.77		siltstone claye siltstone	fine 2 very fine 1	angular moderate to subangular	5 poorly sorted 3.5 well sorted	3	Homblende, also present	R C F	F	not observed not observed C not observed Olivine R C	not observed R not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F C not observed R not observed	not observed         not observed         not observed           C         F         not observed	not observed not observed not observed not observed not observed
C0020A 10 C0020A 10	R	2	87.5 1631.785 92 1631.83		silty claystone silty sandstone	very fine 1 fine 2	moderate to subangular moderate to subangular	3.5 moderate to poorly sorted 3.5 poorly sorted 3.5 moderate to well sorted	1	minor87-88.5cm C F minor92-95 C C C minor192-95 E E	R         C         R           C         A         F	not observed	not observed not observed F not observed Olivine F A	R not observed not observed	not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed	F R not observed	not observed not observed not observed not observed not observed not observed
C0020A 10	R	2	116         1632.07           124         1632.15           135.5         1632.265		silty claystone silty sandstone siltstone	very fine 1 fine 2 very fine 1	moderate to subangular moderate to subangular moderate to subangular	3.5 moderate to well sorted 3.5 poorly sorted 3.5 moderate to well sorted	2.5	minor 116-117.5cm F F C C C F	C A F F C R	R	not observed Olivine R A not observed not observed F	not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed not observed A not observed	F not observed R not observed R R not observed not observed	not observed not observed not observed
C0020A 10 C0020A 10	R	3	44 1632.76 113 1633.45		clayey siltstone silty claystone	very fine 1 very fine 1	subrounded	2 well sorted 2 well sorted	3	D F some volcanic glass appears weathered D R	not observed A not observed not observed C not observed	not observed not observed	not observed not observed C not observed not observed F	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed	not observed F F not observed not observed C	F R not observed not observed F R not observed not observed	not observed not observed not observed not observed not observed
C0020A 10 C0020A 10	R	3 4	124         1633.56           12         1633.85           87         1634.6		claystone silty claystone	very fine 1 very fine 1	subrounded moderate	2 well sorted 3 well sorted	3	D R	not observed R not observed not observed C not observed	not observed not observed	not observed not observed F not observed not observed F	not observed R not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed	not observed not observed not observed R R	not observed	not observed not observed not observed not observed not observed
C0020A 11	R	2	0-40 1738.88	1739.28	silty sandstone medium sandstone	fine 2 medium 3	well rounded subrounded	well sorted     moderate to well sorted     moderate to well sorted	3	Homblende, also present F F A	not observed not observed not observed not observed A R	F not observed	not observed Olivine R F not observed not observed A	not observed not observed not observed not observed F not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F R not observed C F	not observed         F         not observed         not observed           not observed         not observed         not observed         not observed           R         not observed         not observed         not observed	not observed R (gastropod) not observed not observed not observed not observed
C0020A 11 C0020A 11 C0020A 11	R	2 3	73-94 1739.61 44-46 1739.32 28-29 1739.91 40-48 1740.03 33-132 1740.95	1739.02 1739.34 1739.92	silty claystone silty claystone silty sandstone	very fine         1           very fine         1           fine         2	moderate moderate to subangular moderate to subangular	3 moderate to well sorted 3.5 well sorted 3.5 moderate to poorly sorted	3	chlorite R Hornblende R D F rare pumice C A	not observed C R	not observed	not observed not observed C	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed	not observed not observed not observed	not observed not observed not observed	R         not observed         not observed           not observed         R         not observed         not observed           not observed         not observed         not observed         not observed	not observed not observed not observed
					clayey siltstone samdy siltstone	very fine 1 fine 2	moderate to subangular moderate to subangular	3.5 moderate to well sorted 3.5 poorly sorted			R F R	not observed	not observed Olivine F C	not observed F not observed	not observed	not observed not observed not observed	not observed C F	not observed not observed not observed	not observed not observed not observed
C0020A 11 C0020A 11	R	4	87-88 1741.91 89-90 1741.93 14-15 1742.64 20-21 1742.7 87.89 1744.12	1741.92 1741.94	claystone silty claystone	very fine 1 very fine 1	moderate moderate to subangular	3 well sorted 3.5 well sorted	3	A-D A A F	not observed not observed R not observed F not observed	R not observed	not observed not observed C not observed not observed not observed	not observed R not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed F not observed	not observed F not observed not observed not observed not observed	not observed         not observed         not observed         not observed           not observed         not observed         not observed         not observed           F         not observed         not observed         not observed           not observed         not observed         not observed           not observed         not observed         not observed	not observed not observed not observed not observed not observed
C0020A 11 C0020A 11 C0020A 11	R	5	14-15 1742.64 20-21 1742.7 87-88 1744.10	1742.65 1742.71	sandy siltstone sandy siltstone siltstone	fine         2           fine         2           very fine         1	moderate to subangular moderate to subangular modetate to subangular	3.5 moderate to poorly sorted 3.5 poorly sorted 3.5 moderate to poorly sorted	1.5		C A not observed C A F	not observed	Hot observed Onvine C A	not observed inter observed inter observed	lot observed	not observed introbserved introbserved	not observed not observed not observed	R not observed not observed not observed	not observed R not observed
C0020A 11 C0020A 11	R	6 1 7	06-107 1744.12 06-107 1744.31 72-91 1745.27	1744.13	siltsione silty sandstone silty fine sandstone	fine 2 fine 2	modetate to subangular moderate to subangular	3.5 moderate to poorly sorted 3.5 moderate to poorly sorted moderate to well sorted	1.5	F C	C A R	not observed	not observed Olinive C not observed	F         not observed         not observed           not observed         not observed         not observed           R         C         not observed	not observed	not observed not observed not observed	not observed F not observed not observed not observed F	not observed         not observed         not observed         not observed           not observed         not observed         not observed         not observed           R         R         not observed         not observed	not observed F not observed not observed not observed
C0020A 12	R	1	63-65 1747.63	1747.65	silty claystone silty sandstone	very fine 1 fine 2	angular moderate to subangular	5 moderate to poorly sorted 3.5 poorly sorted	1.5	A F C A	F C not observed C A not observed	not observed not observed	not observed Olivine R C not observed not observed A	not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed F not observed	F R not observed not observed F not observed not observed not observed	not observed F not observed not observed F not observed
C0020A 12 C0020A 12	R	2	0-23 1748.435 31-33 1748.745	1748.665 1748.765	claystone	fine 2 very fine 1	moderate to subangular moderate	3.5 moderate to poorly sorted 3 well sorted	3	C A A A-D F	C A F F F not observed	R not observed	not observed Olivine A C not observed not observed F	not observed not observed not observed F not observed	not observed not observed	not observed R not observed not observed not observed	not observed F not observed not observed C not observed	not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed
C0020A 12 C0020A 12 C0020A 12	R	3	42         1748.855           15         1749.345           109         1750.285		silty claystone clayey siltstone sandy siltstone	very fine 1 very fine 1 fine 2	subangular subangular subangular	5 moderate to well sorted 5 moderate to well sorted 5 moderate to well sorted	2.5	A F	C         not observed         R           F         C         not observed           C         C         F	not observed not observed	not observed Olivine R C not observed not observed C not observed Olivine C C	not observed not observed not observed R not observed R not observed R	not observed	not observed F not observed not observed not observed not observed not observed not observed not observed	not observed F not observed not observed F not observed	F         R         not observed         not observed           F         R         not observed         not observed           F         F         not observed         not observed	not observed not observed not observed not observed not observed not observed
C0020A 12	R	3	126 1750.455		claystone sandy siltstone	very fine 1 fine 2	subangular subangular subangular to angular	5 moderate to well sorted 5 moderate to well sorted 4.5 poorly sorted		minor from mudclast A-D F	F C F not observed A R	not observed	not observed not observed C not observed Olivine C C	R not observed not observed not observed not observed	not observed	not observed R not observed not observed not observed	not observed C not observed not observed not observed F	F not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed
C0020A 12	R	5 9	40 1751 73-92 1751.33 99-108 1753	1753.09	sandy siltstone clayey siltstone	fine 2 very fine 1	subrounded	2 moderate 2 poorly sorted	2	A C A C	not observed C not observed not observed F R	not observed not observed	not observed Olivine R C not observed Olivine F C	R not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed not observed F not observed	not observed         not observed         not observed           not observed         not observed         not observed           not observed         not observed         not observed           not observed         R         not observed         not observed	not observed not observed not observed F not observed
C0020A 12	R	6	/7-11 1753.5 12-14 1753.55	1753.57	silty claystone	very fine 1 very fine 1 very fine 1	subrounded subangular to angular	well sorted     4.5     moderate to well sorted     2.5	3 2.5 2.5	A not observed	not observed C not observed	R	not observed Olivine R C	not observed not observed not observed	not observed	not observed not observed not observed	not observed C not observed	not observed not observed not observed not observed	not observed not observed not observed
C0020A 12	R	6	15-16 1753.58 18-56 1753.61	1753.99	clayey siltstone clayey siltstone	very fine 1 very fine 1	moderate to subangular moderate to subangular	3.5 moderate to well sorted 3.5 moderate to well sorted	2.5	C C A R	not observed not observed not observed	not observed	not observed not observed not observed R	not observed A not observed	not observed	not observed not observed not observed	not observed F not observed F not observed	F not observed not observed not observed not observed not observed not observed not observed	not observed R not observed

#### Smear slides Site C0020 (core continued)

	Hole ID Core Type Section Interval From (mbsf) To (mbsf) Lithology	Key component	Grain size # Roundness Roundness	s # Sorting # Remarks	Clay Quartz Feldspar	Lithic Mica Glauconite	Pyroxene Fe-Mg silicate Volcanic glass	s Pumice Iron sulfide Palagonite	Calcite	Aragonite Dolomite Siderite	Barite Organic Wood/lignite	Diatoms Sponge Radiolaria	Silico flagellates Foraminifera Shell Fragments	Nannofossil
	C0020A 12 R 6 67-71 1754.1 1754.14 sandy siltstone		fine 2 subrounded to rounded 1.5	poorly sorted 1		C not observed not observed	not observed Olivine C F	R not observed not observed	not observed	not observed not observed not observed	not observed C not observed	F not observed not observed	not observed not observed not observed	d not observed
	C0020A         12         R         7         1to65         1754.545         1755.185         sandy siltstone           C0020A         13         R         1         102-104         1757.52         1757.54         siltstone		fine         2         moderate to subangular         3.5           very fine         1         subrounded         2	moderate to poorly sorted 1.5 moderate 2 chlorite R	C A C F C not observed	A F not observed A not observed F	not observed not observed C not observed Olivine F F	not observed F not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed	not observed C not observed not observed not observed R			not observed d not observed
	C0020A         13         R         4         112         1760.475         clayey sandstone           C0020A         13         R         4         120         1760.555         carbonate concretion		fine         2         angular         5           fine         2         angular         5	poorly sorted 1 chlorite R poorly sorted 1		A not observed R	not observed not observed C	not observed not observed not observed		not observed not observed not observed	not observed not observed R	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed d not observed
	C0020A         13         R         7         103         1764.62         silty to fine sand           C0020A         14         R         2         91         1822.32         sandy silt		fine         2         well rounded         1           fine         2         moderate         3	moderate 2 chlorite R blue mineral? moderate 2	F C not observed C A not observed	A not observed not observed A R not observed not observed A R not observed	not observed not observed C not observed R not observed and observed R not observed			not observed A not observed	not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed d not observed
	C0020A         14         R         3         46         1823.28         clay           C0020A         14         R         3         48-49         1823.3         1823.31         clayy silt	organic-rich	very fine         1         moderate         3           very fine         1         moderate         3	moderate to well sorted 2.5 moderate to well sorted 2.5	A R not observed	C not observed not observed C not observed not observed not observed not observed A-D	not observed not observed not observed not observed not observed not observed not observed Olivine C R	R not observed R	not observed	not observed not observed not observed not observed not observed not observed	not observed A-D not observed not observed A F	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	I not observed d not observed
	C0020A         14         R         3         115-116         1823.97         1823.98         silty claystone           C0020A         14         R         4         35-36         1824.19         1824.2         silty sandstone		very fine 1 moderate 3	moderate 2	A C F	F R R C-A not observed not observed	not observed Olivine F C not observed not observed not observed	not observed not observed not observed	not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed not observed F not observed	not observed         not observed         not observed           F         not observed         not observed         not observed           not observed         not observed         not observed         not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
	C0020A 14 R 5 15 1825 silty fine sandstone	clay-rich	fine 2 moderate 3	poorly sorted 1	D         R         not observed           C         not observed         not observed           R         A-D         not observed	not observed         not observed         F           A         R         not observed         F           C-A         not observed         F         F	not observed not observed R R not observed F not observed Olivine A not observed	R not observed	not observed not observed not observed	not observed not observed not observed	not observed F C	not observed not observed not observed not observed R not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
	C0020A 14 R 6 20 1826.005 sand siltstone		fine 2 moderate to subangular 3.5	poorly sorted 1		C R R	not observed Olivine C not observed		not observed not observed not observed	not observed not observed not observed		F not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	d not observed d not observed
N         N        N        N        N        N         N        N         N        N        N        N        N        N       N       N       N	C0020A         14         R         6         47         1826.275         sandy siltstone           C0020A         14         R         6         53         1826.335         clayey siltstone		fine 2 subangular 4 very fine 1	poorly sorted 1		A R R F not observed not observed	not observed Olivine F R not observed Olivine F R	not observed C not observed	not observed	not observed not observed not observed not observed not observed not observed	not observed C C	not observed not observed not observed	not observed not observed not observed	i not observed d not observed
	C0020A         14         R         7         27         1826.735         siltstone           C0020A         14         R         7         84         1827.305         clayey siltstone		very fine 1 moderate to subangular 3.5 very fine 1 moderate to subangular 3.5	moderate to well sorted 2.5 from fine lamination moderate to well sorted 2.5	C A F A A F	C not observed not observed C R R	not observed Olivine F F not observed Olivine F F	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F F not observed F F	not observed not observed not observed not observed not observed not observed and observed P not observed	not observed not observed not observed not observed not observed not observed not observed not observed	i not observed d not observed
N         N        N        N        N        N         N         N         N         N        N        N        N        N        N       N       N </td <td>C0020A         14         R         CC         50         1828.075         silty clay           C0020A         14         R         CC         5.5         1827.63         silty clay</td> <td></td> <td>very fine         1         subangular         4           fine         2         angular         5</td> <td>moderate 2 moderate 2</td> <td>A-D F not observed A-D F-C not observed</td> <td>C not observed F C R F</td> <td>not observed not observed not observed</td> <td>not observed not observed not observed</td> <td>not observed</td> <td>not observed not observed not observed</td> <td>not observed R F-C</td> <td>not observed R not observed</td> <td>not observed not observed not observed not observed not observed not observed not observed not observed not observed</td> <td>J not observed d not observed</td>	C0020A         14         R         CC         50         1828.075         silty clay           C0020A         14         R         CC         5.5         1827.63         silty clay		very fine         1         subangular         4           fine         2         angular         5	moderate 2 moderate 2	A-D F not observed A-D F-C not observed	C not observed F C R F	not observed not observed not observed	not observed not observed not observed	not observed	not observed not observed not observed	not observed R F-C	not observed R not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed d not observed
	C0020A         15         R         5         57         1924.205         silty clay           C0020A         15         R         6         79         1924.845         fine sand	organic-rich	very fine         1         subrounded to subangular         3           fine         2         subrounded to subangular         3	moderately sorted 2 moderately sorted 2	D         R         not observed           D         A         not observed           F         D         R	C F not observed A F not observed	not observed not observed R not observed not observed A not observed not observed C	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed			not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	d not observed d not observed
	C0020A         15         R         7         17.5         1925.64         medium sand           C0020A         15         R         8         44.5         1926.32         silt		medium 3 moderate 3	well sorted 3		C-A         F-C         F           A         F         R           F         not observed         not observed		not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed C not observed	not observed not observed not observed not observed not observed not observed			not observed not observed d not observed
	C0020A 16 R 3 97-98 1931.25 1931.26 sandy claystone		fine         2         moderate         3           fine         2         subangular         4	poorly sorted 1 Rare chlorite	A         A         F           A         C         not observed           C         A         C			F not observed not observed	not observed	not observed C not observed	not observed F R			
	C0020A 16 R 8 29 siltstone		very fine 1 subangular 4	moderate 2	C A F	A R not observed A not observed not observed C-A not observed F	not observed not observed not observed not observed R not observed not observed Olivine C-A C	not observed not observed not observed	not observed	not observed R not observed	not observed C not observed	R not observed not observed not observed not observed not observed R not observed R	not observed not observed not observed not observed not observed not observed R not observed not observed	d not observed
	C0020A         17         R         1         110         1937.1         silt           C0020A         17         R         1         3.5         1936.035         silt		very fine         1         moderate         3           very fine         1         subangular         4	moderately sorted 2 moderately sorted 2	C A F C A F		not observed R not observed	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed A not observed not observed A not observed	not observed not observed not observed C not observed	not observed not observed not observed	not observed not observed not observed	d not observed
	C0020A         17         R         3         28         1938.22         slity clay           C0020A         17         R         3         64-66         1938.58         1938.6         slity clay		very fine         1         subrounded         2           very fine         1         subangular         4	poorly sorted 1 poorly sorted 1	D F not observed A not observed not observed	C R R C not observed not observed	R F Olivine F not observed not observed F	R not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed F C	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed R not observed not observed R	i not observed not observed
B         A         A         B         A         B        B        B        B        B         B         B         B        B         B        B        <	C0020A         17         R         4         7         1938.77         fine to medium sand           C0020A         17         R         4         17         1938.87         silty clay	organic-rich	medium 3 moderate 3 very fine 1 subangular 4	well sorted 3 R chlorite moderately sorted 2	R A not observed D F not observed	A F not observed C not observed not observed	not observed Olivine A not observed not observed not observed not observed	F not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed R R not observed A R	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed d not observed
D         D        D        D         D        D         D        D         D         D         D         D         D        D         D         D         D        D        D        D       D       D       D <td>C0020A         17         R         5         7         1940.18         medium to coarse sand           C0020A         17         R         5         23         1940.34         sity fine sand</td> <td></td> <td>medium         3         moderate         3           fine         2         moderate         3</td> <td>well sorted 3 moderate 2</td> <td></td> <td>A F not observed</td> <td>not observed R not observed</td> <td>not observed not observed not observed</td> <td>not observed</td> <td>not observed not observed not observed</td> <td>not observed not observed not observed</td> <td>not observed R not observed</td> <td>not observed not observed not observed not observed not observed not observed not observed not observed not observed</td> <td>i not observed i not observed d not observed</td>	C0020A         17         R         5         7         1940.18         medium to coarse sand           C0020A         17         R         5         23         1940.34         sity fine sand		medium         3         moderate         3           fine         2         moderate         3	well sorted 3 moderate 2		A F not observed	not observed R not observed	not observed not observed not observed	not observed	not observed not observed not observed	not observed not observed not observed	not observed R not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
<tbool <tr="">NNN</tbool>	C0020A 17 R 6 0-5 1940.87 1940.92 medium sand	dolomitic	medium 3 subrounded to well rounded 1.5	well sorted 3		A         not observed         not observed           A         F         F           A         F         not observed	not observed not observed C not observed Olivine C F not observed R not observed	not observed         not observed         not observed           R         R         not observed         not observed           I not observed         not observed         not observed         not observed	not observed not observed not observed	not observed not observed not observed not observed A not observed not observed R not observed	not observed C not observed not observed F not observed not observed not observed	R         not observed           not observed         R         not observed           not observed         not observed         not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
N         N        N        N        N        N         N        N        N        N        N         N        N        N        N        N       N       N     <	C0020A 17 R 7 32 1941.85 fine sand		fine 2 subrounded 2	moderately sorted 2	F C not observed		not observed not observed F	not observed not observed not observed	not observed	not observed A not observed		not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed C not observed not observed C	not observed not observed not observed
	C0020A 17 R 8 26.5 1943.2 fine to medium sand		medium         3         subangular         4           medium         3         subrounded         2	poorly sorted 1 olivine C moderate 2	not observed A not observed not observed D C	A not observed not observed A C not observed A F F	not observed C F not observed not observed A not observed C C	not observed not observed R not observed not observed	not observed not observed	not observed not observed not observed not observed F not observed	not observed not observed R not observed not observed not observed not observed F ont observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed J not observed
<tboos< th=""> A<td>C0020A         17         R         8         94         1943.875         sandy silt           C0020A         17         R         10         63-64         1945.285         1945.295         silty clay</td><td></td><td>fine         2         moderate         3           very fine         1         well rounded         1</td><td>poorly sorted 1 moderate to well sorted 2.5</td><td>not observed A not observed D F not observed</td><td>D not observed not observed C not observed R</td><td>not observed C not observed not observed not observed R not observed C F</td><td>not observed not observed not observed not observed not observed not observed</td><td>not observed not observed</td><td>not observed not observed not observed not observed not observed not observed</td><td>not observed not observed not observed C C</td><td>not observed not observed not observed not observed not observed not observed and observed not observed not observed</td><td>not observed not observed not observed not observed not observed not observed</td><td>i not observed d not observed</td></tboos<>	C0020A         17         R         8         94         1943.875         sandy silt           C0020A         17         R         10         63-64         1945.285         1945.295         silty clay		fine         2         moderate         3           very fine         1         well rounded         1	poorly sorted 1 moderate to well sorted 2.5	not observed A not observed D F not observed	D not observed not observed C not observed R	not observed C not observed not observed not observed R not observed C F	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed C C	not observed not observed not observed not observed not observed not observed and observed not observed not observed	not observed not observed not observed not observed not observed not observed	i not observed d not observed
N = 1         N = 1        N = 1	C0020A         19         R         1         63         1950.63         silty clay           C0020A         19         R         1         138         1951.38         clay		very fine         1         sub angular         4           very fine         1         well rounded         1	well sorted 3 moderately sorted 2	A C not observed D F not observed	F not observed not observed F not observed not observed	not observed not observed F not observed not observed A	not observed         not observed         not observed           C         not observed         not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed A-D F not observed A not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed d not observed
N         N        N        N        N        N        N         N        N        <	C0020A         19         R         3         13.5         1952.305         siltyline sand           C0020A         19         R         4         49         1954.07         silty sandstone	organic-rich	fine         2         moderate to subangular         3.5           fine         2         moderate to subangular         3.5	moderate to well sorted 2.5 poorly sorted 1	C C F C C not observed	A not observed not observed A not observed R A not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	I not observed not observed not observed I not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed C C C not observed A-D not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	J not observed d not observed
	C0020A         19         R         7         40         1957.49         silty clay           C0020A         19         R         7         100         1958.09         clay		very fine         1         angular         5           very fine         1         well rounded         1	poorly sorted 1 well sorted 3	D A not observed		not observed R Olivine not observed not observed not observed not observed not observed not observed not observed	not observed F not observed	not observed	not observed not observed not observed not observed not observed not observed	not observed A not observed	not observed R not observed not observed not observed not observed not observed R not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
	C0020A 19 R 8 46 1958.96 silt		very fine 1 subangular 4	moderatley sorted 2	C         A         not observed           R         A         R           not observed         A         not observed	F         not observed           F         F         not observed           A         R         not observed	not observed not observed R not observed not observed F not observed not observed not observed	not observed         F         not observed           not observed         not observed         not observed           not observed         C         not observed	not observed not observed not observed	not observed not observed not observed	not observed         C         F           not observed         F         not observed           not observed         C         F	not observed F not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
	C0020A         20         R         1         0-1         1959.5         1959.51         clay           C0020A         20         R         1         112-113         1960.62         1960.63         silty fine sand	organic-rich	fine 2 angular 5	moderatelly sorted 2 Homblende?	C A F	rot observed not observed not observed F F not observed C F not observed	not observed Olivine R not observed Pyroxene R not observed not observed not observed Olivine R F	not observed F not observed     not observed not observed     not observed F not observed	not observed not observed not observed	not observed not observed not observed	not observed C not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	1 not observed d not observed d not observed
N         N        N        N        N        N         N         N        N       N        N        N       N	C0020A         20         R         1         130         1960.8         carbonate cement           C0020A         20         R         3         1961.565         sandy siltstone		very fine 1 fine 2 moderate to subrounded 2.5	cementation poorly sorted 1	not observed not observed not observed C A not observed		not observed not observed not observed not observed not observed not observed not observed F		not observed not observed not observed	not observed D not observed not observed not observed not observed	not observed not observed not observed not observed C not observed not observed C not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed A not observed not observed not observed not observed not observed	
	C0020A         20         R         4         5to8         1962.39         1962.42         slity sandstone           C0020A         20         R         4         50-51         1962.84         1962.85         clay		very fine         1         moderate to subrounded         2.5           very fine         1         subrounded         2	poorly sorted 1 moderatelly sorted 2	A A not observed D F not observed					not observed F not observed not observed C not observed	not observed C not observed not observed A not observed ont observed A not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed R not observed not observed not observed	i not observed not observed
No. 5         No. 5        No. 5         No. 5	C0020A         20         R         6         46-48         1965.64         1965.66         fine to medium sand           C0020A         20         R         7         65.5         1966.345         fine to medium sandstone	organicritori	medium         3         suabangular         4           medium         3         moderate to subrounded         2.5	moderately sorted 2 csrbonate cemented	not observed A not observed	A F not observed	not observed not observed F	not observed not observed R not observed not observed not observed	not observed not observed	R A not observed not observed not observed	not observed not observed not observed C not observed	not observed not observed not observed	not observed not observed F not observed not observed not observed	not observed d not observed
Dist         Dist        Dist         Dist         Dist	C0020A         20         R         8         88-89         1967.33         1967.34         fine sandstone           C0020A         21         R         2         35-36         1970.77         1970.78         sandstone		fine         2         moderate to subangular         3.5           fine         2         moderate to subangular         3.5	poorly sorted 1	C A F C A F	A F not observed A R not observed	not observed not observed A not observed Olivine C not observed	A R not observed I not observed C not observed	not observed not observed	not observed F not observed not observed C not observed	not observed not observed not observed C F	R not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
	C0020A         22         R         1         113         1974.13         clayey siltstone           C0020A         22         R         2         7         1974.48         fine sandstone	organic-rich	very fine 1 moderate to subrounded 2.5	moderate to porly sorted 1.5	A A F	C R not observed A not observed not observed	not observed not observed C not observed Olivime C F	F not observed not observed not observed F not observed	not observed not observed	not observed F not observed not observed not observed	not observed C F not observed C not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed	d not observed d not observed
N D        D        D        D        D         D         D	CO020A         22         R         2         89         1975.3         claystone           C0020A         22         R         3         17         1975.99         claystyllistone           C0020A         22         R         3         50-56         1976.32         1976.38         catronate concretion		very fine 1 moderate to subangular 3.5	well sorted 3		F not observed not observed	not observed not observed not observed	not observed not observed not observed	not observed	F D not observed	not observed         C         not observed           not observed         C         F           not observed         F         not observed	not observed not observed not observed	not observed not observed not observed	d not observed
No. 0	C0020A 22 R CC 30 1978.99 clayey siltstone	organic-rich	fine         2         moderate to subangular         3.5           very fine         1         moderate to subrounded         2.5	well sorted 3	A A not observed	A F not observed C not observed not observed	not observed Olivine F not observed not observed not observed C	R F not observed	not observed not observed	R not observed not observed not observed not observed	not observed F not observed not observed A not observed	not observed not observed not observed	not observed not observed not observed	d not observed
Dist         B	C0020A         23         R         1         75         1982.25         silty clay           C0020A         23         R         2         103         1983.49         1983.5         silt to fine sand	organic-rich	very fine 1 angular 5 fine 2 moderate 3	well sorted 3 chlorite few poorly sorted 1	D C not observed	A F not observed	not observed not observed R not observed Olivine R not observed	not observed not observed not observed R not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed C not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
No. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	C0020A 23 R 3 74 1984.595 1984.605 clayey silt		very fine         1         subrounded         2           very fine         1         moderate         3	moderateley sorted 2 poorly sorted 1	A D not observed	C F not observed F not observed not observed	Pyroxene R Olivine R F not observed not observed not observed	not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed F not observed	not observed not observed not observed	not observed not observed not observed	d not observed
No.         No.        No.         No.         No.        No.        No.        No.       No.       No. <td>COD20A         2.3         R         6         2.0         1907.0         College man.           C0020A         2.3         R         8         8         1999.555         1999.565         sill           C0020A         2.3         R         C         15         1991.225         1991.235         silly clay           C0020A         2.3         R         CC         15         1991.225         silly clay</td> <td></td> <td>very fine 1 subangular 5</td> <td>poorly sorted 1 moderate to well sorted 2.5</td> <td>F not observed not observed D A not observed</td> <td>C F not observed C F not observed</td> <td>not observed not observed not observed not observed not observed not observed</td> <td>not observed not observed not observed not observed</td> <td>not observed not observed</td> <td>not observed not observed not observed not observed not observed not observed</td> <td>not observed C F not observed C not observed</td> <td>not observed not observed not observed not observed not observed</td> <td>not observed not observed R not observed not observed</td> <td>d not observed</td>	COD20A         2.3         R         6         2.0         1907.0         College man.           C0020A         2.3         R         8         8         1999.555         1999.565         sill           C0020A         2.3         R         C         15         1991.225         1991.235         silly clay           C0020A         2.3         R         CC         15         1991.225         silly clay		very fine 1 subangular 5	poorly sorted 1 moderate to well sorted 2.5	F not observed not observed D A not observed	C F not observed C F not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed not observed not observed	not observed C F not observed C not observed	not observed not observed not observed not observed not observed	not observed not observed R not observed not observed	d not observed
Condition         Condition        Condition        Condition <th<< td=""><td>CU0200         24         R         2         31-32         11932.32         11932.33         11930.010           C0020A         24         R         4         37.38         1994.35         11994.26         silly sand           C0020A         25         R         1         9         11995.09         siltstone</td><td></td><td>medium         3         well rounded         1           very fine         1         moderate to subrounded         2.5</td><td>moderate to well sorted         2.5           moderate to porly sorted         1.5         few calcareous grain</td><td>R A not observed C C not observed</td><td>A C C C R not observed</td><td>not observed Olivine C F not observed not observed not observed</td><td>not observed not observed not observed not observed not observed not observed</td><td>not observed not observed</td><td>not observed not observed not observed not observed A not observed</td><td>not observed R not observed F not observed</td><td>not observed not observed not observed not observed not observed not observed</td><td>not observed not observed not observed not observed not observed not observed</td><td>d not observed d not observed</td></th<<>	CU0200         24         R         2         31-32         11932.32         11932.33         11930.010           C0020A         24         R         4         37.38         1994.35         11994.26         silly sand           C0020A         25         R         1         9         11995.09         siltstone		medium         3         well rounded         1           very fine         1         moderate to subrounded         2.5	moderate to well sorted         2.5           moderate to porly sorted         1.5         few calcareous grain	R A not observed C C not observed	A C C C R not observed	not observed Olivine C F not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed A not observed	not observed R not observed F not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
Visic No.         No.        No.        No.        No.        No.        No.        No.        No.        No.	C0020A         25         R         1         115         1996.15         siltstone           C0020A         25         R         1         133         1996.33         sandy siltstone		very fine         1         moderate to subrounded         2.5           fine         2         subrounded         2	well sorted 3 moderate to well sorted 2.5	A not observed not observed F C R	F not observed not observed C not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	not observed not observed	not observed not observed not observed not observed D not observed	not observed D not observed not observed C not observed	not observed not observed not observed F not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
conderseconderseconderseconderseon descreeno d	C0020A 25 R 5 5 2000.04 sitty claystone	carbonaceous	very fine 1 subangular 5	well sorted 3		A R not observed not observed F not observed F not observed not observed	not observed Olivine R F not observed not observed F not observed not observed F	not observed         not observed         not observed           not observed         not observed         not observed           not observed         not observed         not observed	not observed not observed not observed	not observed R not observed	not observed R F	not observed F not observed not observed R not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	i not observed i not observed d not observed
Name	C0020A         25         R         5         23         2000.22         clayey altorne           C0020A         25         R         5         47         2000.46         siltstone           C0020A         25         R         6         22.5         2001.62         sandy allistone		very fine         1         moderate to subangular         3.5           fine         2         moderate to subrounded         2.5	moderate to well sorted 2.5 moderate to porly sorted 1.5	A A not observed	C not observed not observed C not observed not observed A not observed not observed	not observed not observed not observed not observed not observed not observed not observed F	not observed not observed not observed     not observed not observed     not observed not observed     not observed not observed	not observed not observed not observed	C A not observed not observed F not observed not observed R not observed	not observed C not observed not observed not observed not observed not observed C not observed	not observed         not observed         not observed           R         not observed         not observed           R         not observed         not observed	not observed not observed not observed not observed not observed not observed not observed not observed not observed	d not observed d not observed d not observed
b         k	C0020A         25         R         6         42         2001.815         claystone           C0020A         25         R         CC         12         2002.21         silistone           C0020A         25         R         CC         12         2002.21         silistone           C0020A         25         R         3.0         1998.12         sandv silit	organic-rich	very fine         1         moderate to subrounded         2.5           very fine         1         moderate to subrounded         2.5	well sorted 3 moderate to well sorted 2.5	A R not observed D A not observed	C not observed not observed not observed not observed C C not observed	not observed not observed not observed not observed not observed not observed not observed Olivine R not observed	not observed not observed not observed not observed	not observed not observed	R F not observed not observed not observed	not observed A not observed not observed not observed	not observed not observed not observed R not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
Dubbel value         Lobative         Zab         K         Goldserved         A         F         Indodserved         A         Chooleberved         A         Chooleberved        A	C0020A         26         R         1         49         2110.49         silly clay           C0020A         26         R         3         125         2113.36         clayey sillstone           C0020A         26         R         4         100-120         2114.72         clayey sillstone           C0020A         26         R         4         100-120         2114.85         2114.72         clayey sillstone		very fine 1 moderate to subangular 3.5 very fine 1 moderate 3	well sorted 3 moderate to well sorted 2.5	D F not observed A F not observed	F R not observed	not observed not observed F	not observed F not observed not observed R not observed	not observed not observed	R F not observed R R not observed	not observed not observed not observed	not observed not observed not observed	not observed not observed not observed	d not observed
Concernent         Concern			fine         2         well rounded         1           very fine         1         subrounded to well rounded         1.5	moderate sorting 2 moderate to well sorted 2.5	A R not observed A C not observed	A R not observed	not observed not observed P	not observed not observed not observed	R	not observed R not observed				
Lotation	C0020A 27 R 2 37-36 2201.365 2201.375 sandy sit		very fine         1         moderate         3           fine         2         moderate to subangular         3.5	moderateley sorted 2 moderate to well sorted 2.5		A F not observed A not observed not observed		not observed inst observed inst observed	notobaciirea	not observed not observed not observed	not observed inst observed inst observed	not observed interobserved	not observed not observed not observed	d not observed
Description         Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<>	CUUZUA         28         R         4         12         2303.7         Silfstone           C0020A         28         R         4         21         2303.79         clay silt	dolomitic	medium         3         moderate         3           very fine         1         subangular         5           very fine         1         moderate         3	moderate to well sorted 2.5 heavy mineral (kyanite) R moderate 2	C F not observed	C R not observed A not observed not observed	not observed not observed R not observed not observed F	not observed not observed not observed	not observed not observed	not observed not observed not observed D not observed	not observed not observed R	not observed not observed not observed not observed not observed not observed	not observed not observed not observed not observed not observed not observed	d not observed d not observed
			fine 2 moderate 3	moderate to poorly sorted 1.5 from mbio sampel, heavy mineral (kyanite) R	C A not observed	A not observed not observed	not observed Olivine C not observed	not observed R not observed	not observed	R not observed not observed	not observed R not observed	not observed not observed not observed	not observed not observed not observed	d not observed

#### Smear slides Site C0020 (core continued)

Hole	D Core Ty	ype Sectio	n Interval	From (mbsf)	To (mbsf)	Lithology	Key component	Grain size	Grain size #	Roundness	Roundness #	Sorting	Sorting #	Remarks Clay	Quartz	Feldspar	Lithic fragments	Mica	Glauconite	Pyroxene	Fe-Mg silicate mineral	Volcanic g	glass Pumice	Iron sulfide	Palagonite Calcite	Aragonite	Dolomite	Siderite	Barite	Organic material	Wood/lignite	Diatoms	Sponge Spicules	Radiolaria	Silico flagellates	Foraminifera Shell Fragment	
C0020	29	R 1	2-Mar	2400.02		dolomite		fine	2	subangular	5	poorly sorted	1	F	F	not observed	not observed	not observed	not observed	not observed	not observed	not obser	ved not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	29	R 1	22-23	2400.23		fine sand		fine	2	well rounded	1	moderate sorting	2	F	D	R	A	R	R	not observed	Olivine R	not obser	ved not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	29	R 3	92-93	2403.085	2403.095	fine sand	dolomitic	fine	2	moderate	3	poorly sorted	1	R	A	not observed	A	С	F	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	С	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	29		37-38	2403.945	2403.955	sand		coarse	4	well rounded	1	poorly sorted	1	F	A	not observed	A	F	F	not observed	Olivine F	С	F	not observed	not observed not observ	ed not observed	A	not observed	not observed	not observed	R	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	29	R 7	100	2407.75		fine to medium sand		medium	3	subrounded	2	poorly sorted	1	C	A	not observed	A	F	F	not observed		F			not observed not observ	ed not observed	F	not observed	not observed	F	not observed	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	. 29 1	R 8	16-17	2408.315	2408.325	silty clay	dolomitic	very fine	1	well rounded	1	well sorted	3	F	R	not observed	A	R	not observed	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	not observed	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	. 30 I	R 1	0-1	2446.5	2446.51	Fine sand		fine	2	moderate	3	moderate sorting	2	F	A	not observed	A	С	F	not observed	not observed	F	F	not observed	not observed not observ	ed not observed	F	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	. 30 I	R 1	10	2446.6		silt	organic-rich	very fine	1	subangular	4	well sorted	3	F	F	not observed	D	F	not observed	not observed	not observed	R	not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	С	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	. 30 I	R 1	55	2447.05		medium sand		medium	3	angular	5	well sorted	3	R	F	not observed	A	F	not observed	not observed	not observed	R	not observed	С	not observed not observ	ed not observed	F	not observed	not observed	D	F	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	30	R 1	79	2525.5		silty clay		very fine	1	subrounded	2	well sorted	3	D	F	not observed	F	not observed	R	not observed	not observed	F	not observed	R	not observed not observ	ed R	A	not observed	not observed	F	С	not observed	R	not observed	not observed	not observed not observ	ved not observed
C0020	30	R 2	4	2447.88		silty clay	dolomitic	very fine	1	moderate	3	well sorted	3	A	F	not observed	not observed	not observed	R	not observed	not observed	R	not observed	F	not observed R	not observed	A	R	not observed	A	F	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	30 1	R 2	18	2448.02		silty clay	organic-rich	very fine	1	angular	5	well sorted	3	C	F	not observed	D	not observed	not observed	not observed	not observed	R	not observed	F	not observed not observ	ed not observed	not observed	not observed	not observed	D	R	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	. 30 I	R 4	90	2450.6		sand		medium	2	subrounded	2	poorly sorted	1	R	A	not observed	A	F	not observed	not observed	Olivine F	С	not observed	С	not observed F	not observed	not observed	not observed	not observed	R	not observed	not observed	R	not observed	not observed	not observed not observ	ved not observed
C0020	. 30 I	R 5	48	2451.19		silt		very fine	1	moderate	3	well sorted	3	A	F	not observed	C	F	R	not observed	not observed	С	R	not observed	not observed not observ	ed not observed	A	R	not observed	R	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	. 30 I	R 5	60	2451.31		silt		very fine	1	well rounded	1	poorly sorted	1	C	С	not observed	A	R	R	not observed	not observed	not obser	ved not observed	not observed	not observed not observ	ed not observed	not observed	R	not observed	R	R	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	31	R 1	29.5	2456.295		Silty clay		very fine	1	subangular	5	well sorted	3	A	F	not observed	F	F	F	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	F	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed
C0020	32	R 1	100	2457.5		silty sand	dolomitic	medium	3	subangular	5	moderate sorting	2	F	C	not observed	A	F	R	not observed	Olivine R	F	R	not observed	not observed not observed	ed F	С	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	32	R 2	111	2459.06		silt	dolomitic	very fine	1	well rounded	1	well sorted	1	not observe	d F	not observed	С	R	not observed	not observed	not observed	R	not observed	not observed	not observed not observ	ed not observed	D	F	not observed	R	F	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	32 1	R 3	37	2459.725		clay	dolomitic	very fine	1	subrounded	2	well sorted	1	D	F	not observed	A	F	R	not observed	not observed	F	not observed	not observed	not observed A	not observed	A	not observed	not observed	R	not observed	not observed	not observed	not observed	not observed	not observed not observ	rved not observed
C0020	32 1	R 5	15.5	2461.685		silty clay		very fine	1	subrounded	2	moderate sorting	2	A	С	not observed	A	R	R	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	С	not observed	not observed	R	F	not observed	F	not observed	not observed	not observed not observ	rved not observed
C0020	32 1	R 6	29.5	2463.23		silty clay		very fine	1	subrounded	2	well sorted	1	A	F	not observed	A	С	R	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	D	not observed	not observed	R	F	not observed	R	not observed	not observed	not observed not observ	ved not observed
C0020	32	R 7	43	2464.075		silty clay		very fine	1	subangular	4	moderate sorting	2	D	F	not observed	A	R	not observed	not observed	not observed	F	not observed	not observed	not observed not observ	ed not observed	F	not observed	not observed	R	F	not observed	R	not observed	not observed	not observed not observ	ved not observed
C0020	32	R CC	16-18	2466.735	2466.755	Fine sand		fine	2	subrounded	2	moderate sorting	2	chlorite R R	A	not observed	D	F	R	not observed	not observed	С	not observed	not observed	not observed not observ	ed not observed	R	not observed	not observed	С	F	not observed	not observed	not observed	not observed	not observed not observ	ved not observed

Abundances: R=Rare(<0.1%), F=Few (0.1-1%), C=Common (1-10%), A=Abundant(10-50%), D=Dominant(>50%)

#### Thin sections Site C0020 (core)

Sample	From (mbsf)	To (mbsf)	Lithology	Grain size	Roundness	Sorting	Remarks	Quartz	Epidote	Kyanite	Feldspar	Lithic fragments	Mica	Olivine	Volcanic glass	Iron sulfides	Chlorite	Clays	Calcite
C0020A7R-1	1599	1599.05	Fine groundmass. Meta tuffite?	Coarse	Well rounded	Moderate-High	All basic igneous mineral present, no calcite	D			А		F	А	R		А		
C0020A7R-1	1599.05	1599.13	Gabbro	Coarse	Angular	Well sorted		R	А		D								
C0020A23R-9	1981.62	1981.65	calcite cemented shaly fine sandstone	fine	angular	poorly sorted		D			R	С	С	R				С	D

Sample	From (mbsf)	To (mbsf)	Lithology	Grain size	Roundness	Sorting	Remarks	Pyroxene	Organic material	Dolomite	Aragonite	Wood/ lignite	Diatoms	Sponge spicules	Radiolaria	Silico flagellates	Foraminifera	Shell fragments	Nanofossils
C0020A7R-1	1599	1599.05	Fine groundmass. Meta tuffite?	Coarse	Well rounded	Moderate-High	All basic igneous mineral present, no calcite	А											
C0020A7R-1	1599.05	1599.13	Gabbro	Coarse	Angular	Well sorted		D											
C0020A23R-9	1981.62	1981.65	calcite cemented shaly fine sandstone	fine	angular	poorly sorted			R										

Abundances: R=Rare(<0.1%), F=Few (0.1-1%), C=Common (1-10%), A=Abundant(10-50%), D=Dominant(>50%)